STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division
Honolulu, Hawaii 96813

October 13, 2023

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

MAUI

NON-ACTION ITEM: Update Regarding the Disposition of Water License for Water Use from East Maui on the Island of Maui.

BACKGROUND

At its meeting on November 10, 2022, under agenda item D-5, the Board approved as amended the continuation of revocable permits for the use of surface water from East Maui by Alexander and Baldwin, Inc. and East Maui Irrigation Company, Limited (collectively the "Permittee"). Staff brings an update before the Board on several key issues. Due to several outstanding complex issues, approval for public auction for a water license will not be able to be brought before the Board before the end of 2023.

WATER USAGE

Permittee has submitted water usage reports for the fourth quarter of 2022 (October to December), the first quarter of 2023 (January to March), and the second quarter of 2023 (April to June). In Q4 2022, Permittee diverted an average of 22.96 million gallons per day (mgd) from State streams in East Maui over the three-month period. 16.69 mgd of water was used for diversified agriculture purposes for that same period. In Q1 2023, Permittee diverted an average of 12.80 mgd over the three-month period, with 6.74 mgd used for diversified agriculture purposes. In Q2 2023, the Permittee diverted an average of 18.27 mgd with 16.71 mgd used for diversified agriculture purposes. The Permittee attributed the lower diversion amount in Q1 to a significant amount of rainfall in the Central Maui agricultural fields at that time, offsetting the need for East Maui surface water. Copies of clean and redlined versions of the status reports for Q4 2022, Q1 2023 and Q2 2023 are attached as **Exhibits A-C**.

Regarding water used for non-agricultural purposes, the County of Maui used an average of 2.24 mgd, 2.14 mgd, and 3.19 mgd in Q4 2022, Q1 2023 and Q2 2023 respectively for Upcountry Maui water service and the Kula Agricultural Park. Averages of 8.43 mgd, 6 mgd and 5.54 mgd for Q4 2022, Q1 2023 and Q2 2023 respectively, were attributed to other uses such as reservoir, seepage, fire protection, evaporation, dust control, hydroelectric and other uses. A portion of this water is the "remainder" difference between the amount of water obligated to the County of Maui (7.5 mgd) and the amount of water actually used by the County. As an example, in Q2 2023, 7.5 mgd

was diverted to meet the County's contractually obligated needs, but only an average of 3.19 mgd was actually used by the County, leaving an excess average of 4.31 mgd to flow into the Central Maui field system.

EFFICIENCY AND SYSTEM LOSSES

Permittee also submitted information regarding proposed efficiency upgrades and system losses. The documents submitted are attached as **Exhibits D and E**. To increase water use efficiency in the agricultural fields, Permittee intends to make improvements to the "on-farm" transmission system[1], including pump station and pipeline improvements, pipelines that would transmit water and bypass certain reservoirs to reduce seepage, and electrical system improvements to maximize operational capacity of the on-farm transmission system. The Permittee also proposes to install new irrigation systems to improve water use efficiency, including weed mats and high efficiency automated irrigation systems.

Regarding system losses, Permittee proposes a method of calculating system losses which excludes the amount that Permittee is obligated to provide to the County (7.5 mgd) from consideration. Permittee has also asserted that because the County does not provide advance notice of how much water the County actually needs, Permittee cannot plan effectively to make use of the excess water for their agricultural purposes and reducing the amount of water diverted for their needs. Therefore, the excess water is lost to seepage and evaporation.

While staff understands the situation faced by the Permittee, staff believes that regardless of the circumstances, the loss of approximately 4-5 mgd of water on average should be addressed accordingly. Since Permittee has submitted quarterly reports to the Department beginning in 2020, the County's average use of the diverted water has never met or exceeded the 7.5 mgd that is diverted as required by an agreement with the Permittee. Over the period from January 2020 to June 2023, the average water used by the County for Upcountry Maui was 2.30 mgd, with maximum average of 4.02 mgd for February 2022. Over the same period, water used for Kula Agricultural Park averaged 0.52 mgd, with a maximum amount of 1.08 mgd for August 2021. Therefore, over that same period, an average of 4.68 mgd was diverted in excess of County use. The County has stated that there are periods where demand for water is higher. However, staff believes that the County should invest in system upgrades to address those limited periods of higher demand (such as increasing reservoir storage capacity), rather than diverting millions of gallons of excess stream water on a daily basis based on a "worst case scenario" approach.

Another justification offered by the County for the need for excess water is that at least 7 mgd needs to flow through the Wailoa Ditch and Kamaole water treatment plant forebay in order to have sufficient pressurization for water to enter the plant and to prevent sedimentation from affecting the water. However, it is also established that the water flowing through the ditch consists of the total amount of water diverted for use by the Permittee and the County. Furthermore, the County takes water first before any water is used by the Permittee. Therefore, given the amount of water diverted for the Permittee's use, there should be 7 mgd flowing through Wailoa Ditch regardless, without the need to divert additional water in excess of the County's use. Finally, based on the County's own statements in the matter of *Board of Land and Natural Resources v. Crabtree*,

[1] Staff notes that the Central Maui farmlands are privately owned.

the County does not need a significant amount of water for firefighting. The County, through its Deputy Corporation Counsel, stated that current water allocations were sufficient to combat Upcountry Maui wildfires, using only about 37,000 gallons for that purpose.

Given that the County's actual need appears to be far less than what actually diverted on its behalf, perhaps the County should modify their system to use of water more efficiently to reduce the gap between the amount of water obligated to the County versus the amount of water actually used by the County. Additionally, Permittee has stated that if the County were to provide just one week's notice as to the County's anticipated needs for the upcoming week, Permittee could plan accordingly to make more productive use of the excess water for crop irrigation. Finally, staff notes that even though the Board does not have a direct contractual relationship with the County for water use, staff believes that the Board has the authority to reduce the amount of water that can be diverted for County use through the revocable permits, regardless of any agreement between the Permittee and the County. Staff believes that the Board should give this alternative due consideration as it would directly address concerns raised by Sierra Club of Hawaii and others regarding having water remain in the streams.

In Q2 2023, Permittee reported the total average amount of water entering the Central Maui field system from both surface and ground water sources was 25.49 mgd. For that same period, Permittee reported a total amount of 5.54 mgd for reservoir, seepage, fire protection, evaporation, dust control, and hydroelectric uses. Even if the entire 5.54 mgd were attributed to loss[2], this would result in a system loss rate of 21.73%, below the 22.7% threshold that the Board set pursuant to its prior approval for the continuation of the revocable permits. Staff also notes that as of Q2 2023, all of the reservoirs currently in use in the Central Maui field system have a total capacity of approximately 294.7 million gallons.

APPRAISAL

The Department has contracted with an appraiser to determine the fair market value of the upset rent to be used at public auction. The Board has previously approved factors as guidance that the appraisers may use as they may deem appropriate but are not required to. The factors are:

- The amount of water diverted or extracted, as allowed by the Commission on Water Resource Management (CWRM), and the proposed use of water allowed under the license.

- The amount of water diverted or extracted in proportion to the amount of water available from the surface or groundwater source.

- The cost of water delivery.

- The avoided cost to the lessee of obtaining water from practicable alternative water sources.

[2] The Permittee could not determine how much of that amount is actually lost to seepage, so staff is assuming the entire amount to err on the side of caution. However, staff notes that seepage would not exceed this amount since the remaining amount of water is attributed to other uses.

- The net economic benefit to the lessee.

- The value contributed by the lessee for watershed management pursuant to Section 171-58(e), Hawaii Revised Statutes.

LICENSE DOCUMENT

Staff is currently working on a draft water license document, in consultation with Division of Forestry and Wildlife (DOFAW) staff and the Attorney General. A key outstanding issue is the reduction of the license areas under the revocable permits and prior leases, which placed approximately 33,000 acres of forest reserve lands under private control. [3] The goal of staff is to significantly reduce the area to cover only the irrigation system footprint and buffer zone. Additionally, DOFAW is working to identify certain points in the reduced land areas to allow managed public access to forest reserve areas mauka of the irrigation system.

Staff along with the Attorney General, reviewed an agreement between the Territory of Hawaii and East Maui Irrigation Company, Limited (1938 Agreement). Pursuant to the 1938 Agreement, EMI was granted a perpetual easement from the Territory to convey all water covered by any water license held by the EMI through the "aqueduct" crossing government lands situated in East Maui extending from Nahiku to Honopou inclusive. The 1938 Agreement defines the aqueduct as "open ditches, tunnels, flumes, pipelines, natural and artificial channels, reservoirs, diverting dams, gravel and sand traps, intake structures, together with regulating gates, spillway structures and water measuring devices and shall include roads, trails, bridges, etc. used in connection therewith. A copy of the 1938 Agreement is attached as **Exhibit F**.

Prior dispositions, including the current revocable permits, greatly expanded the subject land area to include the four license areas. Since one of the objectives of the new disposition is to reduce the license land area to cover only the irrigation system footprint already covered by the easement granted by the 1938 Agreement, there is no need for a separate land disposition. Therefore, staff will focus efforts on developing a water license document to be offered through public auction for the review by the public and approval by the Board. This will also support DOFAW's objective to regain management of the license areas to provide for increased managed public access and watershed management.

Finally, staff has also consulted with Commission on Water Resource Management (CWRM) staff who have stated that Permittee is in compliance with CWRM requirements such as the interim instream flow standards (IIFS). CWRM staff noted that approval of a stream diversion works permit for the abandonment of certain diversions has been delayed due to technical issues. CWRM staff is planning a follow up inspection.

Respectfully Submitted,

Ian Hirokawa
Special Projects Coordinator

[3] The area has since been reduced to approximately 27,000 acres.

APPROVED FOR SUBMITTAL:

Dawn N.S. Chang, Chairperson

RT

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 791628, PAIA, MAUI, HAWAI'I 96779-1628 • (808) 579-9516

January 30, 2023

The Honorable Dawn Chang, Chairperson-Appointee
and Members of the Board of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

RE: Holdover of Revocable Permits Nos. S-7263, S-7264, and S-7265 issued to Alexander & Baldwin, Inc. ("A&B") and Revocable Permit No. S-7266 issued to East Maui Irrigation Company, Limited ("EMI") for Water Use on the Island of Maui: Q4 2022 Status Report

Dear Chair Chang:

The purpose of this letter is to provide the 4th quarter status report on A&B/EMI's compliance with permit conditions imposed by the Board of Land and Natural Resources ("***BLNR***") as part of its approval of the holdover of Revocable Permits Nos. S-7263, S-7264, and S-7265 issued to A&B and Revocable Permit No. S-7266 issued to EMI for the calendar year 2022, as articulated in the Findings of Fact, Conclusions of Law, and Decision and Order ("*2022 D&O*") filed by the BLNR on June 30, 2022. Please note that this 4th quarter report addresses the amended and re-stated permit conditions articulated in the 2022 D&O. In accordance with those conditions, we are submitting a clean version of the 4th quarter report, along with a version which tracks changes against the quarterly report submitted for Q3 2022.

The attached document lists each of the permit conditions and corresponding compliance actions undertaken as of December 31, 2022.

Since the last report that was submitted, water collection enabled by these East Maui revocable permits continued to serve the needs of the public water systems that serve Upcountry Maui and Nahiku, both owned and operated by the County of Maui Department of Water Supply, as well as the County's Kula Ag Park and increasing diversified agricultural activities in Central Maui undertaken by Mahi Pono. Maintaining these Central Maui lands in agriculture is consistent with the state's constitutional mandate to protect important agricultural lands, as well as the Hawaii State Plan, Maui Countywide Policy Plan, Maui Island Plan, and Maui community plans. These uses of East Maui stream water are further recognized and confirmed by the June 20, 2018, Interim In-stream Flow Standard ("***IIFS***") decision issued by the Commission on Water Resource Management ("***CWRM***") for East Maui streams, 24 of which are within the area covered by the East Maui R.P.'s. The diversion and use of East Maui stream water this year has been in compliance with the CWRM's June 2018 IIFS decision.

EXHIBIT A

As info, although outside of the timeframe of this Q4 report, a meeting of the “interim committee” referenced in permit condition (7) in the 2022 D&O was held via video conference on January 27, 2023. Updates relating to the IIFS, EIS, and Mahi Pono's farming operations were provided to the Committee. The Q1 2023 meeting is scheduled for April 20, 2023.

Please do not hesitate to contact us should you have any questions on the attached permit compliance status report.

Sincerely,

Meredith J. Ching, A&B

Mark Vaught, EMI

cc: Ian Hirokawa, DLNR Land Division (via email)

EAST MAUI IRRIGATION COMPANY, LLC
P.O. BOX 791628, PAIA, MAUI, HAWAI'I 96779-1628 • (808) 579-9516

BLNR CONDITIONS FOR HOLDOVER OF EAST MAUI WATER PERMITS
STATUS OF COMPLIANCE AS OF DECEMBER 31, 2022

CONDITIONS PER THE FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION & ORDER

1. ***Require the revocable permits at issue- S-7263 (Honomanu), S-7264 (Huelo), S-7265 (Ke'anae) , and S-7266 (Nahiku) (collectively, the "RPs") to incorporate the Commission on Water Resource Management's ("CWRM") June 20, 2018 Findings of Fact , Conclusions of Law, and Decision & Order ("6/20/2018 CWRM D&O"). Diversion of surface water from the streams listed in the 6/20/2018 CWRM D&O shall be in accordance therewith, and so shall the timing for cessation of diversions, as necessary.***

   Status: The need for water from the East Maui streams averaged approximately 22.96 million gallons per day (MGD) during the fourth quarter of 2022. This amount continues to be well within the bounds of the 2018 IIFS decision concerning total quantity and the use of specific streams. It is also significantly less than the 45 MGD allocation set by the BLNR in its Findings of Fact, Conclusions of Law, and Decision & Order entered June 30, 2022 in DLNR File No. CCH-LD-21-01.

   The water that was diverted in Q4 2022 continued to supply the County of Maui for its Upcountry Maui water system, the Kula Ag Park, as well as fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands ? now owned and managed by Mahi Pono.

   There was a significant amount of rainfall in the month of December, which caused water to sheet flow directly into the ditch itself, inflows that are unpredictable and not controllable, rather than exclusively entering the system via the stream diversions.

   Mahi Pono continues the expansion of its agricultural operations, which will result in a corresponding increase in the need for water from East Maui. Mahi Pono completed a total of 1,880 acres of plantings in the fourth quarter of 2022 to bring the total planted acreage for Mahi Pono's **East Maui fields** to 8,316 acres. The Permittees – and by extension, Mahi Pono – remain committed to the efficient use of East Maui stream water. Mahi Pono's total amount of water usage, together with that of the County of Maui, will not exceed the limits of the IIFS decision at any point during its expansion.

   All initial approvals have been received from the CWRM to abandon the diversions on the "taro streams" to fully restore their streamflow. EMI received Department of Health

approval of the Best Management Practices Plan for the Category 2 diversions. Construction on fourteen of the intakes has been completed, with ongoing work taking place on the final remaining intake. We anticipate completing the remaining work on the final intake by April 30, 2023, subject to EMI being able to secure the requisite materials and helicopter delivery during the upcoming quarter.

The Permittees have also initiated discussions with CWRM staff on IIFS compliance for the 'non-taro streams.' A draft work plan was submitted to CWRM for 41 diversions on 17 additional streams that are implicated by the 2018 IIFS decision. Before issuing the needed permits to undertake the work, CWRM will need to conduct site visits to each diversion site. In the meantime, the Permittees comply with the IIFS decision regarding instream flow requirements (i.e., by individual streams and the total quantity of flow). This compliance is subject to CWRM staff verification. Connectivity requirements of the IIFS decision are being met to the extent possible without the physical modifications that require governmental reviews and approvals. The draft work plan transmitted by the Permittees to the CWRM does address means of achieving full connectivity compliance for these additional non-taro streams.

In summary, the Permittees' diversion of water under the subject 2021 RPs continues to comply with the CWRM's June 20, 2018, IIFS order concerning flow volumes, by individual streams, compliance with connectivity requirements has been met to the extent legally possible without further governmental review and approvals. Significant progress has been made on pursuing the modifications and abandonment of diversions on the seven 'taro streams,' an established and continued priority for both the permittees and the State.

2. ***There shall be no waste of water. System losses and evaporation shall not be considered as a waste of water.***

   Status: See uses outlined in response to #1 above. All diverted water is being put to beneficial agriculture use or municipal use, as the diverted water supplies the County of Maui for its Upcountry Maui water systems, the Kula Ag Park, Central Maui fire suppression needs, municipal users who do not currently have access to the County DWS delivery system, and agricultural uses in Central Maui on lands now owned and managed by Mahi Pono. Exhibit A notes system losses and evaporation as water uses.

3. ***Any amount of water diverted under the RPs shall be for reasonable and beneficial use and always in compliance with the interim instream flow standards (IIFS).***

Status: See responses to #1 and #2 above. In the fourth quarter, CWRM made additional amendments to IIFS for certain streams in the Huelo license area. There are ongoing proceedings before CWRM to address diversion modifications necessary to effectuate the recent IIFS amendments. Permittees are participating in that ongoing proceeding and have met all applicable deadlines to-date.

4. ***Permittee shall provide a report on the progress regarding the removal of diversions and fixing of the pipe issues before the end of the RP term.***

Status: This permit condition was initially imposed in 2018, and we believe it relates to a pipe at Pualoa (aka Puolua) Stream at the Lowrie Ditch. In a previous status report, we reported that the pipe had been extended to provide wetted pathways for the movement of stream biota on Pualoa Stream. At the 2018 BLNR hearing on the subject RP's (for 2019), statements were made that the pipe needs to be extended further to go under the road and that two 4" rusted pipes needed to be removed. Accordingly (and as reported in previous quarterly reports), the two 4" pipes have since been removed from the watershed and a new design intended to improve fish migration has been incorporated in the diversion modification plan for compliance with the IIFS and approved by the CWRM in its approval of the Category 3 SWUP's. This specific scope of work was part of the overall work plan referenced earlier.

Road maintenance and repair activities continue in order to better facilitate access to several of the more remote intakes that are subject to Category 2 permits. We have submitted a final plan to CWRM for additional modifications to Category 1 diversions, some of which addresses the removal of diversions which would not impact the structural or operational integrity of the EMI system. CWRM is in the process of reviewing the plan and discussing its implementation with East Maui community groups.

5. ***Permittee shall cleanup trash and debris from revocable permit areas starting with areas that are accessible and close to streams; "trash and debris" shall be defined as " any loose or dislodged diversion material such as concrete, rebar, steel grating, corrugated metals, railroad tires, etc., that can be removed by hand (or by light equipment that can access the stream as is)"*.**

Status: The Permittees have established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted

specific identification and removal operations of debris that has been observed from previous fieldwork. In the fourth quarter of 2022, EMI continued to be vigilant about monitoring and removing unused material. In Q4 2022, EMI found additional debris while performing work in remote locations along the EMI system. The debris was consolidated into a single location and will be removed via helicopter in Q1 or Q2 2023.

EMI will also continue removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed, which includes diversion modifications required to meet the 2018 IIFS.

EMI understands the term "Trash and Debris" is further defined as noted in the DLNR staff submittal. As mentioned previously, EMI has established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous field work. EMI also has a practice of removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed. These practices continue to apply to the "Trash and Debris" term as more clearly defined by DLNR staff.

6. ***The RPs shall be subject to any existing or future reservations of water for the Department of Hawaiian Home Lands (DHHL);***

   Status: EMI acknowledges that the RPs shall be subject to any existing or future reservation of water for the DHHL.

7. ***Coordinate with an interim committee to discuss water usage issues in the RP areas. The committee shall consist of seven members, representing EMI/Mahi Pono, Farm Bureau, Office of Hawaiian Affairs, the Native Hawaiian Legal Corporation, the Huelo Community Association, the Sierra Club, and the County of Maui. The interim committee shall meet at least quarterly, more often as useful.***

   Status: The quarterly meeting of the RP Committee was held on Friday, January 27, 2023. Jayson Watts (Mahi Pono / EMI) sent an invitation via email to the group on Tuesday, January 24, 2023. The meeting was attended by Deputy Director James Landgraf (County of Maui DWS), Lafayette Young (Huelo Community), Ashley Obrey (NHLC / Na Moku), Capsun Poe (OHA), Jayson Watts (Mahi Pono / EMI), Mark Vaught

(EMI), and Grant Nakama (Mahi Pono / EMI). A representative from the Sierra Club was unable to attend.

EMI provided an update on the work related to the implementation of the IIFS, and Mahi Pono supplied an update on farming operations. The information provided by Mahi Pono and EMI to the committee generally mirrored the farming and IIFS updates that are included as exhibits to this quarterly report. The meeting adjourned approximately 30 minutes after it started.

8. Permittee shall therefore provide quarterly written reports to the Board of Land and Natural Resources (Board) containing (at a minimum) the following information:

a. *The amount of water used on a monthly basis, including the monthly amount of water delivered for: the County of Maui Department of Water Supply and the County of Maui Kula Agricultural Park; diversified agriculture; industrial and non-agricultural uses; and reservoir/fire protection/hydroelectric uses. Descriptions of diversified agricultural uses shall also provide information as to location, crop, and use of the water. Industrial and non-agricultural uses shall specify the character and purpose of water use and the user of the water;*

Status: The amount of water used on a monthly basis, including the monthly amount of water delivered for the County of Maui DWS and Kula Ag Park, diversified agriculture, industrial and non-agricultural uses, and reservoir/fire protection/hydroelectric uses can be found in the table attached as Exhibit A. The existence of and continued use of reservoirs is extremely important for fire safety reasons. They are a major source of water for fighting fires on Maui, which occur during the dry months of the year. The location, crop, and users of agricultural water, and the specifics on industrial and non-agricultural uses can be found in the table attached as Exhibit B.

As Mahi Pono prepares new fields for planting, they continue to install new irrigation systems that focus on efficient water application measures. In addition to these new systems, we are also installing weed mat throughout the farm, which help the soil maintain moisture by reducing evaporation. The cumulative water efficiency effects of

these initiatives can be seen in the reduced amount of water remaining in the final column of the table attached as Exhibit A.

b. *An estimate of the system loss for both the EMI ditch system and the A&B field system, also on a monthly basis.*

Status: The accepted Final Environmental Impact Statement which considers East Maui water diversions facilitated by a long-term lease contains estimates for system losses for both the EMI ditch system as well as the "*A&B field system"*.

- EMI Ditch System – As stated in the FEIS, a USGS study "concluded that it was unclear whether net seepage losses even occur in the EMI Aqueduct system, due to the large amount of tunnel in the system, as well as the seepage gains that enter the system."

- A&B Field System – An estimate of the system losses by month is as shown in the table below:

Month	EMI Ditch System (in MGD)	Field System (in MGD)
October	0	1.91
November	0	2.30
December	0	5.32
Average	0	3.17

As noted by Condition #2 above, system losses and evaporation shall not be considered as a waste of water.

c. *For each stream that is subject to the 6/20/2018 CWRM D&O, a status update as to the degree to which the flow of each stream has been restored, and which artificial structures have been modified or removed as required by CWRM.*

Status: EMI prioritizes its compliance with the CWRM order and has been working with CWRM staff on implementation plans and permitting. EMI notes that the language of the CWRM order relating to

the removal of artificial structures is spelled out on page 269 of the D&O, items i, j, and k which State in part that *"it is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed."* and "The intent of the Commission is to allow for the continued use and viability of the EMI ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS. A status update is provided in the table attached as Exhibit C. Also included in Exhibit C is a copy of the section of the CWRM order relating to the removal of artificial structures.

d. *Update on removal of trash, unused man-made structures, equipment, and debris that serve no useful purpose, including documenting any reports of such items that Permittee has received from the Department, other public or private entities and members of the general public and the action(s) taken by Permittee, if any, to remove the reported items*

Status: See above response to #5 above.

e. *The method and timeline for discontinuing the diversion of water from Waipio and Hanehoi streams into the Ho'olawa stream, including status updates on implementation.*

Status: As the stream levels fluctuate during inclement weather, EMI personnel are dispatched to manually control the intake gates to prevent excess stream water inflow to the ditch. As for Haneho'i, all intakes have been sealed (per the 2018 D&O); therefore, no water enters the ditch from this stream. Regarding the Waipi'o stream, EMI personnel manually control the intakes on the ditch to prevent excess flow from entering the ditch. Thus, all flows to the ditch are delivered to and used by Mahi Pono and the County of Maui. The flows are no longer controlled into Hoolawa stream.

f. *A listing of all reservoirs in the A&B/EMI water system serviced by the RPs, with the following information provided for each:*

The capacity of each such reservoir;

The surface area of each such reservoir ;

What fields are irrigated by each such reservoir, or in the alternative, which reservoirs service the County of Maui's domestic needs, Kula Agricultural Park farmers, and DHHL lands;

Which reservoirs are lined, and with what material , and which are not;

The estimated amount of evaporation per day from the surface of each such reservoir;

An analysis of the cost and time to line at least one such reservoir; and

Information on any reservoirs planned to be taken out of service.

Status: A table containing most of the information requested above is attached as Exhibit D. Evaporation estimates are rough estimates based on a number of assumptions (e.g., slope, shape of the reservoir) and actual reservoir water levels during Q4 2022, with the figures being displayed in average gallons per day.

In addition to the information in Exhibit D, we have also determined an estimated unit cost of $7.00 per square foot (sloped) to line a reservoir, plus estimated engineering costs typically being between $30k - $60k per reservoir. If we apply these costs to a reservoir with a 10-acre surface area and assumed slope adjustment of 25%, then the resulting estimate would be approximately $3.85M.

g. *The number, location, timing, and approximate acreage of fires fought during the quarter using water from reservoirs supplied with water from the A&BIEMI system.*

Status: There were no fires reported during the fourth quarter of 2022.

h. *The names and locations of the reservoirs from which water was drawn to fight fires during the quarter, together with:*

(i) Whether those reservoirs are lined or not;

(ii) The average depth of water in those reservoirs;

(iii) Estimated average monthly inflows and outflows from those reservoirs; and

(iv) The amount of water used for hydroelectric purposes, if any.

Status: There were no fires reported during the fourth quarter of 2022. Permittees will work diligently to record the requested data in the event of future fires.

i. *A listing of all irrigation wells in the A&B/EMI water system serviced by the RPs, with the water levels and chloride levels in each well that is in active use noted.*

Status: In the fourth quarter of 2022, Wells 12, and 13 were in active use. Chloride levels measured during the quarter are provided below:

- *Well #12*
  - *pH – 7.5 (12A) and 7.3 (12B)*
  - *Sodium – 300 mg/L (12A) and 300 mg/L (12B)*

- *Well #13*
  - *pH – 7.7 (13A) and 7.6 (13B)*
  - *Sodium – 280 mg/L (13A) and 290 mg/L (13B)*

During the quarter, EMI finished installing additional equipment to measure water levels more accurately within the Mahi Pono wells. This was done at a cost of approximately $10k per well. The water levels measured during the quarter are provided below:

- *Well #12 – 24 Inches*

- *Well #13 – 30.25 Inches*

Each quarterly report shall be submitted in a format with tracked changes that clearly show the differences/updates from the prior quarter.

Such quarterly reports shall be "due" to the DLNR one month after the last calendar day of the subject quarter. Thus, the reports shall come due as follows:

Q1 Report – April 30, 2022
Q2 Report – July 31, 2022
Q3 Report – October 31, 2022
Q4 Report – January 30, 2023
. . . and so on;

This Q4 2022 report is the second version to implement a track-change format vs. the prior quarter. The deadline to submit quarterly reports is noted, and EMI is committed to timely submittals of all future reports.

9. ***The Permittee may not divert an amount of water exceeding an average of 45 million gallons per day (mgd), averaged monthly, for all permits combined, further subject to all water diverted shall be for reasonable and beneficial uses.***

   Status: The fourth quarter's need for water from the East Maui streams has averaged approximately 22.96 million gallons per day (MGD). Only that amount of water is being diverted from the East Maui watershed. This amount complies with the limit of an average of 45 MGD set by the BLNR and continues to be well within the bounds of the 45 MGD allocation set by the BLNR in its June 30, 2022 Findings of Fact, Conclusions of Law, Decision & Order in DLNR File No. CCH-LD-21-01. This water is being used to supply the County of Maui for its Nahiku and Upcountry Maui water systems, the Kula Ag Park, fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands now owned and managed by Mahi Pono.

10. ***For RP S-7266, the area identified as the Hanawi Natural Area Reserve shall be removed from the revocable permit premises. Additionally, A&B/EMI shall continue discussions with the Department's Division of Forestry and Wildlife ("DOFAW") to identify additional forest reserve lands to be removed from the license areas.***

Status: Meetings between EMI and DOFAW have been held and were focused on identifying those areas that are essential to EMI's ongoing operations, such as access routes and buffer areas around the EMI ditch system to ensure the reliable and safe operation of the system as well as the safety of EMI employees. The most recent of these meetings was held on Thursday, September 29, 2022, at DOFAW's Kahului offices. EMI has expressed to DOFAW a willingness to reduce the license/lease area as long as the permitted area (a) meets the collective needs of DLNR and DOFAW, (b) continues to allow EMI to operate its ditch system in a safe and efficient manner, and (c) does not affect the access to state water afforded by existing or future RPs and water license/lease(s). DOFAW and EMI will now focus on specifically locating suitable crossing points over the EMI system to State-owned lands located upslope. A site visit with DOFAW representatives to prospective crossing points was originally planned for Q4 2022, but was postponed due to inclement weather. Discussions between EMI and DOFAW will continue in 2023 on the reduced lease/license area.

11. ***Mahi Pono is to advise any third-party lessee's, that any decisions they make is based on availability of water on a month-to-month basis renewed annually unless there is a permanent lease***

Status: All third-party lessees have been informed through existing language in their lease agreements that the availability of water is subject to change based on various conditions, one of which would be the nature of the water availability from East Maui through an annually renewed revocable permit or an eventual permanent lease.

12. ***For the streams in the revocable permit area that have not had interim instream flow standards set, Permittee shall continue to clean up and remove debris from the permit areas and staff shall inspect and report every three months on the progress of the clean-up. For purposes of clean-up, debris shall not include any structure and equipment that is either currently used for the water diversions, or for which CWRM has not required removal.***

Status: EMI has continued to remove debris and trash from stream areas. These efforts include locations surrounding the streams located outside of the IIFS area.

13. ***Permittee shall require its staff to inspect the streams and report on whether the lands could be developed for agricultural land or water leases.***

Status: EMI understands that, in general, State-owned land adjacent to streams in East Maui are conservation lands in forest reserves which may not be suitable for agricultural development. An agricultural assessment for the East Maui lands/watershed, including the state-owned lands, was included as part of the environmental impact statement ("FEIS") prepared by the Permittees for the proposed state water lease and accepted by the State. In addition, the FEIS contemplated the use of those lands as a collection area for a state water lease.

14. ***The RPs shall also comply with all conditions required by the 6/20/2018 CWRM D&O, which includes meeting the IIFS set forth in paragraph "h" of the "Decision and Order " section of the D&O. That paragraph provides a chart showing the name of the stream, the restoration status, the amended IIFS value, and an IIFS location, if applicable, for each stream, as follows:***

Stream Name	Restoration Status	BFQs at IIFS (cfs)	IIFS Value (cfs)	IIFS Location
Makapipi	Full	1.3	n/a	Above Hana Highway
Hanawi	Connectivity	4.6	0.92	Below Hana Highway
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch
Waiaaka	None	0.77	0.77	Above Hana Highway
Pa'akea	Connectivity	0.9	0.18	At Hana Highway
Waiohue	Full	5.0	n/a	At Hana Highway
Pua'aka'a	Connectivity	0.9	0.18	Above Hana Highway
Kopiliula	H90	5.0	3.2	Below Hana Highway
East Wailuaiki	H9o	5.8	3.7	At Hana Highway
West Wailuaiki	Full	6.0	n/a	Above Hana Highway
Wailuanui	Full	6.1	n/a	At Hana Highway
Ohia/Waianu	None	4.7	n/a	None.
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch

Palauhulu	Full	11	n/a	Above Hana Highway
Pi‘ina‘au	Full	14	n/a	Above Hana Highway
Nua‘ailua	Connectivity	0.28	2.2	To be determined
Honomanu	H9o	4.2	4.2	Above Hana Highway
Punalau/Kolea	H9o	4.5	2.9	Above Hana Highway
Ha‘ipua‘ena	Connectivity	4.9	1.36	Below Hana Highway
Puohokamoa	Connectivity	8.4	1.1	Above Hana Highway
Wahinepe‘e	None	0.9	0.9	Above Hana Highway
Waikamoi	H9o	6.7	3.8	Above Hana Highway
Hanehoi	Full	2.54	n/a	Upstream of Lowrie Ditch
Huelo (Puolua)	Full	1.47	n/a	Downstream of Haiku Ditch
Honopou	Full	6.5	n/a	Below Hana Highway

Status: See response to #1 above.

15. Permittee shall cooperate with CWRM and the Department's Division of Aquatic Resources (DAR) in facilitating studies, site inspections and other actions as necessary to address the streams in the RP areas that are not covered by the 6/20/2018 CWRM D&O.

Status: EMI is in contact with CWRM personnel regarding site visits to evaluate diversions that weren't covered by the D&O. Such site visits have occurred in Q1 2022 and Q2 2022. CWRM field staff conducts these site visits on a stream-by-stream basis. EMI has previously contacted DAR and has expressed willingness to cooperate with any DAR activities related to the DAR work on streams outside the license area.

16. Permittee shall work with CWRM and DOFAW to determine whether there are alternatives to diversion removal that effectively prevent mosquito breeding and can be feasibly implemented. Permittee shall include the status of alternatives in its quarterly reports.

Status: EMI has worked with CWRM in the context of the earlier discussion with DOFAW regarding diversion structures that can impede free flow of water and create habitat for mosquito breeding. Considerable evaluation and analysis have been conducted by the

CWRM and EMI on nine "Category 1" diversions regarding additional work to be done on these diversions to mitigate these issues. CWRM will meet with stakeholders to discuss this mitigation plan and report back to EMI as to the additional diversion modification work to be undertaken.

17. If the Board finds that a use of water is not reasonable and beneficial and does not comply with the permitted uses, Permittee shall cease such use within a timeframe as determined by the Department of Land and Natural Resources (Department).

Status: EMI remains willing to comply with this requirement and stands ready to assist the Board in any way it can regarding this matter.

18. For water used for agricultural crops , Permittee is to estimate how much water is required for each crop per acre per day.

Status: Water requirements for each crop is highly dependent on several factors, including soil composition, weather, and the maturity of the crop itself. That said, the average water requirements for Mahi Pono's agricultural crops at full maturity are estimated to be as follows:

- Orchard Crops - 5,089 gallons per acre per day
- Row Crops - 3,392 gallons per acre per day
- Tropical Fruits - 4,999 gallons per acre per day
- Energy Crops - 3,392 gallons per acre per day

These estimates are consistent with the estimated water requirements contained in Table 3 of Appendix I (Agricultural and related Economic Impacts) of the EIS.

19. Permittee shall submit to the Department a plan for their proposed upgrades, including an implementation timeline, to the irrigation system intended to address CWRM' s concerns no later than December 1, 2022. Permittee is to work with the Maui Fire Department to determine what their exact needs are.

Status: The Mahi Pono System Efficiency Upgrades Report was submitted to the BLNR on November 30, 2022.

An updated response to the Permittees' request for information regarding the department's requirements is attached as Exhibit E. Permittees will continue to work with the Maui Fire Department and will report on any future developments that may allow for additional estimates to be shared.

20. ***Permittee shall pay the monthly rent amounts as determined by the Board; the 2021 monthly rent amounts shall be those recommended by Department staff in their written submittal to the Board regarding Item #D-8 on the Board's November 13, 2020 meeting agenda.***

    Status: EMI has remained current in its payment of rent to the State for the subject revocable permits.

21. ***Permittee shall look into supplying the Maui Invasive Species Committee with water, and if feasible, and despite it not being an agricultural use, be considered a reasonable and beneficial and permitted use under the RP.***

    Status: EMI/Mahi Pono maintains ongoing discussions with MISC regarding their need for water to conduct invasive species removal. We continue to discuss additional options for this.

22. ***DOFAW shall discuss with Maui Fire Department and report to the Board at the next RP renewal whether ocean water can feasibly be substituted for some of the firefighting needs. Effects of applying ocean water shall also be considered.***

    This condition is not applicable to A&B/EMI. It has been included in this report for completeness.

23. ***At or before the next renewal of the RP's, or before a request for authorization to lease water rights at public auction, at a scheduled meeting of the Board, the Permittees shall cooperate with the Department's Land Division and DOFAW, who the Board directs to bring a proposed watershed management fee and/or requirements for the Permittees to implement management actions in the watershed.***

    Status: EMI will cooperate with the Department's Land Division and DOFAW on the development of their proposal related to watershed management. Although not part of Q4 activity, as information, the Permittees met with DOFAW on January 11, 2023, where

DOFAW presented its current draft a watershed management plan for East Maui and fee concepts. Discussions will continue.

EXHIBIT A – MONTHLY WATER USAGE

All Figures in Millions of Gallons per Day ("MGD")

Month	***East Maui Surface Water @ Honopou***	***East Maui Surface Water Gained from Area Between Honopou and Maliko***	***Groundwater Pumped on-Farm***	***County of Maui DWS***[1]	***County of Maui Ag Park***[2]	***Diversified Agriculture***[3]	***Historic / Industrial Uses***[4]	***Reservoir / Seepage / Fire Protection / Evaporation / Dust Control / Hydroelectric***[5]	
								Diverted Reserve to meet Contractual Obligation to County DWS & Ag Park[6]	***Other***[7]
October	19.14	4.79	3.95	2.23	0.59	18.48	0.05	4.68	1.91
November	26.48	0.99	2.73	1.49	0.51	20.36	0.05	5.50	2.30
December	23.27	0.00	0.87	1.26	0.65	11.29	0.03	5.59	5.32
Quarterly Average	**22.96**	**1.93**	**2.52**	**1.66**	**0.58**	**16.69**	**0.04**	**5.26**	**3.17**

1. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

2. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

3. Diversified Agriculture includes the users/uses described in Exhibit B.

4. Historical/Industrial Uses are non-HC&S uses that have historically relied on water from the EMI Ditch System, even after the closure of HC&S. These include uses by entities located either adjacent to or within the boundaries of the farm and are further described in Exhibit B. Historically, the use of water by these entities was not regularly metered, and a historical estimate of 1.1 MGD was developed and previously used as the amount of collective water consumption by these entities. Mahi Pono installed meters in March 2022 thus, starting with the Q2 2022 report, the figures reported in this column will reflect actual usage based on those meters. As previously mentioned, HC&D's water usage is no longer accounted for in this column as HC&D is obtaining water from its own well.

5. The numbers in these columns include water not separately accounted for in the columns to the left. The EMI system is operated in a manner that ensures continuous water availability in the reservoirs to meet the County of Maui's needs for fire protection for brush fires, the risk of which has increased due to the reduction of the irrigated acreage following the cessation of sugar cultivation but is decreasing as Mahi

Pono continues to implement its farm plan. Seepage and evaporation are also included in this column. The water used by the Mahi Pono hydroelectric system is non-consumptive and is returned to the ditch after being used to generate clean energy. The water is re-used consumptively by one of the other uses, or if there is no reuse, ends up in the reservoirs.

6. Operationally and pursuant to a contractual agreement with the County of Maui, a minimum of approximately 6 MGD must be reliably conveyed to / made available to the County each and every day so that the County has flexibility regarding when to run its plant depending on weather conditions, demand, water available from its Piiholo plant, etc. Additionally, a minimum of approximately 1.5 MGD must be reliably conveyed to / made available to the County each and every day so that the County can be flexible regarding how to meet the needs of the Ag Park. The numbers in this sub-column reflect the portion of the 7.5 MGD that is made available to the County every day, that the County does not use (i.e., 7.5mgd less the sum of the amounts used by the County DWS at Kamole Weir and Ag Park). Water that is not used by the County remains in the Ditch System and is directed to reservoirs located on the former plantation.

7. The numbers in these columns reflect the amount of water not separately accounted for in the columns entitled "County of Maui DWS," "County of Maui Ag Park," "Diversified Agriculture," and "Historic/Industrial Uses" less the reserve needed to meet EMI's contractual obligations to the County of Maui.

EXHIBIT B – WATER USAGE SPECIFICS

Diversified Agriculture Use

Entity	Crop	Field	Acreage
Mahi Pono	Citrus	300	305
Mahi Pono	Coffee	301	273
Mahi Pono	Citrus	303	161
Maui Best (Tenant)	Sweet Potato	408	281
Maui Best (Tenant)	Sweet Potato	409	180
Mahi Pono	Citrus	501	83
Mahi Pono	Citrus	502	290
Mahi Pono	Citrus	503	144
Mahi Pono	Citrus	504	294
Mahi Pono	Citrus	505	240
Mahi Pono	Citrus	507	189
Mahi Pono	Citrus	508	183
Mahi Pono	Citrus	508B	213
Mahi Pono	Citrus	509	79
Mahi Pono	Citrus	510	181
Mahi Pono	Citrus	511	161
Mahi Pono	Citrus	512	132
Mahi Pono	Citrus	602	196
Mahi Pono	Citrus	603	262
Mahi Pono	Citrus	604	343
Mahi Pono	Citrus	605	394
Mahi Pono	Citrus	606	134
Mahi Pono	Mixed	608	70
Mahi Pono	Citrus	610	40
Mahi Pono	Citrus	701	269
Mahi Pono	Citrus	702	232
Mahi Pono	Citrus	703	150
Mahi Pono	Citrus	704	214
Mahi Pono	Citrus	708	299
Mahi Pono	Citrus	800	100
Mahi Pono	Citrus	801	281
Mahi Pono	Citrus	803A	127
Mahi Pono	Pongamia	803B	32
Mahi Pono	Avocado	803C	6
Mahi Pono	Coffee	807	120
Mahi Pono	Mixed	807	39
Mahi Pono	Citrus	808	158
Mahi Pono	Citrus	809	251
Mahi Pono	Citrus	809X	72
Mahi Pono	Citrus	813	448
Mahi Pono	Citrus	814	342
Mahi Pono	Citrus	818	266
Mahi Pono	Citrus	911	82
TOTAL			***8316***

EXHIBIT B – WATER USAGE SPECIFICS (Continued)

Historic / Industrial Uses

Water Users	Source/Delivery Point	Water User's Location	Relationship to EMI / A&B / Mahi Pono	Use
Imua Energy Maui LLC, dba Maul EKO Systems LLC (Tenant of County Central Maui Landfill)	Pumped from Haiku Ditch	3-8-003-019	Gov't Tenant	General Use for Compost Operation
HC&S Mill Area Fire Suppression	702 Cistern	3-8-006-001 CPR #l	A&B - Owned	Fire suppression for ag offices & Puunene Post Offlce
New Leaf Ranch (Non-Profit)	702 Cistern	3-8-006-029	Tenant	Irrigation water for non-profit providing ag-related work opportunities and training as mental health & substance use dependency treatment
Costo Maddela	Haiku Ditch	3-8-001-001	Tenant	Pasture & Animal Water
Harriet, Michael & Jordan Santos	Kauhikoa Ditch	2-5-001-018 & 019	Tenant	Pasture & Animal Water
Leonard Pagan	Kauhikoa Ditch	2-5-002-001	Tenant	Pasture & Animal Water
Harry Cambra	Kauhikoa Ditch	2-5-003-026,027,036,037,038	Tenant	Pasture & Animal Water

EXHIBIT C – CWRM ORDER STATUS UPDATE

Section i, j, & k from CWRM D&O

i. It is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed.

j. This Order does not require that every diversion on every tributary be removed or modified, the Commission is only looking at modifications to main stem and major diversions to accomplish the amended IIFS set forth above. The Commission also recognizes that it is not the purpose of this proceeding to determine how the diversions will be modified. That issue will be before the Commission in a subsequent process.

k. The intent of the Commission is to allow for the continued use and viability of the EMI Ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS.

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EXHIBIT C – CWRM ORDER STATUS UPDATE (Continued)

IIFS STREAM UPDATE

Stream Name	Restoration Status	BFQ50 at IIFS (cfs)	IIFS Value (cfs)	IIFS Location	Current Status
Makapipi	Full	1.3	n/a	Above Hana Highway	Gate removed, water flowing downstream below intake
Hanawi	Connectivity	4.6	0.92	Below Hana Highway	Gate open, water flowing downstream below intake
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch	Main gate open, water flowing downstream below intake
Waiaaka	None	0.77	0.77	Above Hana Highway	Gate open, water flowing downstream below intake
Pa'akea	Connectivity	0.9	0.18	At Hana Highway	Intake gate closed, water flowing downstream over dam
Waiohue	Full	5	n/a	At Hana Highway	Intake gate closed, sluice gate removed. All water flowing downstream.
Pua'aka'a	Connectivity	1.1	0.2	Above Hana Highway	Gate open, water flowing downstream below intake
Kopiliula	H90	5	3.2	Below Hana Highway	Main gates open, ditch control gates closed. Water flowing downstream.
East Wailuaiki	H90	5.8	3.7	At Hana Highway	Gates open, water flowing downstream below intake
West Wailuaiki	Full	6	n/a	Above Hana Highway	Gates open, water flowing downstream below intake
Wailuanui	Full	6.1	n/a	At Hana Highway	All intakes sealed (Category 1) water flowing downstream below intake
Oh!a/Waianu	None	4.7	n/a	None	No diversion
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch	All intakes closed, water flowing downstream
Palauhulu	Full	11	n/a	Above Hana Highway	All water either passing intakes or flowing out of the Kano sluice gate. Water flowing downstream.
Pi'ina'au	Full	14	n/a	Above Hana Highway	Intake sealed, water flowing downstream.
Nua'ailua	Connectivity	0.28	2.2	To Be Determined	Intake gate closed, water flowing downstream over dam
Honomanu	H90	4.2	4.2	Above Hana Highway	All 4 diversion sluice gates are open, water flowing downstream
Punalau/Koiea	H90	4.5	2.9	Above Hana Highway	Sluice gate open, water flowing downstream below intake
Haipuaena	Connectivity	4.9	1.36	Below Hana Highway	Intake gate closed, water flowing downstream, dam will require modification
Puohokamoa	Connectivity	8.4	1.1	Below Hana Highway	Intake gate will be used to ensure water flowing downstream, intake dam will require significant modification
Wahinepee	None	0.9	0.9	Above Hana Highway	No diversion. Water flowing downstream.
Waikamoi	H90	6.7	3.8	Above Hana Highway	Center ditch sluice gate open. Water flowing downstream.
Hanehi'i	Full	2.54	n/a	Upstream of LowrieDitch	Intakes sealed. Water flowing downstream.
Iiuelo (Puolua)	Full	1.47	n/a	Downstream of Iaiku Ditch	Lowrie intake will require significant modifications & corresponding permit approvals / Iaiku intake sealed
Honopou	Full	6.5	n/a	Below Hana Highway	Three sluice gates open, one intake sealed. One of two Waiiole intakes sealed, water flowing downstream

EXHIBIT D – RESERVOIR INFORMATION

EXHIBIT D

Reservoir No.	Tax Map Key	Capacity Million Gallons	Surface area Acres	Fields Feed by Reservoir	Lined	Type Material	Evaporation Rate (Average Gal/Day)****
14	2-5-04:39	9.50	1.50	100; 101	No	Earthen	2,098
15	2-5-04:39	8.30	1.10	101	No	Earthen	0
20	2-5-03:10	43.80	10.20	312; 314	No	Earthen	0
21	2-5-04:39	18.60	6.90	111; 113; 200	No	Earthen	0
22	2-5-03:10	43.80	10.60	201; 202	No	Earthen	0
24	2-5-03:10	15.00	3.60	201	Yes	Concrete	0
25	2-5-03:09	40.20	9.70	205	No	Earthen	46,496
30	2-5-03:01	21.00	9.00	300; 312	No	Earthen	0
33	2-5-02:02	46.50	8.00	304; 304; 313	No	Earthen	40,534
40	2-5-02:01	62.80	13.50	410; 400; 401; 413 (County Use)	No	Earthen	35,240
42	2-5-02:01	10.40	3.20	400; 401; 403	No	Earthen	14,875
52	3-8-03:04	74.00	20.00	504; 511	No	Earthen	0
60	3-8-01:06	80.50	20.80	600; 611	No	Earthen	5,780
61	3-8-01:01	53.10	9.00	604	No	Earthen	43,624
70	3-8-01:01	19.30	5.00	Mud Pile 710	No	Earthen	0
80	3-8-03:02	41.10	12.00	800; 801	No	Earthen	0
81	3-8-04:22	36.70	13.80	803 805 808 809	No	Earthen	66,644
82	3-8-04:22	17.90	7.40	810; 811; (812; 815; 816; 818; 819; 822; 823; Res. Ditch)	No	Earthen	0
84	3-8-03:02	35.10	8.00	701; 702; 703; (807; 813; 814; Res. Ditch)	No	Earthen	2,630
90	3-8-08:05	45.00	15.80	737; 761; 915; 917	No	Earthen	92,669
Haiku	(2)2-7-003:055 & 031	57.9	27.30	Haiku Ditch	No	Earthen	0
Pauwela	(2)2-7-003:030 & 056/2-7-008:038	32.5	6.80	Haiku Ditch	No	Earthen	0
Peahi	(2)2-8-002:018	22	5.80	Haiku Ditch	No	Earthen	0
Kapalaalaea	(2)2-8-007:001	49.7	8.70	Haiku Ditch	No	Earthen	0
Papaaea	(2)2-9-014:004	42.5	9.00	Center Ditch to Lowrie Ditch	No	Earthen	0
9	2-5-004:039	1.00	NA	110	No	Earthen	Unregulated/Rarely Used
10	2-5-004:039	9.50	NA	116	No	Earthen	Unregulated/Rarely Used
12	2-5-004:039	9.00	6.70	109	No	Earthen	Unregulated/Rarely Used
23	2-5-005:019	13.70	NA	200	Yes*	Concrete/rubber	Unregulated/Rarely Used
26	2-5-005:019	10.10	NA	208	No	Earthen	Unregulated/Rarely Used
29	2-5-005:019	9.90	NA	213	No	Earthen	Unregulated/Rarely Used
31	2-5-003:031	8.10	NA	303	No	Earthen	Unregulated/Rarely Used
32	2-5-002:002	9.80	NA	304	No	Earthen	Unregulated/Rarely Used
34	2-5-003:010	8.10	NA	306	No	Earthen	Unregulated/Rarely Used
35	2-5-002:002	15.00	5.40	310; 311; 505	No	Earthen	Unregulated/Used Sparingly
41	2-5-002:001	8.90	NA	402; 404	No	Earthen	Unregulated/Rarely Used
43	2-5-001:001	13.50	4.00	409; 404	No	Earthen	Unregulated/Rarely Used
44	2-5-001:008	3.60	NA	Above 417;	No	Earthen	Unregulated/Rarely Used
45	2-5-001:008	4.20	NA	415; 414; 418	Yes	Concrete	Unregulated/Rarely Used
50	3-8-003:005	8.40	NA	209; 500; 507; 508	No	Earthen	Unregulated/Used Sparingly
51	3-8-003:004	15.20	NA	502; 505	No	Earthen	Unregulated/Rarely Used
83	3-8-004:002	6.40	4.70	817; 821	No	Earthen	Unregulated/Rarely Used

Not all reservoirs are currently in use.
*Reservoir 23 was lined with concrete/rubber. Lining is currently deteriorated.
**Kaupakalua decommissioned in 2021/2022.
***Kapalaalaea decommissioning project begins in 2023.
****Evaporation rate is the average gallons per day evaporation for the quarter

Unregulated/Used Sparingly = In and out water ~1 day
Unregulated/Rarely Used = Passthrough only

EXHIBIT E – MAUI FIRE DEPARTMENT RESPONSE

MICHAEL P. VICTORINO
Mayor
BRADFORD K. VENTURA
Fire Chief
GAVIN L.M. FUJIOKA
Deputy Fire Chief

DEPARTMENT OF FIRE & PUBLIC SAFETY
COUNTY OF MAUI
200 DAIRY ROAD
KAHULUI, HI 96732

October 11, 2022

Ms. Suzanne D. Case
State of Hawai'i
Department of Land and Natural Resources
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Subject: **Estimate for Water Requirement for Fire Response by the County of Maui, Department of Fire and Public Safety**

Dear Ms. Case,

This letter is in response to a request to provide information regarding the estimate for water to be used in response to a brush fire arising in the central valley of Maui. Whether or not fire exists on public or private lands, it is our mission to protect life and property.

As you may know, Mahi Pono's farm is a vital source of water in the majority of the areas in and around Central Maui. From filling our tankers and mobile bladders to Air One dipping water from surrounding reservoirs, the water from the Mahi Pono farm is a critical part of our ability to execute our emergency plans in the event of a brush fire.

An estimate of our water usage during an emergency response depends on several different things, including – but not limited to – the size and location of the fire, the fuel load, proximity to other non-farm sources, weather conditions (wind speed and direction), and the time of day (helicopters do not assist in darkness for safety reasons). Most importantly, water usage is affected by the proximity of the fire relative to residences, property, and human life, which in an emergency situation, must be considered the highest priority. Given all of the above-mentioned variables, it would be exceedingly difficult to accurately estimate the amount of water necessary to bring the fire under control.

EXHIBIT E – MAUI FIRE DEPARTMENT RESPONSE (cont.)

A letter was submitted on June 22, 2021, detailing the amount of water that could be used by each fire apparatus on a per hour basis in response to a wildland fire, however, the total amount of hours of use for each apparatus is directly related to the many factors mentioned above.

A copy of the June 22, 2021, letter is attached for your reference.

Sincerely,

HENRY LINDO, Jr.
Assistant Chief of Operations

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 791628, PAIA, MAUI, HAWAI'I 96779-1628 • (808) 579-9516

BLNR CONDITIONS FOR HOLDOVER OF EAST MAUI WATER PERMITS
STATUS OF COMPLIANCE AS OF ~~SEPTEMBER 30~~DECEMBER 31, 2022

CONDITIONS PER THE FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION & ORDER

1. ***Require the revocable permits at issue- S-7263 (Honomanu), S-7264 (Huelo), S-7265 (Ke'anae) , and S-7266 (Nahiku) (collectively, the "RPs") to incorporate the Commission on Water Resource Management's ("CWRM") June 20, 2018 Findings of Fact , Conclusions of Law, and Decision & Order ("6/20/2018 CWRM D&O"). Diversion of surface water from the streams listed in the 6/20/2018 CWRM D&O shall be in accordance therewith, and so shall the timing for cessation of diversions, as necessary.***

   Status: The need for water from the East Maui streams averaged approximately ~~14.84~~22.96 million gallons per day (MGD) during the ~~third~~fourth quarter of 2022. This amount continues to be well within the bounds of the 2018 IIFS decision concerning total quantity and the use of specific streams. It is also significantly less than the ~~(a) 45 MGD allocation set by the BLNR at its~~ 45 MGD allocation set by the BLNR in its Findings of Fact, Conclusions of Law, and Decision & Order entered June 30, 2022 in DLNR File No. CCH-LD-21-01~~November 13, 2020 meeting; (b) the 25 MGD (averaged monthly) diversion limitation from the East Maui streams (as measured at Honopou Stream) as set forth in the Findings of Fact, Conclusions of Law and Order entered on August 23, 2021, in Civil No. 20-0001541 (Sierra Club v. Board of Land and Natural Resources, et al.) ("Sierra Club Agency Appeal"); and (c) the 20 MGD (averaged monthly) diversion limitation as set forth in the Order Granting in Part Appellees Board of Land and Natural Resources, Alexander & Baldwin, Inc., East Maui Irrigation Company LLC and Intervenor County of Maui's Joint Motion for Supplemental Order Regarding Revocable Permits Filed April 19, 2022, entered May 2, 2022 in the Sierra Club Agency Appeal~~.

   The water that was diverted in ~~Q3~~Q4 2022 continued to supply the County of Maui for its Upcountry Maui water system, the Kula Ag Park, as well as fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands ? now owned and managed by Mahi Pono.

   There was a significant amount of rainfall in the month of December, which caused water to sheet flow directly into the ditch itself, inflows that are unpredictable and not controllable, rather than exclusively entering the system via the stream diversions.

Mahi Pono continues the expansion of its agricultural operations, which will result in a corresponding increase in the need for water from East Maui. Mahi Pono completed a total of ~~543~~1,880 acres of plantings in the ~~third~~fourth quarter of 2022 to bring the total planted acreage for Mahi Pono's **East Maui fields** to ~~6,436~~8,316 acres. ~~Mahi Pono's operational focus will continue to be on planting activities through the upcoming months of the 2022 calendar year.~~ The Permittees – and by extension, Mahi Pono – remain committed to the efficient use of East Maui stream water. Mahi Pono's total amount of water usage, together with that of the County of Maui, will not exceed the limits of the IIFS decision at any point during its expansion.

All initial approvals have been received from the CWRM to abandon the diversions on the "taro streams" to fully restore their streamflow. EMI received Department of Health approval of the Best Management Practices Plan for the Category 2 diversions. Construction on fourteen of the intakes has been completed, with ongoing work taking place on the final remaining intake. ~~We have submitted a final plan to CWRM for the modifications to Category 1 closures intended to restore the streams to as natural a condition as possible.~~ We anticipate completing the remaining work on the final intake by April 30, 2023, subject to EMI being able to secure the requisite materials and helicopter delivery during the upcoming quarter.
~~CWRM is in the process of reviewing the plan and discussing its implementation with East Maui community groups.~~

The Permittees have also initiated discussions with CWRM staff on IIFS compliance for the 'non-taro streams.' A draft work plan was submitted to CWRM for 41 diversions on 17 additional streams that are implicated by the 2018 IIFS decision. Before issuing the needed permits to undertake the work, CWRM will need to conduct site visits to each diversion site. In the meantime, the Permittees comply with the IIFS decision regarding instream flow requirements (i.e., by individual streams and the total quantity of flow). This compliance is subject to CWRM staff verification. Connectivity requirements of the IIFS decision are being met to the extent possible without the physical modifications that require governmental reviews and approvals. The draft work plan transmitted by the Permittees to the CWRM does address means of achieving full connectivity compliance for these additional non-taro streams.

In summary, the Permittees' diversion of water under the subject 2021 RPs continues to comply with the CWRM's June 20, 2018, IIFS order concerning flow volumes, by individual streams, compliance with connectivity requirements has been met to the extent legally possible without further governmental review and approvals. Significant

progress has been made on pursuing the modifications and abandonment of diversions on the seven 'taro streams,' an established and continued priority for both the permittees and the State.

2. ***There shall be no waste of water. System losses and evaporation shall not be considered as a waste of water.***

   Status: See uses outlined in response to #1 above. All diverted water is being put to beneficial agriculture use or municipal use, as the diverted water supplies the County of Maui for its Upcountry Maui water systems, the Kula Ag Park, Central Maui fire suppression needs, municipal users who do not currently have access to the County DWS delivery system, and agricultural uses in Central Maui on lands now owned and managed by Mahi Pono. Exhibit A notes system losses and evaporation as water uses.

3. ***Any amount of water diverted under the RPs shall be for reasonable and beneficial use and always in compliance with the interim instream flow standards (IIFS).***

   Status: See responses to #1 and #2 above. In the fourth quarter, CWRM made additional amendments to IIFS for certain streams in the Huelo license area. There are ongoing proceedings before CWRM to address diversion modifications necessary to effectuate the recent IIFS amendments. Permittees are participating in that ongoing proceeding and have met all applicable deadlines to-date.

4. ***Permittee shall provide a report on the progress regarding the removal of diversions and fixing of the pipe issues before the end of the RP term.***

   Status: This permit condition was initially imposed in 2018, and we believe it relates to a pipe at Pualoa (aka Puolua) Stream at the Lowrie Ditch. In a previous status report, we reported that the pipe had been extended to provide wetted pathways for the movement of stream biota on Pualoa Stream. At the 2018 BLNR hearing on the subject RP's (for 2019), statements were made that the pipe needs to be extended further to go under the road and that two 4" rusted pipes needed to be removed. Accordingly (and as reported in previous quarterly reports), the two 4" pipes have since been removed from the watershed and a new design intended to improve fish migration has been incorporated in the diversion modification plan for compliance with the IIFS and approved by the CWRM in its approval of the Category 3 SWUP's. This specific scope of work was part of the overall work plan referenced earlier.

Road maintenance and repair activities continue in order to better facilitate access to several of the more remote intakes that are subject to Category 2 permits. We have submitted a final plan to CWRM for additional modifications to Category 1 diversions, some of which addresses the removal of diversions which would not impact the structural or operational integrity of the EMI system. CWRM is in the process of reviewing the plan and discussing its implementation with East Maui community groups.

5. ***Permittee shall cleanup trash and debris from revocable permit areas starting with areas that are accessible and close to streams; "trash and debris" shall be defined as " any loose or dislodged diversion material such as concrete, rebar, steel grating, corrugated metals, railroad tires, etc., that can be removed by hand (or by light equipment that can access the stream as is~~.~~)".***

Status: The Permittees have established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous fieldwork. In the ~~third~~fourth quarter of 2022, EMI continued to be vigilant about monitoring and removing unused material. In Q4 2022, EMI found additional debris while performing work in remote locations along the EMI system. The debris was consolidated into a single location and will be removed ~~a number of pipes from the areas covered by the RPs which is pictured below.~~via helicopter in Q1 or Q2 2023.

~~*Trash removed from the Kikokiko Makanali, and Kaaiea areas during Q3 2022*~~

EMI will also continue removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed, which includes diversion modifications required to meet the 2018 IIFS.

EMI understands the term "Trash and Debris" is further defined as noted in the DLNR staff submittal. As mentioned previously, EMI has established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous field work. EMI also has a practice of removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed. These practices continue to apply to the "Trash and Debris" term as more clearly defined by DLNR staff.

6. ***The RPs shall be subject to any existing or future reservations of water for the Department of Hawaiian Home Lands (DHHL);***

   Status: EMI acknowledges that the RPs shall be subject to any existing or future reservation of water for the DHHL.

7. ***Coordinate with an interim committee to discuss water usage issues in the RP areas. The committee shall consist of seven members, representing EMI/Mahi Pono, Farm Bureau, Office of Hawaiian Affairs, the Native Hawaiian Legal Corporation, the Huelo Community Association, the Sierra Club, and the County of Maui. The interim committee shall meet at least quarterly, more often as useful.***

   Status: The ~~Sierra Club has chosen Lucienne de Naie as its committee representative, starting with the Q2 2022 recap~~quarterly meeting ~~held on Wednesday, July 20, 2022. In Q3, 2022, Huelo Community representative Ramana Sawyer, asked to step down from the~~ of the RP Committee~~, and suggested that Lafayette Young be named as his replacement, starting with the meeting held on Wednesday,~~ was held on Friday, January 27, 2023. ~~October 20, 2022. Over the course of his career, Lafayette has served the University of Hawaii system as an administrator and tenured professor, and currently owns and operates a small business focused on water catchment systems. Lafayette also serves on the Board of Directors for the Haiku Community Association and the Honopou Road Association.~~

Jayson Watts (Mahi Pono / EMI) sent an invitation via email ~~for the~~ to ~~October 20th meeting to~~ the group on ~~Monday, October 10, 2022.~~Tuesday, January 24, 2023. The meeting was attended by Deputy Director ~~Helene Kau~~James Landgraf (County of Maui DWS), Lafayette Young (Huelo Community), Ashley Obrey (NHLC / Na Moku), ~~Warren Watanabe (Maui Farm Bureau~~Capsun Poe (OHA), Jayson Watts (Mahi Pono / EMI), Mark Vaught (EMI), and Grant Nakama (Mahi Pono / EMI). ~~OHA and the Sierra Club did not send a representative to the meeting, and the group did not receive a notice of planned non-attendance from either party~~A representative from the Sierra Club was unable to attend.

EMI provided an update on the work related to the implementation of the IIFS, and Mahi Pono supplied an update on farming operations. The information provided by Mahi Pono and EMI to the committee generally mirrored the farming and IIFS updates that are included as exhibits to this quarterly report. ~~Most questions from the committee were focused on the availability of water on farm for both Mahi Pono and its tenants, given recent drought conditions. Answers to these questions were provided by Grant Nakama and Mark Vaught.~~ The meeting adjourned approximately 30 minutes after it started. ~~The committee's next meeting is tentatively set for January 20, 2023.~~

8. ***Permittee shall therefore provide quarterly written reports to the Board of Land and Natural Resources (Board) containing (at a minimum) the following information:***

    a. *The amount of water used on a monthly basis, including the monthly amount of water delivered for: the County of Maui Department of Water Supply and the County of Maui Kula Agricultural Park; diversified agriculture; industrial and non-agricultural uses; and reservoir/fire protection/hydroelectric uses. Descriptions of diversified agricultural uses shall also provide information as to location, crop, and use of the water. Industrial and non-agricultural uses shall specify the character and purpose of water use and the user of the water;*

        Status: The amount of water used on a monthly basis, including the monthly amount of water delivered for the County of Maui DWS and Kula Ag Park, diversified agriculture, industrial and non-agricultural uses, and reservoir/fire protection/hydroelectric uses can be found in the table attached as Exhibit A. The existence of and continued use of reservoirs is extremely important for fire safety reasons. They are a major source of water for fighting fires on Maui, which occur during

the dry months of the year. The location, crop, and users of agricultural water, and the specifics on industrial and non-agricultural uses can be found in the table attached as Exhibit B.

As Mahi Pono prepares new fields for planting, they continue to install new irrigation systems that focus on efficient water application measures. In addition to these new systems, we are also installing weed mat throughout the farm, which help the soil maintain moisture by reducing evaporation. The cumulative water efficiency effects of these initiatives can be seen in the reduced amount of water remaining in the final column of the table attached as Exhibit A.

b. *An estimate of the system loss for both the EMI ditch system and the A&B field system, also on a monthly basis.*

Status: The accepted Final Environmental Impact Statement which considers East Maui water diversions facilitated by a long-term lease contains estimates for system losses for both the EMI ditch system as well as the "*A&B field system"*.

- EMI Ditch System – As stated in the FEIS, a USGS study "concluded that it was unclear whether net seepage losses even occur in the EMI Aqueduct system, due to the large amount of tunnel in the system, as well as the seepage gains that enter the system."

- A&B Field System – An estimate of the ~~upper limit of the~~ system losses by month is as shown in the table below:

Month	EMI Ditch System (in MGD)	Field System ~~(upper limit)~~ (in MGD)
October~~July~~	0	1.91~~7.54~~
November~~August~~	0	~~6.86~~2.30
~~September~~December	0	~~4.51~~5.32
Average	0	~~6.30~~3.17

As noted by Condition #2 above, system losses and evaporation shall not be considered as a waste of water.

c. *For each stream that is subject to the 6/20/2018 CWRM D&O, a status update as to the degree to which the flow of each stream has been restored, and which artificial structures have been modified or removed as required by CWRM.*

Status: EMI prioritizes its compliance with the CWRM order and has been working with CWRM staff on implementation plans and permitting. EMI notes that the language of the CWRM order relating to the removal of artificial structures is spelled out on page 269 of the D&O, items i, j, and k which State in part that *"it is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed."* and "The intent of the Commission is to allow for the continued use and viability of the EMI ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS. A status update is provided in the table attached as Exhibit C. Also included in Exhibit C is a copy of the section of the CWRM order relating to the removal of artificial structures.

d. *Update on removal of trash, unused man-made structures, equipment, and debris that serve no useful purpose, including documenting any reports of such items that Permittee has received from the Department, other public or private entities and members of the general public and the action(s) taken by Permittee, if any, to remove the reported items*

Status: See above response to #5 above.

e. *The method and timeline for discontinuing the diversion of water from Waipio and Hanehoi streams into the Ho'olawa stream, including status updates on implementation.*

Status: As the stream levels fluctuate during inclement weather, EMI personnel are dispatched to manually control the intake gates to prevent excess stream water inflow to the ditch. As for Haneho'i, all intakes have been sealed (per the 2018 D&O); therefore, no water enters the ditch from this stream. Regarding the Waipi'o stream, EMI personnel manually control the intakes on the ditch to prevent excess flow from entering the ditch. Thus, all flows to the ditch are delivered

to and used by Mahi Pono and the County of Maui. The flows are no longer controlled into Hoolawa stream.

f. *A listing of all reservoirs in the A&B/EMI water system serviced by the RPs, with the following information provided for each:*

The capacity of each such reservoir;

The surface area of each such reservoir ;

What fields are irrigated by each such reservoir, or in the alternative, which reservoirs service the County of Maui's domestic needs, Kula Agricultural Park farmers, and DHHL lands;

Which reservoirs are lined, and with what material , and which are not;

The estimated amount of evaporation per day from the surface of each such reservoir;

An analysis of the cost and time to line at least one such reservoir; and

Information on any reservoirs planned to be taken out of service.

Status: A table containing most of the information requested above is attached as Exhibit D. Evaporation estimates are rough estimates based on a number of assumptions (e.g., slope, shape of the reservoir) and actual reservoir water levels during ~~Q3~~Q4 2022, with the figures being displayed in average gallons per day.

In addition to the information in Exhibit D, we have also determined an estimated unit cost of $7.00 per square foot (sloped) to line a reservoir, plus estimated engineering costs typically being between $30k - $60k per reservoir. If we apply these costs to a reservoir with a 10-acre surface area and assumed slope adjustment of 25%, then the resulting estimate would be approximately $3.85M.

g. *The number, location, timing, and approximate acreage of fires fought during the quarter using water from reservoirs supplied with water from the A&B/EMI system.*

Status: There were no fires reported during the ~~third~~fourth quarter of 2022.

h. *The names and locations of the reservoirs from which water was drawn to fight fires during the quarter, together with:*

(i) Whether those reservoirs are lined or not;

(ii) The average depth of water in those reservoirs;

(iii) Estimated average monthly inflows and outflows from those reservoirs; and

(iv) The amount of water used for hydroelectric purposes, if any.

Status: There were no fires reported during the ~~third~~fourth quarter of 2022. Permittees will work diligently to record the requested data in the event of future fires.

~~No significant amount of water was used for hydroelectric purposes in this quarter.~~

i. *A listing of all irrigation wells in the A&B/EMI water system serviced by the RPs, with the water levels and chloride levels in each well that is in active use noted.*

Status: In the fourth quarter of 2022, Wells 12, and 13 were in active use. Chloride levels measured during the quarter are provided below:

- *Well #12*
  - *pH – 7.5 (12A) and 7.3 (12B)*
  - *Sodium – 300 mg/L (12A) and 300 mg/L (12B)*

- *Well #13*

- *pH – 7.7 (13A) and 7.6 (13B)*
- *Sodium – 280 mg/L (13A) and 290 mg/L (13B)*

During the quarter, EMI finished installing additional equipment to measure water levels more accurately within the Mahi Pono wells. This was done at a cost of approximately $10k per well. The water levels measured during the quarter are provided below:

- *Well #12 – 24 Inches*

- *Well #13 – 30.25 Inches*

Each quarterly report shall be submitted in a format with tracked changes that clearly show the differences/updates from the prior quarter.

Such quarterly reports shall be "due" to the DLNR one month after the last calendar day of the subject quarter. Thus, the reports shall come due as follows:

Q1 Report – April 30, 2022
Q2 Report – July 31, 2022
Q3 Report – October 31, 2022
Q4 Report – January 30, 2023
. . . and so on;

~~Status: In the third quarter of 2022, Wells 2, 12, and 13 were in active use. Chloride levels were measured at Wells 12 and 13, and are provided below:~~

This Q4 2022 report is the second

~~- *Well #12*~~
  - ~~*pH – 7.3 (12A) and 7.7 (12B)*~~
  - ~~*Sodium – 167 mg/L (12A) and 178 mg/L (12B)*~~

~~- *Well #13*~~
  - ~~*pH – 7.7 (13A) and 7.6 (13B)*~~
  ~~*Sodium – 159 mg/L (13A) and 151 mg/L (13B)*~~

~~Chloride levels were not measured for Well #2 during Q3 2022. Measurements will be taken for all used wells going forward.~~

~~EMI is in the process of installing additional equipment to more accurately measure water levels within the Mahi Pono wells. This is being done at a cost of approximately $10k per well. That installation process should be completed during Q4, and EMI anticipates including water level measurements in the Q4 report due on January 31, 2023.~~

~~This Q3 2022 report is the first~~ version to implement a track-change format vs. the prior quarter. The deadline to submit quarterly reports is noted, and EMI is committed to timely submittals of all future reports.

9. ***The Permittee may not divert an amount of water exceeding an average of 45 million gallons per day (mgd), averaged monthly, for all permits combined, further subject to all water diverted shall be for reasonable and beneficial uses.***

Status: The ~~third~~fourth quarter's need for water from the East Maui streams has averaged approximately ~~14.84~~22.96 million gallons per day (MGD). Only that amount of water is being diverted from the East Maui watershed. This amount complies with the limit of an average of 45 MGD set by the BLNR and continues to be well within the bounds of ~~(a) 45 MGD allocation set by the BLNR at its November 13, 2020 meeting; (b) the 25 MGD (averaged monthly) diversion limitation from the East Maui streams (as measured at Honopou Stream) as set forth in the Findings of Fact, Conclusions of Law and Order entered on August 23, 2021, in Civil No. 20-0001541 (Sierra Club v. Board of Land and Natural Resources, et al.) ("Sierra Club Agency Appeal"); and (c) the 20 MGD (averaged monthly) diversion limitation as set forth in the Order Granting in Part Appellees Board of Land and Natural Resources, Alexander & Baldwin, Inc., East Maui Irrigation Company LLC and Intervenor County of Maui's Joint Motion for Supplemental Order Regarding Revocable Permits Filed April 19, 2022, entered May 2, 2022 in the Sierra Club Agency Appeal.~~the 45 MGD allocation set by the BLNR in its June 30, 2022 Findings of Fact, Conclusions of Law, Decision & Order in DLNR File No. CCH-LD-21-01. This water is being used to supply the County of Maui for its Nahiku and Upcountry Maui water systems, the Kula Ag Park, fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands now owned and managed by Mahi Pono.

10. ***For RP S-7266, the area identified as the Hanawi Natural Area Reserve shall be removed from the revocable permit premises. Additionally, A&B/EMI shall continue discussions with the Department's Division of Forestry and Wildlife ("DOFAW") to identify additional forest reserve lands to be removed from the license areas.***

    Status: Meetings between EMI and DOFAW have been held and were focused on identifying those areas that are essential to EMI's ongoing operations, such as access routes and buffer areas around the EMI ditch system to ensure the reliable and safe operation of the system as well as the safety of EMI employees. The most recent of these meetings was held on Thursday, September 29, 2022, at DOFAW's Kahului offices. EMI has expressed to DOFAW a willingness to reduce the license/lease area as long as the permitted area (a) meets the collective needs of DLNR and DOFAW, (b) continues to allow EMI to operate its ditch system in a safe and efficient manner, and (c) does not affect the access to state water afforded by existing or future RPs and water license/lease(s). DOFAW and EMI will now focus on specifically locating suitable crossing points over the EMI system to State-owned lands located upslope. A site visit with DOFAW representatives to prospective crossing points ~~will be held in~~ was originally planned for Q4 2022~~.~~, but was postponed due to inclement weather. Discussions between EMI and DOFAW will continue in 2023 on the reduced lease/license area.

11. ***Mahi Pono is to advise any third-party lessee's, that any decisions they make is based on availability of water on a month-to-month basis renewed annually unless there is a permanent lease***

    Status: All third-party lessees have been informed through existing language in their lease agreements that the availability of water is subject to change based on various conditions, one of which would be the nature of the water availability from East Maui through an annually renewed revocable permit or an eventual permanent lease.

12. ***For the streams in the revocable permit area that have not had interim instream flow standards set, Permittee shall continue to clean up and remove debris from the permit areas and staff shall inspect and report every three months on the progress of the clean-up. For purposes of clean-up, debris shall not include any***

structure and equipment that is either currently used for the water diversions, or for which CWRM has not required removal.

Status: EMI has continued to remove debris and trash from stream areas. These efforts include locations surrounding the streams located outside of the IIFS area.

13. ***Permittee shall require its staff to inspect the streams and report on whether the lands could be developed for agricultural land or water leases.***

Status: EMI understands that, in general, State-owned land adjacent to streams in ~~east~~East Maui are conservation lands in forest reserves which may not be suitable for agricultural development. An agricultural assessment for the East Maui lands/watershed, including the state-owned lands, was included as part of the environmental impact statement ("FEIS") prepared by the Permittees for the proposed state water lease and accepted by the State. In addition, the FEIS contemplated the use of ~~these~~those lands as a collection area for a state water lease.

14. ***The RPs shall also comply with all conditions required by the 6/20/2018 CWRM D&O, which includes meeting the IIFS set forth in paragraph "h" of the "Decision and Order " section of the D&O. That paragraph provides a chart showing the name of the stream, the restoration status, the amended IIFS value, and an IIFS location, if applicable, for each stream, as follows:***

Stream Name	Restoration Status	BFQs at IIFS (cfs)	IIFS Value (cfs)	IIFS Location
Makapipi	Full	1.3	n/a	Above Hana Highway
Hanawi	Connectivity	4.6	0.92	Below Hana Highway
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch
Waiaaka	None	0.77	0.77	Above Hana Highway
Pa'akea	Connectivity	0.9	0.18	At Hana Highway
Waiohue	Full	5.0	n/a	At Hana Highway

Pua'aka'a	Connectivity	0.9	0.18	Above Hana Highway
Kopiliula	H90	5.0	3.2	Below Hana Highway
East Wailuaiki	H9o	5.8	3.7	At Hana Highway
West Wailuaiki	Full	6.0	n/a	Above Hana Highway
Wailuanui	Full	6.1	n/a	At Hana Highway
Ohia/Waianu	None	4.7	n/a	None.
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch
Palauhulu	Full	11	n/a	Above Hana Highway
Pi'ina'au	Full	14	n/a	Above Hana Highway
Nua'ailua	Connectivity	0.28	2.2	To be determined
Honomanu	H9o	4.2	4.2	Above Hana Highway
Punalau/Kolea	H9o	4.5	2.9	Above Hana Highway
Ha'ipua'ena	Connectivity	4.9	1.36	Below Hana Highway
Puohokamoa	Connectivity	8.4	1.1	Above Hana Highway
Wahinepe'e	None	0.9	0.9	Above Hana Highway
Waikamoi	H9o	6.7	3.8	Above Hana Highway
Hanehoi	Full	2.54	n/a	Upstream of Lowrie Ditch
Huelo (Puolua)	Full	1.47	n/a	Downstream of Haiku Ditch
Honopou	Full	6.5	n/a	Below Hana Highway

Status: See response to #1 above.

15. ***Permittee shall cooperate with CWRM and the Department's Division of Aquatic Resources (DAR) in facilitating studies, site inspections and other actions as necessary to address the streams in the RP areas that are not covered by the 6/20/2018 CWRM D&O.***

Status: EMI is in contact with CWRM personnel regarding site visits to evaluate diversions that weren't covered by the D&O. Such site visits have occurred in Q1 2022 and Q2 2022. CWRM field staff conducts these site visits on a stream-by-stream basis.

EMI has previously contacted DAR~~,~~ and has expressed willingness to cooperate with any DAR activities related to the DAR work on streams outside the license area.

16. ***Permittee shall work with CWRM and DOFAW to determine whether there are alternatives to diversion removal that effectively prevent mosquito breeding and can be feasibly implemented. Permittee shall include the status of alternatives in its quarterly reports.***

Status: EMI has worked with CWRM in the context of the earlier discussion with DOFAW regarding diversion structures that can impede free flow of water and create habitat for mosquito breeding. Considerable evaluation and analysis ~~has~~have been conducted by the CWRM and EMI on nine "Category 1" diversions regarding additional work to be done on these diversions to mitigate these issues. CWRM will meet with stakeholders to discuss this mitigation plan and report back to EMI as to the additional diversion modification work to be undertaken.

17. ***If the Board finds that a use of water is not reasonable and beneficial and does not comply with the permitted uses, Permittee shall cease such use within a timeframe as determined by the Department of Land and Natural Resources (Department).***

Status: EMI remains willing to comply with this requirement and stands ready to assist the Board in any way it can regarding this matter.

18. ***For water used for agricultural crops , Permittee is to estimate how much water is required for each crop per acre per day.***

Status: Water requirements for each crop is highly dependent on several factors, including soil composition, weather, and the maturity of the crop itself. That said, the average water requirements for Mahi Pono's agricultural crops at full maturity are estimated to be as follows:

- Orchard Crops - 5,089 gallons per acre per day
- Row Crops - 3,392 gallons per acre per day
- Tropical Fruits - 4,999 gallons per acre per day
- Energy Crops - 3,392 gallons per acre per day

These estimates are consistent with the estimated water requirements contained in Table 3 of Appendix I (Agricultural and related Economic Impacts) of the EIS.

19. Permittee shall submit to the Department a plan for their proposed upgrades, including an implementation timeline, to the irrigation system intended to address CWRM' s concerns no later than December 1, 2022. Permittee is to work with the Maui Fire Department to determine what their exact needs are.

Status: The Mahi Pono ~~Water~~System Efficiency ~~Upgrade Summary~~Upgrades Report was ~~previously~~ submitted~~. The June~~ to the BLNR on November 30, 2022~~ D&O indicates that the BLNR may desire additional and/or more specific information. Permittees will work with BLNR staff to provide a supplemental report no later than December 1, 2022~~.

An updated response to the Permittees' request for information regarding the department's requirements is attached as Exhibit E. Permittees will continue to work with the Maui Fire Department and will report on any future developments that may allow for additional estimates to be shared.

20. Permittee shall pay the monthly rent amounts as determined by the Board; the 2021 monthly rent amounts shall be those recommended by Department staff in their written submittal to the Board regarding Item #D-8 on the Board's November 13, 2020 meeting agenda.

Status: EMI has remained current in its payment of rent to the State for the subject revocable permits.

21. Permittee shall look into supplying the Maui Invasive Species Committee with water, and if feasible, and despite it not being an agricultural use, be considered a reasonable and beneficial and permitted use under the RP.

Status: EMI/Mahi Pono maintains ongoing discussions with MISC regarding their need for water to conduct invasive species removal. We continue to discuss additional options for this.

22. DOFAW shall discuss with Maui Fire Department and report to the Board at the next RP renewal whether ocean water can feasibly be substituted for some of the firefighting needs. Effects of applying ocean water shall also be considered.

This condition is not applicable to A&B/EMI. It has been included in this report for completeness.

23. At or before the next renewal of the RP's, or before a request for authorization to lease water rights at public auction, at a scheduled meeting of the Board, the Permittees shall cooperate with the Department's Land Division and DOFAW, who the Board directs to bring a proposed watershed management fee and/or requirements for the Permittees to implement management actions in the watershed.

Status: EMI will cooperate with the Department's Land Division and DOFAW on the development of their proposal related to watershed management. Although not part of Q4 activity, as information, the Permittees met with DOFAW on January 11, 2023, where DOFAW presented its current draft a watershed management plan for East Maui and fee concepts. Discussions will continue.

EXHIBIT A – MONTHLY WATER USAGE

All Figures in Millions of Gallons per Day ("MGD")

Month	***East Maui Surface Water @ Honopou***	***East Maui Surface Water Gained from Area Between Honopou and Maliko***	***Groundwater Pumped on-Farm***	***County of Maui DWS***[1]	***County of Maui Ag Park***[2]	***Diversified Agriculture***[3]	***Historic / Industrial Uses***[4]	***Reservoir / Seepage / Fire Protection / Evaporation / Dust Control / Hydroelectric***[5]	
								Diverted Reserve to meet Contractual Obligation to County DWS & Ag Park[6]	***Other***[7]
October~~July~~	~~16.601~~ 9.14	~~0.334~~.79	~~4.123~~.95	2.23 ~~1.91~~	0.~~585~~9	~~10.9618~~.48	0.~~06~~05	~~5.014~~.68	~~2.53~~ 1.91
~~August~~November	~~15.062~~ 6.48	0.~~38~~99	~~6.382~~.73	~~3.371~~.49	0.~~645~~1	~~10.8920~~.36	0.~~06~~05	~~3.495~~.50	~~3.37~~ 2.30
~~September~~December	~~12.852~~ 3.27	~~2.550~~.00	~~4.350~~.87	~~2.791~~.26	0.~~606~~5	11.~~82~~29	0.03	~~4.115~~.59	~~0.40~~ 5.32
Quarterly Average	**~~14.842~~ 2.96**	**1.~~08~~93**	**~~4.952~~.52**	**~~2.69~~ 1.66**	**0.~~61~~ 58**	**~~11.2216~~.69**	**0.~~0504~~**	**~~4.205~~.26**	**~~2.10~~ 3.17**

1. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

2. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

3. Diversified Agriculture includes the users/uses described in Exhibit B.

4. Historical/Industrial Uses are non-HC&S uses that have historically relied on water from the EMI Ditch System, even after the closure of HC&S. These include uses by entities located either adjacent to or within the boundaries of the farm and are further described in Exhibit B. Historically, the use of water by these entities was not regularly metered, and a historical estimate of 1.1 MGD was developed and previously used as the amount of collective water consumption by these entities. Mahi Pono installed meters in March 2022 thus, starting with the Q2 2022 report, the figures reported in this column will reflect actual usage based on those meters. As previously mentioned, HC&D's water usage is no longer accounted for in this column as HC&D is obtaining water from its own well.

5. The numbers in these columns include water not separately accounted for in the columns to the left. The EMI system is operated in a manner that ensures continuous water availability in the reservoirs to meet the County of Maui's needs for fire protection for brush fires, the risk of which has increased due to the reduction of the irrigated acreage following the cessation of sugar cultivation but is decreasing as Mahi Pono continues to implement its farm plan. Seepage and evaporation are also included in this column.

The water used by the Mahi Pono hydroelectric system is non-consumptive and is returned to the ditch after being used to generate clean energy. The water is re-used consumptively by one of the other uses, or if there is no reuse, ends up in the reservoirs.

6. Operationally and pursuant to a contractual agreement with the County of Maui, a minimum of approximately 6 MGD must be reliably conveyed to / made available to the County each and every day so that the County has flexibility regarding when to run its plant depending on weather conditions, demand, water available from its Piiholo plant, etc. Additionally, a minimum of approximately 1.5 MGD must be reliably conveyed to / made available to the County each and every day so that the County can be flexible regarding how to meet the needs of the Ag Park. The numbers in this sub-column reflect the portion of the 7.5 MGD that is made available to the County every day, that the County does not use (i.e., 7.5mgd less the sum of the amounts used by the County DWS at Kamole Weir and Ag Park). Water that is not used by the County remains in the Ditch System and is directed to reservoirs located on the former plantation.

7. The numbers in these columns reflect the amount of water not separately accounted for in the columns entitled "County of Maui DWS," "County of Maui Ag Park," "Diversified Agriculture," and "Historic/Industrial Uses" less the reserve needed to meet EMI's contractual obligations to the County of Maui.

EXHIBIT B – WATER USAGE SPECIFICS

Diversified Agriculture ~~Users~~Use

Entity	Fields	Crop	Total Acreage Planted Overall
Mahi Pono	300A	Lemons	139
Mahi Pono	300B	Limes	166
Mahi Pono	301	Coffee	273
Mahi Pono	303	Mandarins	161
Maui Best (Tenant)	408	Sweet Potato	281
Maui Best (Tenant)	409	Sweet Potato	180
Mahi Pono	501	Limes	83
Mahi Pono	502	Limes	290
Mahi Pono	503	Limes	144
Mahi Pono	504	Limes	294
Mahi Pono	509	Limes	79
Mahi Pono	510	Limes	181
Mahi Pono	511	Limes	161
Mahi Pono	512	Limes	132
Mahi Pono	604	Limes	65
Mahi Pono	604	Oranges	190
Mahi Pono	604	Mandarins	25
Mahi Pono	604	Tangelos	63
Mahi Pono	605	Limes	394
~~Mahi Pono~~	~~606~~	~~Limes~~	~~134~~
Mahi Pono	608	Ulu	70
Mahi Pono	610	Limes	40
Mahi Pono	701	Lemons	61
Mahi Pono	701	Limes	193
Mahi Pono	702	Limes	212
Mahi Pono	703	Lemons	130
Mahi Pono	704	Lemons	214
Mahi Pono	801	Limes	241
Mahi Pono	801	Lemons	33
Mahi Pono	803A	Lemons	127
Mahi Pono	803B	Pongamia	32
Mahi Pono	803C	Avocado	6
Mahi Pono	807A	Coffee	120
Mahi Pono	807M	Mac Nuts	6
Mahi Pono	808	Lemons	158
Mahi Pono	809	Lemons	251
Mahi Pono	809X	Lemons	72
Mahi Pono	813	Limes	455
Mahi Pono	814	Lemons	314
Mahi Pono	818	Limes	266
TOTAL:	**TOTAL:**		**6,436**

Entity	Crop	Field	Acreage
Mahi Pono	Citrus	300	305
Mahi Pono	Coffee	301	273
Mahi Pono	Citrus	303	161
Maui Best (Tenant)	Sweet Potato	408	281
Maui Best (Tenant)	Sweet Potato	409	180
Mahi Pono	Citrus	501	83
Mahi Pono	Citrus	502	290
Mahi Pono	Citrus	503	144
Mahi Pono	Citrus	504	294
Mahi Pono	Citrus	505	240
Mahi Pono	Citrus	507	189
Mahi Pono	Citrus	508	183
Mahi Pono	Citrus	508B	213
Mahi Pono	Citrus	509	79
Mahi Pono	Citrus	510	181
Mahi Pono	Citrus	511	161
Mahi Pono	Citrus	512	132
Mahi Pono	Citrus	602	196
Mahi Pono	Citrus	603	262
Mahi Pono	Citrus	604	343
Mahi Pono	Citrus	605	394
Mahi Pono	Citrus	606	134
Mahi Pono	Mixed	608	70
Mahi Pono	Citrus	610	40
Mahi Pono	Citrus	701	269
Mahi Pono	Citrus	702	232
Mahi Pono	Citrus	703	150
Mahi Pono	Citrus	704	214
Mahi Pono	Citrus	708	299
Mahi Pono	Citrus	800	100
Mahi Pono	Citrus	801	281
Mahi Pono	Citrus	803A	127
Mahi Pono	Pongamia	803B	32
Mahi Pono	Avocado	803C	6
Mahi Pono	Coffee	807	120
Mahi Pono	Mixed	807	39
Mahi Pono	Citrus	808	158
Mahi Pono	Citrus	809	251
Mahi Pono	Citrus	809X	72
Mahi Pono	Citrus	813	448
Mahi Pono	Citrus	814	342
Mahi Pono	Citrus	818	266
Mahi Pono	Citrus	911	82
TOTAL			***8316***

EXHIBIT B – WATER USAGE SPECIFICS (Continued)
Historic / Industrial Uses

Water Users	Source/Delivery Point	Water User's Location	Relationship to EMI / A&B / Mahi Pono	Use
Imua Energy Maui LLC, dba Maul EKO Systems LLC (Tenant of County Central Maui Landfill)	Pumped from Haiku Ditch	3-8-003-019	Gov't Tenant	General Use for Compost Operation
HC&S Mill Area Fire Suppression	702 Cistern	3-8-006-001 CPR #l	A&B - Owned	Fire suppression for ag offices & Puunene Post Offlce
New Leaf Ranch (Non-Profit)	702 Cistern	3-8-006-029	Tenant	Irrigation water for non-profit providing ag-related work opportunities and training as mental health & substance use dependency treatment
Costo Maddela	Haiku Ditch	3-8-001-001	Tenant	Pasture & Animal Water
Harriet, Michael & Jordan Santos	Kauhikoa Ditch	2-5-001-018 & 019	Tenant	Pasture & Animal Water
Leonard Pagan	Kauhikoa Ditch	2-5-002-001	Tenant	Pasture & Animal Water
Harry Cambra	Kauhikoa Ditch	2-5-003-026,027,036,037,038	Tenant	Pasture & Animal Water

EXHIBIT C – CWRM ORDER STATUS UPDATE

Section i, j, & k from CWRM D&O

i. It is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed.

j. This Order does not require that every diversion on every tributary be removed or modified, the Commission is only looking at modifications to main stem and major diversions to accomplish the amended IIFS set forth above. The Commission also recognizes that it is not the purpose of this proceeding to determine how the diversions will be modified. That issue will be before the Commission in a subsequent process.

k. The intent of the Commission is to allow for the continued use and viability of the EMI Ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS.

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EXHIBIT C – CWRM ORDER STATUS UPDATE (Continued)

IIFS STREAM UPDATE

Stream Name	Restoration Status	BFQ50 at IIFS (cfs)	IIFS Value (cfs)	IIFS Location	Current Status
Makapipi	Full	1.3	n/a	Above Hana Highway	Gate removed, water flowing downstream below intake
Hanawi	Connectivity	4.6	0.92	Below Hana Highway	Gate open, water flowing downstream below intake
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch	Main gate open, water flowing downstream below intake
Waiaaka	None	0.77	0.77	Above Hana Highway	Gate open, water flowing downstream below intake
Pa'akea	Connectivity	0.9	0.18	At Hana Highway	Intake gate closed, water flowing downstream over dam
Waiohue	Full	5	n/a	At Hana Highway	Intake gate closed, sluice gate removed. All water flowing downstream.
Pua'aka'a	Connectivity	1.1	0.2	Above Hana Highway	Gate open, water flowing downstream below intake
Kopiliula	H90	5	3.2	Below Hana Highway	Main gates open, ditch control gates closed. Water flowing downstream.
East Wailuaiki	H90	5.8	3.7	At Hana Highway	Gates open, water flowing downstream below intake
West Wailuaiki	Full	6	n/a	Above Hana Highway	Gates open, water flowing downstream below intake
Wailuanui	Full	6.1	n/a	At Hana Highway	All intakes sealed (Category 1) water flowing downstream below intake
Oh!a/Waianu	None	4.7	n/a	None	No diversion
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch	All intakes closed, water flowing downstream
Palauhulu	Full	11	n/a	Above Hana Highway	All water either passing intakes or flowing out of the Kano sluice gate. Water flowing downstream.
Pi'ina'au	Full	14	n/a	Above Hana Highway	Intake sealed, water flowing downstream.
Nua'ailua	Connectivity	0.28	2.2	To Be Determined	Intake gate closed, water flowing downstream over dam
Honomanu	H90	4.2	4.2	Above Hana Highway	All 4 diversion sluice gates are open, water flowing downstream
Punalau/Koiea	H90	4.5	2.9	Above Hana Highway	Sluice gate open, water flowing downstream below intake
Haipuaena	Connectivity	4.9	1.36	Below Hana Highway	Intake gate closed, water flowing downstream, dam will require modification
Puohokamoa	Connectivity	8.4	1.1	Below Hana Highway	Intake gate will be used to ensure water flowing downstream, intake dam will require significant modification
Wahinepee	None	0.9	0.9	Above Hana Highway	No diversion. Water flowing downstream.
Waikamoi	H90	6.7	3.8	Above Hana Highway	Center ditch sluice gate open. Water flowing downstream.
Hanehi'i	Full	2.54	n/a	Upstream of LowrieDitch	Intakes sealed. Water flowing downstream.
Iliuelo (Puolua)	Full	1.47	n/a	Downstream of Iaiku Ditch	Lowrie intake will require significant modifications & corresponding permit approvals / Iaiku intake sealed
Honopou	Full	6.5	n/a	Below Hana Highway	Three sluice gates open, one intake sealed. One of two Waiiole intakes sealed, water flowing downstream

EXHIBIT D – RESERVOIR INFORMATION

EXHIBIT D

Reservoir No.	Tax Map Key	Capacity Million Gallons	Surface area Acres	Fields Feed by Reservoir	Lined	Type Material	Evaporation Rate (Average Gal / Day)****
14	2-5-04:39	9.50	1.50	100; 101	No	Earthen	99
15	2-5-04:39	8.30	1.10	101	No	Earthen	0
20	2-5-03:10	48.80	10.20	312; 314	No	Earthen	377
21	2-5-04:39	18.60	6.90	111; 113; 200	No	Earthen	0
22	2-5-03:10	43.80	10.60	201; 202	No	Earthen	0
24	2-5-03:10	15.00	3.60	201	Yes	Concrete	0
25	2-5-03:09	40.20	9.70	205	No	Earthen	478
30	2-5-03:01	21.00	9.00	300; 312	No	Earthen	0
33	2-5-02:02	46.50	8.00	304; 304; 313	No	Earthen	460
40	2-5-02:01	62.80	13.50	410; 400; 401; 413 (County Use)	No	Earthen	0 (Recently acquired)
42	2-5-02:01	10.40	3.20	400; 401; 403	No	Earthen	215
52	3-8-03:04	74.00	20.00	504; 511	No	Earthen	0
60	3-8-01:06	80.50	20.80	600; 611	No	Earthen	0
61	3-8-01:01	53.10	9.00	604	No	Earthen	387
70	3-8-01:01	19.30	5.00	Mud Pile 710	No	Earthen	0
80	3-8-03:02	41.10	12.00	800; 801	No	Earthen	39
81	3-8-04:22	36.70	13.80	803 805; 808 809	No	Earthen	659
82	3-8-04:22	17.90	7.40	810; 811; (812; 815; 816; 817; 819; 822; 823; Res. Ditch)	No	Earthen	0
84	3-8-03:02	35.10	8.00	701; 702; 703; (807; 813; 814; Res. Ditch)	No	Earthen	0
90	3-8-08:05	45.00	15.80	737; 761; 915; 917	No	Earthen	778
Haiku	(2)2-7-003:055 & 081	57.9	27.30	Haiku Ditch	No	Earthen	0
Pauwela	(2)2-7-003:030 & 056/2-7-008:038	32.5	6.80	Haiku Ditch	No	Earthen	0
Peahi	(2)2-8-002:018	22	5.80	Haiku Ditch	No	Earthen	0
Kapalaalaea	(2)2-8-007:001	49.7	8.70	Haiku Ditch	No	Earthen	0
Papaaea	(2)2-9-014:004	42.5	9.00	Center Ditch to Lowrie Ditch	No	Earthen	0
9	2-5-004:039	1.00	NA	110	No	Earthen	Unregulated/Rarely Used
10	2-5-004:039	9.50	NA	116	No	Earthen	Unregulated/Rarely Used
12	2-5-004:039	9.00	6.70	109	No	Earthen	Unregulated/Rarely Used
23	2-5-005:019	13.70	NA	200	Yes*	Concrete/rubber	Unregulated/Rarely Used
26	2-5-005:019	10.10	NA	208	No	Earthen	Unregulated/Rarely Used
29	2-5-005:019	9.90	NA	213	No	Earthen	Unregulated/Rarely Used
31	2-5-003:031	5.10	NA	303	No	Earthen	Unregulated/Rarely Used
32	2-5-002:002	9.80	NA	304	No	Earthen	Unregulated/Rarely Used
34	2-5-003:010	8.10	NA	306	No	Earthen	Unregulated/Rarely Used
35	2-5-002:002	15.00	5.40	310; 311; 505	No	Earthen	Unregulated/Used Sparingly
41	2-5-002:001	8.90	NA	402; 404	No	Earthen	Unregulated/Rarely Used
43	2-5-001:001	13.50	4.00	409; 404	No	Earthen	Unregulated/Rarely Used
44	2-5-001:008	3.60	NA	Above 417;	No	Earthen	Unregulated/Rarely Used
45	2-5-001:008	4.20	NA	415; 414; 418	Yes	Concrete	Unregulated/Rarely Used
50	3-8-003:005	8.40	NA	209; 500; 507; 508	No	Earthen	Unregulated/Used Sparingly
51	3-8-003:004	15.20	NA	502; 505	No	Earthen	Unregulated/Rarely Used
83	3-8-004:002	6.40	4.70	817; 821	No	Earthen	Unregulated/Rarely Used

Not all reservoirs are currently in use.
*Reservoir 23 was lined with concrete/rubber. Lining is currently deteriorated.
**Kaupakalua decommissioned in 2021/2022.
***Kapalaalaea decommissioning project begins in 2023.
****Evaporation rate is the average gallons per day evaporation for the quarter

Unregulated/Used Sparingly = In and out water ~1 day
Unregulated/Rarely Used = Passthrough only

EXHIBIT D

Reservoir No.	Tax Map Key	Capacity Million Gallons	Surface area Acres	Fields Feed by Reservoir	Lined	Type Material	Evaporation Rate (Average Gal/Day)****
14	2-5-04:39	9.50	1.50	100; 101	No	Earthen	2,098
15	2-5-04:39	8.30	1.10	101	No	Earthen	0
20	2-5-03:10	48.80	10.20	312; 314	No	Earthen	0
21	2-5-04:39	18.60	6.90	111; 113; 200	No	Earthen	0
22	2-5-03:10	43.80	10.60	201; 202	No	Earthen	0
24	2-5-03:10	15.00	3.60	201	Yes	Concrete	0
25	2-5-03:09	40.20	9.70	205	No	Earthen	46,496
30	2-5-03:01	21.00	9.00	300; 312	No	Earthen	0
33	2-5-02:02	46.50	8.00	304; 304; 313	No	Earthen	40,534
40	2-5-02:01	62.80	13.50	410; 400; 401; 413 (County Use)	No	Earthen	35,240
42	2-5-02:01	10.40	3.20	400; 401; 403	No	Earthen	14,875
52	3-8-03:04	74.00	20.00	504; 511	No	Earthen	0
60	3-8-01:06	80.50	20.80	600; 611	No	Earthen	5,780
61	3-8-01:01	53.10	9.00	604	No	Earthen	43,624
70	3-8-01:01	19.30	5.00	Mud Pile 710	No	Earthen	0
80	3-8-03:02	41.10	12.00	800; 801	No	Earthen	0
81	3-8-04:22	36.70	13.80	803 805 808 809	No	Earthen	66,644
82	3-8-04:22	17.90	7.40	810; 811; (812; 815; 816; 818; 819; 822; 823; Res. Ditch)	No	Earthen	0
84	3-8-03:02	35.10	8.00	701; 702; 703; (807; 813; 814; Res. Ditch)	No	Earthen	2,630
90	3-8-08:05	45.00	15.80	737; 761; 915; 917	No	Earthen	92,669
Haiku	(2)2-7-003:055 & 081	57.9	27.30	Haiku Ditch	No	Earthen	0
Pauwela	(2)2-7-003:030 & 056/2-7-008:038	32.5	6.80	Haiku Ditch	No	Earthen	0
Peahi	(2)2-8-002:018	22	5.80	Haiku Ditch	No	Earthen	0
Kapalaalaea	(2)2-8-007:001	49.7	8.70	Haiku Ditch	No	Earthen	0
Papaaea	(2)2-9-014:004	42.5	9.00	Center Ditch to Lowrie Ditch	No	Earthen	0
9	2-5-004:039	1.00	NA	110	No	Earthen	Unregulated/Rarely Used
10	2-5-004:039	9.50	NA	116	No	Earthen	Unregulated/Rarely Used
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23	2-5-005:019	13.70	NA	200	Yes*	Concrete/rubber	Unregulated/Rarely Used
26	2-5-005:019	10.10	NA	208	No	Earthen	Unregulated/Rarely Used
29	2-5-005:019	9.90	NA	213	No	Earthen	Unregulated/Rarely Used
31	2-5-003:031	5.10	NA	303	No	Earthen	Unregulated/Rarely Used
32	2-5-002:002	9.80	NA	304	No	Earthen	Unregulated/Rarely Used
34	2-5-003:010	8.10	NA	306	No	Earthen	Unregulated/Rarely Used
35	2-5-002:002	15.00	5.40	310; 311; 505	No	Earthen	Unregulated/Used Sparingly
41	2-5-002:001	8.90	NA	402; 404	No	Earthen	Unregulated/Rarely Used
43	2-5-001:001	13.50	4.00	409; 404	No	Earthen	Unregulated/Rarely Used
44	2-5-001:008	3.60	NA	Above 417;	No	Earthen	Unregulated/Rarely Used
45	2-5-001:008	4.20	NA	415; 414; 418	Yes	Concrete	Unregulated/Rarely Used
50	3-8-003:005	8.40	NA	209; 500; 507; 508	No	Earthen	Unregulated/Used Sparingly
51	3-8-003:004	15.20	NA	502; 505	No	Earthen	Unregulated/Rarely Used
83	3-8-004:002	6.40	4.70	817; 821	No	Earthen	Unregulated/Rarely Used

Not all reservoirs are currently in use.
*Reservoir 23 was lined with concrete/rubber. Lining is currently deteriorated.
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****Evaporation rate is the average gallons per day evaporation for the quarter

Unregulated/Used Sparingly = In and out water ~1 day
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MICHAEL P. VICTORINO
Mayor
BRADFORD K. VENTURA
Fire Chief
GAVIN L.M. FUJIOKA
Deputy Fire Chief

DEPARTMENT OF FIRE & PUBLIC SAFETY
COUNTY OF MAUI
200 DAIRY ROAD
KAHULUI, HI 96732

October 11, 2022

Ms. Suzanne D. Case
State of Hawai'i
Department of Land and Natural Resources
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Subject: **Estimate for Water Requirement for Fire Response by the County of Maui, Department of Fire and Public Safety**

Dear Ms. Case,

This letter is in response to a request to provide information regarding the estimate for water to be used in response to a brush fire arising in the central valley of Maui. Whether or not fire exists on public or private lands, it is our mission to protect life and property.

As you may know, Mahi Pono's farm is a vital source of water in the majority of the areas in and around Central Maui. From filling our tankers and mobile bladders to Air One dipping water from surrounding reservoirs, the water from the Mahi Pono farm is a critical part of our ability to execute our emergency plans in the event of a brush fire.

An estimate of our water usage during an emergency response depends on several different things, including – but not limited to – the size and location of the fire, the fuel load, proximity to other non-farm sources, weather conditions (wind speed and direction), and the time of day (helicopters do not assist in darkness for safety reasons). Most importantly, water usage is affected by the proximity of the fire relative to residences, property, and human life, which in an emergency situation, must be considered the highest priority. Given all of the above-mentioned variables, it would be exceedingly difficult to accurately estimate the amount of water necessary to bring the fire under control.

A letter was submitted on June 22, 2021, detailing the amount of water that could be used by each fire apparatus on a per hour basis in response to a wildland fire, however, the total amount of hours of use for each apparatus is directly related to the many factors mentioned above.

A copy of the June 22, 2021, letter is attached for your reference.

Sincerely,

HENRY LINDO, Jr.
Assistant Chief of Operations

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 791628, PAIA, MAUI, HAWAI'I 96779-1628 • (808) 579-9516

April 29, 2023

The Honorable Dawn Chang, Chair
and Members of the Board of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

RE: Holdover of Revocable Permits Nos. S-7263, S-7264, and S-7265 issued to Alexander & Baldwin, Inc. ("A&B") and Revocable Permit No. S-7266 issued to East Maui Irrigation Company, Limited ("EMI") for Water Use on the Island of Maui: Q1 2023 Status Report

Dear Chair Chang:

The purpose of this letter is to provide the 1st quarter status report on A&B/EMI's compliance with permit conditions imposed by the Board of Land and Natural Resources ("***BLNR***") as part of its approval of the holdover of Revocable Permits Nos. S-7263, S-7264, and S-7265 issued to A&B and Revocable Permit No. S-7266 issued to EMI for the calendar year 2023, as approved by the BLNR at its November 10, 2022 meeting. In accordance with the existing permit conditions, we are submitting a clean version of the 1st quarter report, along with a version which tracks changes against the quarterly report submitted for Q4 2022. The attached documents list each of the permit conditions and corresponding compliance actions undertaken as of March 31, 2022.

Since the last report that was submitted, water collection enabled by these East Maui revocable permits continued to serve the needs of the public water systems that serve Upcountry Maui and Nahiku, both owned and operated by the County of Maui Department of Water Supply, as well as the County's Kula Ag Park and increasing diversified agricultural activities in Central Maui undertaken by Mahi Pono. Maintaining these Central Maui lands in agriculture is consistent with the state's constitutional mandate to protect important agricultural lands, as well as the Hawaii State Plan, Maui Countywide Policy Plan, Maui Island Plan, and Maui community plans.

These uses of East Maui stream water are further recognized and confirmed by the June 20, 2018, Interim In-stream Flow Standard ("***IIFS***") decision issued by the Commission on Water Resource Management ("***CWRM***") for East Maui streams, 24 of which are within the area covered by the East Maui R.P.'s. The diversion and use of East Maui stream water during this quarter has been in compliance with the CWRM's June 2018 IIFS decision. In addition, in Q4 2022, CWRM amended the IIFS for certain streams in the Huelo license area. Pursuant to CWRM's decision, milestones were established for the submittal of certain permit applications to CWRM to implement the amended IIFS decision. EMI met the two deadlines set for Q1 2023 and are awaiting CWRM's processing of those applications.

EXHIBIT B

As info, although outside of the timeframe of this Q1 report, a meeting of the “interim committee” referenced in permit condition (7) in the 2022 D&O was held via video conference on April 19, 2023. Updates relating to the IIFS, EIS, and Mahi Pono's farming operations were provided to the Committee. The Q2 2023 meeting is scheduled for July 20, 2023.

Please do not hesitate to contact us should you have any questions on the attached permit compliance status report.

Sincerely,

Meredith J. Ching, A&B

Mark Vaught, EMI

cc: Ian Hirokawa, DLNR Land Division (via email)

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 791628, PAIA, MAUI, HAWAI'I 96779-1628 • (808) 579-9516

BLNR CONDITIONS FOR HOLDOVER OF EAST MAUI WATER PERMITS
STATUS OF COMPLIANCE AS OF APRIL 30, 2023

CONDITIONS PER THE FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION & ORDER

1. ***Require the revocable permits at issue- S-7263 (Honomanu), S-7264 (Huelo), S-7265 (Ke'anae) , and S-7266 (Nahiku) (collectively, the "RPs") to incorporate the Commission on Water Resource Management's ("CWRM") June 20, 2018 Findings of Fact , Conclusions of Law, and Decision & Order ("6/20/2018 CWRM D&O"). Diversion of surface water from the streams listed in the 6/20/2018 CWRM D&O shall be in accordance therewith, and so shall the timing for cessation of diversions, as necessary.***

   Status: The need for water from the East Maui streams averaged approximately 12.80 million gallons per day (MGD) during the first quarter of 2023. This amount continues to be well within the bounds of the 2018 IIFS decision concerning total quantity and the use of specific streams. It is also significantly less than the 40.49 MGD cap, calculated on a monthly basis, set by the BLNR at its November 10, 2022 meeting.

   The water that was diverted in Q1 2023 continued to supply the County of Maui for its Upcountry Maui water system, the Kula Ag Park, as well as fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands now owned and managed by Mahi Pono.

   There was a significant amount of rainfall within the Central Maui Fields during Q1 2023, **particularly in February**. This rainfall helped meet a portion of the crops' water requirement, which also led to **needing to divert less East Maui stream water than expected/normal in Q1.**

   During Q1 2023, Mahi Pono focused on the maintenance of existing crops and preparing new areas for planting later this year. As of March 31st, the planted acreage in Mahi Pono's **East Maui fields** remains at 8,316 acres, the same amount of planted acreage as Q4 2022 Mahi Pono anticipates ramping up planting operations beginning in Q2 2023 and continuing through Q3 & Q4. A corresponding increase in water applications is also expected. The Permittees – and by extension, Mahi Pono – remain committed to the efficient use of East Maui stream water. Mahi Pono's total amount of water usage, together with that of the County of Maui, will not exceed the limits of the IIFS decision at any point during its expansion.

All initial approvals have been received from the CWRM to abandon the diversions on the "taro streams" to fully restore their streamflow. EMI received Department of Health approval of the Best Management Practices Plan for the Category 2 diversions. Construction on fourteen of the intakes has been completed, with ongoing work taking place on the final remaining intake. The remaining work is dependent on the availability of helicopter support. If helicopter support can be scheduled, then we anticipate completing the remaining work on the final intake in Q2 2023.

The Permittees have also initiated discussions with CWRM staff on IIFS compliance for the 'non-taro streams' that were part of the 2018 IIFS decision. A draft work plan was submitted to CWRM for 41 diversions on 17 additional streams that are implicated by the 2018 IIFS decision. Before issuing the needed permits to undertake the work, CWRM will need to conduct site visits to each diversion site. In the meantime, the Permittees comply with the IIFS decision regarding instream flow requirements (i.e., by individual streams and the total quantity of flow). This compliance is subject to CWRM staff verification. Connectivity requirements of the IIFS decision are being met to the extent possible without the physical modifications that require governmental reviews and approvals. The draft work plan transmitted by the Permittees to the CWRM does address means of achieving full connectivity compliance for these additional non-taro streams.

In summary, the Permittees' diversion of water under the subject 2023 RPs continues to comply with the CWRM's June 20, 2018, IIFS order concerning flow volumes, by individual streams, compliance with connectivity requirements has been met to the extent legally possible without further governmental review and approvals. Significant progress has been made on pursuing the modifications and abandonment of diversions on the seven 'taro streams,' an established and continued priority for both the permittees and the State.

2. ***There shall be no waste of water. System losses and evaporation shall not be considered as a waste of water.***

Status: See uses outlined in response to #1 above. All diverted water is being put to beneficial agriculture use or municipal use, as the diverted water supplies the County of Maui for its Upcountry Maui water systems, the Kula Ag Park, Central Maui fire suppression needs, municipal users who do not currently have access to the County DWS delivery system, and agricultural uses in Central Maui on lands now owned and managed by Mahi Pono. Exhibit A notes system losses and evaporation as water uses.

3. ***Any amount of water diverted under the RPs shall be for reasonable and beneficial use and always in compliance with the interim instream flow standards (IIFS).***

   Status: See responses to #1 and #2 above. In addition, in the fourth quarter of 2022, CWRM amended the IIFS for certain streams in the Huelo license area. Pursuant to the CWRM's decision, certain milestones were established for the submittal of certain permit applications to the CWRM to implement the amended IIFS decision. EMI met the two deadlines set for Q1 2023 and are awaiting the CWRM's processing of those applications.

4. ***Permittee shall provide a report on the progress regarding the removal of diversions and fixing of the pipe issues before the end of the RP term.***

   Status: This permit condition was initially imposed in 2018, and we believe it relates to a pipe at Pualoa (aka Puolua) Stream at the Lowrie Ditch. In a previous status report, we reported that the pipe had been extended to provide wetted pathways for the movement of stream biota on Pualoa Stream. At the 2018 BLNR hearing on the subject RP's (for 2019), statements were made that the pipe needs to be extended further to go under the road and that two 4" rusted pipes needed to be removed. Accordingly (and as reported in previous quarterly reports), the two 4" pipes have since been removed from the watershed and a new design intended to improve fish migration has been incorporated in the diversion modification plan for compliance with the IIFS and approved by the CWRM in its approval of the Category 3 SDWPA. This specific scope of work was part of the overall work plan referenced earlier.

   Road maintenance and repair activities continue in order to better facilitate access to several of the more remote intakes that are subject to Category 2 permits. We have submitted a final plan to CWRM for the modifications to Category 1 closures intended to restore the streams to as natural a condition as possible. CWRM is in the process of reviewing the plan and discussing its implementation with East Maui community groups.

5. ***Permittee shall cleanup trash and debris from revocable permit areas starting with areas that are accessible and close to streams; "trash and debris" shall be defined as " any loose or dislodged diversion material such as concrete, rebar, steel grating, corrugated metals, railroad tires, etc., that can be removed by hand (or by light equipment that can access the stream as is)".***

Status: The Permittees have established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous fieldwork. In the first quarter of 2023, EMI continued to be vigilant about monitoring and removing unused material. The debris found in Q4 2022 has been consolidated into a single location and will be removed concurrently with the helicopter support necessitated by the remaining Category 2 work.

EMI will also continue removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed, which includes diversion modifications required to meet the 2018 IIFS.

EMI understands the term "Trash and Debris" is further defined as noted in the DLNR staff submittal. As mentioned previously, EMI has established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous field work. EMI also has a practice of removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed. These practices continue to apply to the "Trash and Debris" term as more clearly defined by DLNR staff.

6. ***The RPs shall be subject to any existing or future reservations of water for the Department of Hawaiian Home Lands (DHHL);***

Status: EMI acknowledges that the RPs shall be subject to any existing or future reservation of water for the DHHL.

7. ***Coordinate with an interim committee to discuss water usage issues in the RP areas. The committee shall consist of seven members, representing EMI/Mahi Pono, Farm Bureau, Office of Hawaiian Affairs, the Native Hawaiian Legal Corporation, the Huelo Community Association, the Sierra Club, and the County of Maui. The interim committee shall meet at least quarterly, more often as useful.***

Status: The quarterly meeting of the RP Committee was held on Wednesday, April 19, 2023. Jayson Watts (Mahi Pono / EMI) sent an invitation via email to the group on Tuesday, April 11, 2023. The meeting was attended by Lafayette Young (Huelo Community), Ashley Obrey (NHLC / Na Moku), Jerome Kekiwi Jr. (Na Moku), Lucienne

de Naie (Sierra Club), Jayson Watts (Mahi Pono), Mark Vaught (EMI), and Grant Nakama (Mahi Pono).

EMI provided an update on the work related to the implementation of the IIFS, and Mahi Pono supplied an update on farming operations. The information provided by Mahi Pono and EMI to the committee generally mirrored the farming and IIFS updates that are included as exhibits to this quarterly report. Mahi Pono and EMI also answered follow-up questions from the Sierra Club about IIFS updates provided. The meeting adjourned approximately 45 minutes after it started. The committee's next meeting is tentatively set for July 20, 2023.

8. Permittee shall therefore provide quarterly written reports to the Board of Land and Natural Resources (Board) containing (at a minimum) the following information:

a. *The amount of water used on a monthly basis, including the monthly amount of water delivered for: the County of Maui Department of Water Supply and the County of Maui Kula Agricultural Park; diversified agriculture; industrial and non-agricultural uses; and reservoir/fire protection/hydroelectric uses. Descriptions of diversified agricultural uses shall also provide information as to location, crop, and use of the water. Industrial and non-agricultural uses shall specify the character and purpose of water use and the user of the water;*

Status: The amount of water used on a monthly basis, including the monthly amount of water delivered for the County of Maui DWS and Kula Ag Park, diversified agriculture, industrial and non-agricultural uses, and reservoir/fire protection/hydroelectric uses can be found in the table attached as Exhibit A. The existence of and continued use of reservoirs is extremely important for fire safety reasons. They are a major source of water for fighting fires on Maui, which occur during the dry months of the year. The location, crop, and users of agricultural water, and the specifics on industrial and non-agricultural uses can be found in the table attached as Exhibit B.

As Mahi Pono prepares new fields for planting, they continue to install new irrigation systems that focus on efficient water application measures. In addition to these new systems, we are also installing weed mat throughout the farm, which help the soil maintain moisture

by reducing evaporation. The cumulative water efficiency effects of these initiatives can be seen in the reduced amount of water remaining in the final column of the table attached as Exhibit A.

b. *An estimate of the system loss for both the EMI ditch system and the A&B field system, also on a monthly basis.*

Status: The accepted Final Environmental Impact Statement which considers East Maui water diversions facilitated by a long-term lease contains estimates for system losses for both the EMI ditch system as well as the "*A&B field system"*.

- EMI Ditch System – As stated in the FEIS, a USGS study "concluded that it was unclear whether net seepage losses even occur in the EMI Aqueduct system, due to the large amount of tunnel in the system, as well as the seepage gains that enter the system."

- A&B Field System – An estimate of the system losses by month is as shown in the table below:

Month	EMI Ditch System (in MGD)	Field System (in MGD)
January	0	1.92
February	0	0.44
March	0	-0.43
Average	0	0.64

As noted by Condition #2 above, system losses and evaporation shall not be considered as a waste of water.

c. *For each stream that is subject to the 6/20/2018 CWRM D&O, a status update as to the degree to which the flow of each stream has been restored, and which artificial structures have been modified or removed as required by CWRM.*

Status: EMI prioritizes its compliance with the CWRM order and has been working with CWRM staff on implementation plans and

permitting. EMI notes that the language of the CWRM order relating to the removal of artificial structures is spelled out on page 269 of the D&O, items i, j, and k which State in part that *"it is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed."* and "The intent of the Commission is to allow for the continued use and viability of the EMI ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS. A status update is provided in the table attached as Exhibit C. Also included in Exhibit C is a copy of the section of the CWRM order relating to the removal of artificial structures.

d. *Update on removal of trash, unused man-made structures, equipment, and debris that serve no useful purpose, including documenting any reports of such items that Permittee has received from the Department, other public or private entities and members of the general public and the action(s) taken by Permittee, if any, to remove the reported items*

Status: See above response to #5 above.

e. *The method and timeline for discontinuing the diversion of water from Waipio and Hanehoi streams into the Ho'olawa stream, including status updates on implementation.*

Status: As the stream levels fluctuate during inclement weather, EMI personnel are dispatched to manually control the intake gates to prevent excess stream water inflow to the ditch. As for Haneho'i, all intakes have been sealed (per the 2018 D&O); therefore, no water enters the ditch from this stream. Regarding the Waipi'o stream, EMI personnel manually control the intakes on the ditch to prevent excess flow from entering the ditch. Thus, all flows to the ditch are delivered to and used by Mahi Pono and the County of Maui. The flows are no longer controlled into Hoolawa stream.

f. *A listing of all reservoirs in the A&B/EMI water system serviced by the RPs, with the following information provided for each:*

The capacity of each such reservoir;

The surface area of each such reservoir;

What fields are irrigated by each such reservoir, or in the alternative, which reservoirs service the County of Maui's domestic needs, Kula Agricultural Park farmers, and DHHL lands;

Which reservoirs are lined, and with what material, and which are not;

The estimated amount of evaporation per day from the surface of each such reservoir;

An analysis of the cost and time to line at least one such reservoir; and

Information on any reservoirs planned to be taken out of service.

Status: A table containing most of the information requested above is attached as Exhibit D. Evaporation estimates are based on actual reservoir water levels during Q1 2023, with the figures being displayed in gallons per day.

In addition to the information in Exhibit D, we have also determined an estimated unit cost of $7.00 per square foot (sloped) to line a reservoir, plus estimated engineering costs typically being between $30k - $60k per reservoir. If we apply these costs to a reservoir with a 10-acre surface area and assumed slope adjustment of 25%, then the resulting estimate would be approximately $3.85M.

g. *The number, location, timing, and approximate acreage of fires fought during the quarter using water from reservoirs supplied with water from the A&BIEMI system.*

Status: There were no fires reported during the first quarter of 2023.

h. *The names and locations of the reservoirs from which water was drawn to fight fires during the quarter, together with:*

(i) *Whether those reservoirs are lined or not;*

(ii) The average depth of water in those reservoirs;

(iii) Estimated average monthly inflows and outflows from those reservoirs; and

(iv) The amount of water used for hydroelectric purposes, if any.

Status: There were no fires reported during the first quarter of 2023. Permittees will work diligently to record the requested data in the event of future fires.

i. *A listing of all irrigation wells in the A&B/EMI water system serviced by the RPs, with the water levels and chloride levels in each well that is in active use noted.*

Status: In the first quarter of 2023, Wells 12, and 13 were in active use. Chloride levels measured during the quarter are provided below:

- *Well #12*
  - *pH – 7.6 (12A) and 7.2 (12B)*
  - *Sodium – 280 mg/L (12A) and 280 mg/L (12B)*
  - *Water Level – 26 Inches*

- *Well #13*
  - *pH – 7.2 (13A) and 7.1 (13B)*
  - *Sodium – 220 mg/L (13A) and 210 mg/L (13B)*
  - *Water Level – 32 Inches*

j. *Each quarterly report shall be submitted in a format with tracked changes that clearly show the differences/updates from the prior quarter.*

Such quarterly reports shall be "due" to the DLNR one month after the last calendar day of the subject quarter. Thus, the reports shall come due as follows:

Q1 Report – April 30, 2022
Q2 Report – July 31, 2022
Q3 Report – October 31, 2022
Q4 Report – January 30, 2023

. . . and so on;

Status: This Q1 2023 report is the third version to implement a track-change format vs. the prior quarter. The deadline to submit quarterly reports is noted, and EMI is committed to timely submittals of all future reports.

k. *For water used for agricultural crops, the Permittee shall disclose in each quarterly report how much water was required on average for each type of crop per acre per day for the previous quarter.*[1]

	Current Acreage	Q1 2023 **Approximate *Irrigation* Average*** (*GPAD = PER ACRE*)
Orchard Crops	7,817	827
Row Crops	461	551
Tropical Fruits	6	779
Energy Crops	32	529

*Figures are representative of irrigation applied during the quarter, which doesn't include rainfall. This is not representative of the crop water requirement, which is partially met to a varying degree (depending on weather) by rainfall.

9. The Permittee may not divert an amount of water exceeding an average of 40.49 million gallons per day (mgd), averaged monthly, for all permits combined, further subject to all water diverted shall be for reasonable and beneficial uses.

[1] This condition was added at the November 10, 2022 BLNR meeting.

Status: The first quarter's need for water from the East Maui streams has averaged approximately 12.80 million gallons per day (MGD), a lower level than expected due to unanticipated levels of rainfall. Only that amount of water that is needed is being diverted from the East Maui watershed. This amount complies with the limit of an average of 40.49 MGD, calculated on a monthly basis, set by the BLNR at its November 10, 2022 meeting. This water is being used to supply the County of Maui for its Nahiku and Upcountry Maui water systems, the Kula Ag Park, fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands now owned and managed by Mahi Pono.

10. ***For RP S-7266, the area identified as the Hanawi Natural Area Reserve shall be removed from the revocable permit premises. Additionally, A&B/EMI shall continue discussions with the Department's Division of Forestry and Wildlife ("DOFAW") to identify additional forest reserve lands to be removed from the license areas.***

    Status: Meetings between EMI and DOFAW have been held and were focused on identifying those areas that are essential to EMI's ongoing operations, such as access routes and buffer areas around the EMI ditch system to ensure the reliable and safe operation of the system as well as the safety of EMI employees. The most recent of these meetings in Q1 2023 were held on Wednesday, January 29, 2023 and February 24, 2023. Both meetings were held via Zoom. EMI has expressed to DOFAW a willingness to reduce the license/lease area as long as the permitted area (a) meets the collective needs of DLNR and DOFAW, (b) continues to allow EMI to operate its ditch system in a safe and efficient manner, and (c) does not affect the access to state water afforded by existing or future RPs and water license/lease(s). DOFAW and EMI have identified preliminary locations for suitable crossing points over the EMI system to State-owned lands located upslope. Discussions between EMI and DOFAW on the reduced lease/license area will continue.

11. ***Mahi Pono is to advise any third-party lessees, that any decisions they make is based on availability of water on a month-to-month basis renewed annually unless there is a permanent lease***

    Status: All third-party lessees have been informed through existing language in their lease agreements that the availability of water is subject to change based on various

conditions, one of which would be the nature of the water availability from East Maui through an annually renewed revocable permit or an eventual permanent lease.

12. For the streams in the revocable permit area that have not had interim instream flow standards set, Permittee shall continue to clean up and remove debris from the permit areas and staff shall inspect and report every three months on the progress of the clean-up. For purposes of clean-up, debris shall not include any structure and equipment that is either currently used for the water diversions, or for which CWRM has not required removal.

Status: EMI has continued to remove debris and trash from stream areas. These efforts include locations surrounding the streams located outside of the IIFS area.

13. Permittee shall require its staff to inspect the streams and report on whether the lands could be developed for agricultural land or water leases.

Status: EMI understands that, in general, State-owned land adjacent to streams in East Maui are conservation lands in forest reserves which may not be suitable for agricultural development. An agricultural assessment for the East Maui lands/watershed, including the state-owned lands, was included as part of the environmental impact statement ("FEIS") prepared by the Permittees for the proposed state water lease and accepted by the State. In addition, the FEIS contemplated the use of those lands as a collection area for a state water lease.

14. The RPs shall also comply with all conditions required by the 6/20/2018 CWRM D&O, which includes meeting the IIFS set forth in paragraph "h" of the "Decision and Order " section of the D&O. That paragraph provides a chart showing the name of the stream, the restoration status, the amended IIFS value, and an IIFS location, if applicable, for each stream, as follows:

Stream Name	Restoration Status	BFQs at IIFS (cfs)	IIFS Value (cfs)	IIFS Location
Makapipi	Full	1.3	n/a	Above Hana Highway
Hanawi	Connectivity	4.6	0.92	Below Hana Highway

Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch
Waiaaka	None	0.77	0.77	Above Hana Highway
Paʻakea	Connectivity	0.9	0.18	At Hana Highway
Waiohue	Full	5.0	n/a	At Hana Highway
Puaʻakaʻa	Connectivity	0.9	0.18	Above Hana Highway
Kopiliula	H90	5.0	3.2	Below Hana Highway
East Wailuaiki	H9o	5.8	3.7	At Hana Highway
West Wailuaiki	Full	6.0	n/a	Above Hana Highway
Wailuanui	Full	6.1	n/a	At Hana Highway
Ohia/Waianu	None	4.7	n/a	None.
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch
Palauhulu	Full	11	n/a	Above Hana Highway
Piʻinaʻau	Full	14	n/a	Above Hana Highway
Nuaʻailua	Connectivity	0.28	2.2	To be determined
Honomanu	H9o	4.2	4.2	Above Hana Highway
Punalau/Kolea	H9o	4.5	2.9	Above Hana Highway
Haʻipuaʻena	Connectivity	4.9	1.36	Below Hana Highway
Puohokamoa	Connectivity	8.4	1.1	Above Hana Highway
Wahinepeʻe	None	0.9	0.9	Above Hana Highway
Waikamoi	H9o	6.7	3.8	Above Hana Highway
Hanehoi	Full	2.54	n/a	Upstream of Lowrie Ditch
Huelo (Puolua)	Full	1.47	n/a	Downstream of Haiku Ditch
Honopou	Full	6.5	n/a	Below Hana Highway

Status: See response to #1 above.

15. Permittee shall cooperate with CWRM and the Department's Division of Aquatic Resources (DAR) in facilitating studies, site inspections and other actions as

necessary to address the streams in the RP areas that are not covered by the 6/20/2018 CWRM D&O.

Status: EMI continues to be in contact with CWRM personnel regarding site visits to evaluate diversions that weren't covered by the 2018 D&O. Such site visits most recently occurred in Q1 2023, related to the amendment of the Huelo Streams IIFS passed by CWRM in 2022. CWRM field staff conducts these site visits on a stream-by-stream basis. EMI has previously contacted DAR and has expressed willingness to cooperate with any DAR activities related to the DAR work on streams outside the license area.

16. ***Permittee shall work with CWRM and DOFAW to determine whether there are alternatives to diversion removal that effectively prevent mosquito breeding and can be feasibly implemented. Permittee shall include the status of alternatives in its quarterly reports.***

Status: EMI has worked with CWRM in the context of the earlier discussion with DOFAW regarding diversion structures that can impede free flow of water and create habitat for mosquito breeding. Considerable evaluation and analysis have been conducted by the CWRM and EMI on nine "Category 1" diversions regarding additional work to be done on these diversions to mitigate these issues. CWRM will meet with stakeholders to discuss this mitigation plan and report back to EMI as to the additional diversion modification work to be undertaken.

17. ***If the Board finds that a use of water is not reasonable and beneficial and does not comply with the permitted uses, Permittee shall cease such use within a timeframe as determined by the Department of Land and Natural Resources (Department).***

Status: EMI remains willing to comply with this requirement and stands ready to assist the Board in any way it can regarding this matter.

18. ***For water used for agricultural crops, Permittee is to estimate how much water is required for each crop per acre per day.***

Status: Water requirements for each crop is highly dependent on several factors, including soil composition, weather, and the maturity of the crop itself. That said, the average water requirements for Mahi Pono's agricultural crops at full maturity are estimated to be as follows:

- Orchard Crops - 5,089 gallons per acre per day
- Row Crops - 3,392 gallons per acre per day
- Tropical Fruits - 4,999 gallons per acre per day
- Energy Crops - 3,392 gallons per acre per day

These estimates are consistent with the estimated water requirements contained in Table 3 of Appendix I (Agricultural and related Economic Impacts) of the EIS. The average water requirements listed above are reflective of the crops' collective water needs (irrigation & rainfall) at full maturity. This differs from the reported irrigation average, which is reflective of the irrigation consumption (excluding rainfall) of immature crops.

19. Permittee shall submit to the Department a plan for their proposed upgrades, including an implementation timeline, to the irrigation system intended to address CWRM' s concerns no later than December 1, 2022. Permittee is to work with the Maui Fire Department to determine what their exact needs are.

Status: The Mahi Pono System Efficiency Upgrades Report was submitted to the BLNR on November 30, 2022. A supplemental report requested by the BLNR containing additional information on system losses was also submitted on March 24, 2023.

An updated response to the Permittees' request for information regarding the department's requirements is attached as Exhibit E. Permittees will continue to work with the Maui Fire Department and will report on any future developments that may allow for additional estimates to be shared.

20. Permittee shall pay the monthly rent amounts as determined by the Board; the 2023 monthly rent amounts shall be those set by the Board at its December 8, 2022 meeting.

Status: EMI has remained current in its payment of rent to the State for the subject revocable permits.

21. Permittee shall look into supplying the Maui Invasive Species Committee with water, and if feasible, and despite it not being an agricultural use, be considered a reasonable and beneficial and permitted use under the RP.

Status: EMI/Mahi Pono have successfully provided MISC with water to support their operations starting in Q1 2023. The water used by MISC during Q1 2023 is projected to be minimal (and accounted for in the "*Other"* column in Exhibit A), but EMI is in the process of metering the MISC's water use. That meter should be installed in Q2 2023.

22. ***DOFAW shall discuss with Maui Fire Department and report to the Board at the next RP renewal whether ocean water can feasibly be substituted for some of the firefighting needs. Effects of applying ocean water shall also be considered.***

This condition is not applicable to A&B/EMI. It has been included in this report for completeness.

23. At or before the next renewal of the RP's, or before a request for authorization to lease water rights at public auction, at a scheduled meeting of the Board, the Permittees shall cooperate with the Department's Land Division and DOFAW, who the Board directs to bring a proposed watershed management fee and/or requirements for the Permittees to implement management actions in the watershed.

Status: EMI will cooperate with the Department's Land Division and DOFAW on the development of their proposal related to watershed management. The Permittees met with DOFAW on January 11, 2023, where DOFAW presented its current draft of a watershed management plan for East Maui and fee concepts. The Permittees responded with a list of follow-up questions seeking additional clarity from DOFAW on some of the concepts proposed in the preliminary draft of its WMP. The Permittees continued to follow-up with DOFAW throughout the quarter and received a response consisting of an updated draft on April 19, 2023. The Permittees are still evaluating the changes proposed by this most recent draft. The Permittees will continue to work with DOFAW/DLNR on a fair and equitable WMP and associated fee.

EXHIBIT A – MONTHLY WATER USAGE

All Figures in Millions of Gallons per Day ("MGD")

Month	East Maui Surface Water @ Honopou	East Maui Surface Water Gained from Area Between Honopou and Maliko	Groundwater Pumped on-Farm	County of Maui DWS [1]	County of Maui Ag Park [2]	Diversified Agriculture [3]	Historic / Industrial Uses [4]	Reservoir / Seepage / Fire Protection / Evaporation / Dust Control / Hydroelectric [5]	
								Diverted Reserve to meet Contractual Obligation to County DWS & Ag Park [6]	Other [7]
January	15.57	0.67	2.92	2.57	0.46	9.72	0.03	4.46	1.92
February	10.60	0.96	0.00	1.22	0.29	3.59	0.03	6.00	0.44
March	12.24	1.32	0.48	1.50	0.39	6.92	0.04	5.62	-0.43
Quarterly Average	**12.80**	**0.25**	**1.13**	**1.76**	**0.38**	**6.74**	**0.03**	**5.36**	**0.64**

1. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

2. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

3. Diversified Agriculture includes the users/uses described in Exhibit B.

4. Historical/Industrial Uses are non-HC&S uses that have historically relied on water from the EMI Ditch System, even after the closure of HC&S. These include uses by entities located either adjacent to or within the boundaries of the farm and are further described in Exhibit B. Historically, the use of water by these entities was not regularly metered, and a historical estimate of 1.1 MGD was developed and previously used as the amount of collective water consumption by these entities. Mahi Pono installed meters in March 2022 thus, starting with the Q2 2022 report, the figures reported in this column will reflect actual usage based on those meters. As previously mentioned, HC&D's water usage is no longer accounted for in this column as HC&D is obtaining water from its own well.

5. The numbers in these columns include water not separately accounted for in the columns to the left. The EMI system is operated in a manner that ensures continuous water availability in the reservoirs to meet the County of Maui's needs for fire protection for brush fires, the risk of which has increased due to the reduction of the irrigated acreage following the cessation of sugar cultivation but is decreasing as Mahi

Pono continues to implement its farm plan. Seepage and evaporation are also included in this column. The water used by the Mahi Pono hydroelectric system is non-consumptive and is returned to the ditch after being used to generate clean energy. The water is re-used consumptively by one of the other uses, or if there is no reuse, ends up in the reservoirs.

6. Operationally and pursuant to a contractual agreement with the County of Maui, a minimum of approximately 6 MGD must be reliably conveyed to / made available to the County each and every day so that the County has flexibility regarding when to run its plant depending on weather conditions, demand, water available from its Piiholo plant, etc. Additionally, a minimum of approximately 1.5 MGD must be reliably conveyed to / made available to the County each and every day so that the County can be flexible regarding how to meet the needs of the Ag Park. The numbers in this sub-column reflect the portion of the 7.5 MGD that is made available to the County every day, that the County does not use (i.e., 7.5mgd less the sum of the amounts used by the County DWS at Kamole Weir and Ag Park). Water that is not used by the County remains in the Ditch System and is directed to reservoirs located on the former plantation.

7. The numbers in these columns reflect the amount of water not separately accounted for in the columns entitled "County of Maui DWS," "County of Maui Ag Park," "Diversified Agriculture," and "Historic/Industrial Uses" less the reserve needed to meet EMI's contractual obligations to the County of Maui. As has been explained in the past, although EMI/Mahi Pono cannot rely on receiving any specific amount of the diverted reserve to meet the contractual obligation to the County DWS and Kula Ag Park that is not actually consumed by the County (“Diverted Reserve”) for purposes of planning to meet the irrigation needs of Mahi Pono’s crops, EMI/Mahi Pono do make an effort to use the Diverted Reserve when feasible. The negative number in this column for the month of March reflects EMI/Mahi Pono’s use of a portion of the Diverted Reserve in the month of March for irrigation purposes.

EXHIBIT B – WATER USAGE SPECIFICS

Diversified Agriculture Use

Entity	Crop	Field	Acreage
Mahi Pono	Citrus	300	305
Mahi Pono	Coffee	301	273
Mahi Pono	Citrus	303	161
Maui Best (Tenant)	Sweet Potato	408	281
Maui Best (Tenant)	Sweet Potato	409	180
Mahi Pono	Citrus	501	83
Mahi Pono	Citrus	502	290
Mahi Pono	Citrus	503	144
Mahi Pono	Citrus	504	294
Mahi Pono	Citrus	505	240
Mahi Pono	Citrus	507	189
Mahi Pono	Citrus	508	183
Mahi Pono	Citrus	508B	213
Mahi Pono	Citrus	509	79
Mahi Pono	Citrus	510	181
Mahi Pono	Citrus	511	161
Mahi Pono	Citrus	512	132
Mahi Pono	Citrus	602	196
Mahi Pono	Citrus	603	262
Mahi Pono	Citrus	604	343
Mahi Pono	Citrus	605	394
Mahi Pono	Citrus	606	134
Mahi Pono	Mixed	608	70
Mahi Pono	Citrus	610	40
Mahi Pono	Citrus	701	269
Mahi Pono	Citrus	702	232
Mahi Pono	Citrus	703	150
Mahi Pono	Citrus	704	214
Mahi Pono	Citrus	708	299
Mahi Pono	Citrus	800	100
Mahi Pono	Citrus	801	281
Mahi Pono	Citrus	803A	127
Mahi Pono	Pongamia	803B	32
Mahi Pono	Avocado	803C	6
Mahi Pono	Coffee	807	120
Mahi Pono	Mixed	807	39
Mahi Pono	Citrus	808	158
Mahi Pono	Citrus	809	251
Mahi Pono	Citrus	809X	72
Mahi Pono	Citrus	813	448
Mahi Pono	Citrus	814	342
Mahi Pono	Citrus	818	266
Mahi Pono	Citrus	911	82
TOTAL			***8316***

EXHIBIT B – WATER USAGE SPECIFICS (Continued)

Historic / Industrial Uses

Water Users	Source/Delivery Point	Water User's Location	Relationship to EMI / A&B / Mahi Pono	Use
Imua Energy Maui LLC, dba Maui EKO Systems LLC (Tenant of County Central Maui Landfill)	Pumped from Haiku Ditch	3-8-003-019	Gov't Tenant	General Use for Compost Operation
HC&S Mill Area Fire Suppression	702 Cistern	3-8-006-001 CPR #l	A&B - Owned	Fire suppression for ag offices & Puunene Post Offlce
New Leaf Ranch (Non-Profit)	702 Cistern	3-8-006-029	Tenant	Irrigation water for non-profit providing ag-related work opportunities and training as mental health & substance use dependency treatment
Costo Maddela	Haiku Ditch	3-8-001-001	Tenant	Pasture & Animal Water
Harriet, Michael & Jordan Santos	Kauhikoa Ditch	2-5-001-018 & 019	Tenant	Pasture & Animal Water
Leonard Pagan	Kauhikoa Ditch	2-5-002-001	Tenant	Pasture & Animal Water
Harry Cambra	Kauhikoa Ditch	2-5-003-026,027,036,037,038	Tenant	Pasture & Animal Water

EXHIBIT C – CWRM ORDER STATUS UPDATE

Section i, j, & k from CWRM D&O

i. It is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed.

j. This Order does not require that every diversion on every tributary be removed or modified, the Commission is only looking at modifications to main stem and major diversions to accomplish the amended IIFS set forth above. The Commission also recognizes that it is not the purpose of this proceeding to determine how the diversions will be modified. That issue will be before the Commission in a subsequent process.

k. The intent of the Commission is to allow for the continued use and viability of the EMI Ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS.

EXHIBIT C – CWRM ORDER STATUS UPDATE (Continued)

IIFS STREAM UPDATE

Stream Name	Restoration Status	BFQ50 at IIFS (cfs)	IIFS Value (cfs)	IIFS Location	Current Status
Makapipi	Full	1.3	n/a	Above Hana Highway	Gate removed, water flowing downstream below intake
Hanawi	Connectivity	4.6	0.92	Below Hana Highway	Gate open, water flowing downstream below intake
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch	Main gate open, water flowing downstream below intake
Waiaaka	None	0.77	0.77	Above Hana Highway	Gate open, water flowing downstream below intake
Palakea	Connectivity	0.9	0.18	At Hana Highway	Intake gate closed, water flowing downstream over dam
Waiohue	Full	5	n/a	At Hana Highway	Intake gate closed, sluice gate removed. All water flowing downstream.
Pua'aka'a	Connectivity	1.1	0.2	Above Hana Highway	Gate open, water flowing downstream below intake
Kopiliula	H90	5	3.2	Below Hana Highway	Main gates open, ditch control gates closed. Water flowing downstream.
East Wailuaiki	H90	5.8	3.7	At Hana Highway	Gates open, water flowing downstream below intake
West Wailuaiki	Full	6	n/a	Above Hana Highway	Gates open, water flowing downstream below intake
Wailuanui	Full	6.1	n/a	At Hana Highway	All intakes sealed (Category 1) water flowing downstream below intake
Oh?a/Waianu	None	4.7	n/a	None	No diversion
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch	All intakes closed, water flowing downstream
Palauhulu	Full	11	n/a	Above Hana Highway	All water either passing intakes or flowing out of the Kano sluice gate. Water flowing downstream.
Pi?na?au	Full	14	n/a	Above Hana Highway	Intake sealed, water flowing downstream.
Nua'ailua	Connectivity	0.28	2.2	To Be Determined	Intake gate closed, water flowing downstream over dam
Honomanu	H90	4.2	4.2	Above Hana Highway	All 4 diversion sluice gates are open, water flowing downstream
Punalau/Koiea	H90	4.5	2.9	Above Hana Highway	Sluice gate open, water flowing downstream below intake
Haipuaena	Connectivity	4.9	1.36	Below Hana Highway	Intake gate closed, water flowing downstream, dam will require modification
Puohokamoa	Connectivity	8.4	1.1	Below Hana Highway	Intake gate will be used to ensure water flowing downstream, intake dam will require significant modification
Wahinepee	None	0.9	0.9	Above Hana Highway	No diversion. Water flowing downstream.
Waikamoi	H90	6.7	3.8	Above Hana Highway	Center ditch sluice gate open. Water flowing downstream.
Hanehi'i	Full	2.54	n/a	Upstream of LowrieDitch	Intakes sealed. Water flowing downstream.
Iiuelo (Puolua)	Full	1.47	n/a	Downstream of Iaiku Ditch	Lowrie intake will require significant modifications & corresponding permit approvals / Iaiku intake sealed
Honopou	Full	6.5	n/a	Below Hana Highway	Three sluice gates open, one intake sealed. One of two Waiiole intakes sealed, water flowing downstream

EXHIBIT D – RESERVOIR INFORMATION

EXHIBIT D

Reservoir No.	Tax Map Key	Capacity Million Gallons	Surface Area Acres	Fields Feed by Reservoir	Lined	Type Material	Evaporation Rate (Average Gal/Day)****
14	2-5-04:39	9.50	1.50	100; 101	No	Earthen	532
15	2-5-04:39	8.30	1.10	101	No	Earthen	0
20	2-5-03:10	48.80	10.20	312; 314	No	Earthen	0
21	2-5-04:39	18.60	6.90	111; 113; 200	No	Earthen	0
22	2-5-03:10	43.80	10.60	201; 202	No	Earthen	0
24	2-5-03:10	15.00	3.60	201	Yes	Concrete	0
25	2-5-03:09	40.20	9.70	205	No	Earthen	43,031
30	2-5-03:01	21.00	9.00	300; 312	No	Earthen	0
33	2-5-02:02	46.50	8.00	304; 304; 313	No	Earthen	32,442
40	2-5-02:01	62.80	13.50	410; 400; 401; 413 (County Use)	No	Earthen	62,347
42	2-5-02:01	10.40	3.20	400; 401; 403	No	Earthen	14,130
52	3-8-03:04	74.00	20.00	504; 511	No	Earthen	0
60	3-8-01:06	80.50	20.80	600; 611	No	Earthen	0
61	3-8-01:01	53.10	9.00	604	No	Earthen	41,138
70	3-8-01:01	19.30	5.00	Mud Pile 710	No	Earthen	0
80	3-8-03:02	41.10	12.00	800; 801	No	Earthen	0
81	3-8-04:22	36.70	13.80	803 805 808 809	No	Earthen	55,797
82	3-8-04:22	17.90	7.40	810; 811; (812; 815; 816; 818; 819; 822; 823; Res. Ditch)	No	Earthen	0
84	3-8-03:02	35.10	8.00	701; 702; 703; (807; 813; 814; Res. Ditch)	No	Earthen	10,878
90	3-8-08:05	45.00	15.80	737; 761; 915; 917	No	Earthen	75,586
Haiku	(2)2-7-003:055 & 081	57.9	27.30	Haiku Ditch	No	Earthen	0
Pauwela	(2)2-7-003:030 & 056/2-7-008:038	32.5	6.80	Haiku Ditch	No	Earthen	0
Peahi	(2)2-8-002:018	22	5.80	Haiku Ditch	No	Earthen	0
Kapalaalaea	(2)2-8-007:001	49.7	8.70	Haiku Ditch	No	Earthen	0
Papaaea	(2)2-9-014:004	42.5	9.00	Center Ditch to Lowrie Ditch	No	Earthen	0
9	2-5-004:039	1.00	NA	110	No	Earthen	Unregulated/Rarely Used
10	2-5-004:039	9.50	NA	116	No	Earthen	Unregulated/Rarely Used
12	2-5-004:039	9.00	6.70	109	No	Earthen	Unregulated/Rarely Used
23	2-5-005:019	13.70	NA	200	Yes*	Concrete/rubber	Unregulated/Rarely Used
26	2-5-005:019	10.10	NA	208	No	Earthen	Unregulated/Rarely Used
29	2-5-005:019	9.90	NA	213	No	Earthen	Unregulated/Rarely Used
31	2-5-003:031	5.10	NA	303	No	Earthen	Unregulated/Rarely Used
32	2-5-002:002	9.80	NA	304	No	Earthen	Unregulated/Rarely Used
34	2-5-003:010	8.10	NA	306	No	Earthen	Unregulated/Rarely Used
35	2-5-002:002	15.00	5.40	310; 311; 505	No	Earthen	Unregulated/Used Sparingly
41	2-5-002:001	8.90	NA	402; 404	No	Earthen	Unregulated/Rarely Used
43	2-5-001:001	13.50	4.00	409; 404	No	Earthen	Unregulated/Rarely Used
44	2-5-001:008	3.60	NA	Above 417;	No	Earthen	Unregulated/Rarely Used
45	2-5-001:008	4.20	NA	415; 414; 418	Yes	Concrete	Unregulated/Rarely Used
50	3-8-003:005	8.40	NA	209; 500; 507; 508	No	Earthen	Unregulated/Used Sparingly
51	3-8-003:004	15.20	NA	502; 505	No	Earthen	Unregulated/Rarely Used
83	3-8-004:002	6.40	4.70	817; 821	No	Earthen	Unregulated/Rarely Used

Not all reservoirs are currently in use.
*Reservoir 23 was lined with concrete/rubber. Lining is currently deteriorated.
**Kaupakalua decommissioned in 2021/2022.
***Kapalaalaea decommissioning project begins in 2023.
****Evaporation rate is the average gallons per day evaporation for the quarter

Unregulated/Used Sparingly = In and out water ~1 day
Unregulated/Rarely Used = Passthrough only

EXHIBIT E – MAUI FIRE DEPARTMENT RESPONSE

MICHAEL P. VICTORINO
Mayor
BRADFORD K. VENTURA
Fire Chief
GAVIN L.M. FUJIOKA
Deputy Fire Chief

DEPARTMENT OF FIRE & PUBLIC SAFETY
COUNTY OF MAUI
200 DAIRY ROAD
KAHULUI, HI 96732

October 11, 2022

Ms. Suzanne D. Case
State of Hawai'i
Department of Land and Natural Resources
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Subject: **Estimate for Water Requirement for Fire Response by the County of Maui, Department of Fire and Public Safety**

Dear Ms. Case,

This letter is in response to a request to provide information regarding the estimate for water to be used in response to a brush fire arising in the central valley of Maui. Whether or not fire exists on public or private lands, it is our mission to protect life and property.

As you may know, Mahi Pono's farm is a vital source of water in the majority of the areas in and around Central Maui. From filling our tankers and mobile bladders to Air One dipping water from surrounding reservoirs, the water from the Mahi Pono farm is a critical part of our ability to execute our emergency plans in the event of a brush fire.

An estimate of our water usage during an emergency response depends on several different things, including – but not limited to – the size and location of the fire, the fuel load, proximity to other non-farm sources, weather conditions (wind speed and direction), and the time of day (helicopters do not assist in darkness for safety reasons). Most importantly, water usage is affected by the proximity of the fire relative to residences, property, and human life, which in an emergency situation, must be considered the highest priority. Given all of the above-mentioned variables, it would be exceedingly difficult to accurately estimate the amount of water necessary to bring the fire under control.

EXHIBIT E – MAUI FIRE DEPARTMENT RESPONSE (cont.)

A letter was submitted on June 22, 2021, detailing the amount of water that could be used by each fire apparatus on a per hour basis in response to a wildland fire, however, the total amount of hours of use for each apparatus is directly related to the many factors mentioned above.

A copy of the June 22, 2021, letter is attached for your reference.

Sincerely,

HENRY LINDO, Jr.
Assistant Chief of Operations

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 791628, PAIA, MAUI, HAWAI'I 96779-1628 • (808) 579-9516

BLNR CONDITIONS FOR HOLDOVER OF EAST MAUI WATER PERMITS
STATUS OF COMPLIANCE AS OF ~~DECEMBER 31~~APRIL 30, ~~2022~~2023

CONDITIONS PER THE FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION & ORDER

1. ***Require the revocable permits at issue- S-7263 (Honomanu), S-7264 (Huelo), S-7265 (Ke'anae) , and S-7266 (Nahiku) (collectively, the "RPs") to incorporate the Commission on Water Resource Management's ("CWRM") June 20, 2018 Findings of Fact , Conclusions of Law, and Decision & Order ("6/20/2018 CWRM D&O"). Diversion of surface water from the streams listed in the 6/20/2018 CWRM D&O shall be in accordance therewith, and so shall the timing for cessation of diversions, as necessary.***

   Status: The need for water from the East Maui streams averaged approximately ~~22.96~~12.80 million gallons per day (MGD) during the ~~fourth~~first quarter of ~~2022~~2023. This amount continues to be well within the bounds of the 2018 IIFS decision concerning total quantity and the use of specific streams. It is also significantly less than the ~~45~~40.49 MGD ~~allocation~~cap, calculated on a monthly basis, set by the BLNR ~~in~~at its ~~Findings of Fact, Conclusions of Law, and Decision & Order entered June 30, 2022 in DLNR File No. CCH-LD-21-01~~November 10, 2022 meeting.

   The water that was diverted in ~~Q4 2022~~Q1 2023 continued to supply the County of Maui for its Upcountry Maui water system, the Kula Ag Park, as well as fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands ~~?~~ now owned and managed by Mahi Pono.

   There was a significant amount of rainfall ~~in the month of December, which caused water to sheet flow directly into the ditch itself, inflows that are unpredictable and not controllable, rather than exclusively entering the system via the stream diversions.~~within the Central Maui Fields during Q1 2023, **particularly in February**. This rainfall helped meet a portion of the crops' water requirement, which also led to **needing to divert less East Maui stream water than expected/normal in Q1.**

   During Q1 2023, Mahi Pono ~~continues the expansion of its agricultural operations, which will result in a corresponding increase in the need for water from East Maui. Mahi Pono completed a total of 1,880 acres of plantings in the fourth quarter of 2022 to bring the total~~focused on the maintenance of existing crops and preparing new areas for planting later this year. As of March 31st, the planted acreage ~~for~~in Mahi Pono's **East Maui fields** ~~to~~remains at 8,316 acres, the same amount of planted acreage as Q4 2022 Mahi

Pono anticipates ramping up planting operations beginning in Q2 2023 and continuing through Q3 & Q4. A corresponding increase in water applications is also expected. The Permittees – and by extension, Mahi Pono – remain committed to the efficient use of East Maui stream water. Mahi Pono's total amount of water usage, together with that of the County of Maui, will not exceed the limits of the IIFS decision at any point during its expansion.

All initial approvals have been received from the CWRM to abandon the diversions on the "taro streams" to fully restore their streamflow. EMI received Department of Health approval of the Best Management Practices Plan for the Category 2 diversions. Construction on fourteen of the intakes has been completed, with ongoing work taking place on the final remaining intake. ~~We~~The remaining work is dependent on the availability of helicopter support. If helicopter support can be scheduled, then we anticipate completing the remaining work on the final intake ~~by April 30, 2023, subject to EMI being able to secure the requisite materials and helicopter delivery during the upcoming quarter~~in Q2 2023.

The Permittees have also initiated discussions with CWRM staff on IIFS compliance for the 'non-taro streams~~.~~' that were part of the 2018 IIFS decision. A draft work plan was submitted to CWRM for 41 diversions on 17 additional streams that are implicated by the 2018 IIFS decision. Before issuing the needed permits to undertake the work, CWRM will need to conduct site visits to each diversion site. In the meantime, the Permittees comply with the IIFS decision regarding instream flow requirements (i.e., by individual streams and the total quantity of flow). This compliance is subject to CWRM staff verification. Connectivity requirements of the IIFS decision are being met to the extent possible without the physical modifications that require governmental reviews and approvals. The draft work plan transmitted by the Permittees to the CWRM does address means of achieving full connectivity compliance for these additional non-taro streams.

In summary, the Permittees' diversion of water under the subject ~~2021~~2023 RPs continues to comply with the CWRM's June 20, 2018, IIFS order concerning flow volumes, by individual streams, compliance with connectivity requirements has been met to the extent legally possible without further governmental review and approvals. Significant progress has been made on pursuing the modifications and abandonment of diversions on the seven 'taro streams,' an established and continued priority for both the permittees and the State.

2. ***There shall be no waste of water. System losses and evaporation shall not be considered as a waste of water.***

   Status: See uses outlined in response to #1 above. All diverted water is being put to beneficial agriculture use or municipal use, as the diverted water supplies the County of Maui for its Upcountry Maui water systems, the Kula Ag Park, Central Maui fire suppression needs, municipal users who do not currently have access to the County DWS delivery system, and agricultural uses in Central Maui on lands now owned and managed by Mahi Pono. Exhibit A notes system losses and evaporation as water uses.

3. ***Any amount of water diverted under the RPs shall be for reasonable and beneficial use and always in compliance with the interim instream flow standards (IIFS).***

   Status: See responses to #1 and #2 above. In addition, in the fourth quarter of 2022, CWRM ~~made additional amendments to~~amended the IIFS for certain streams in the Huelo license area. ~~There are ongoing proceedings before CWRM to address diversion modifications necessary to effectuate the recent IIFS amendments. Permittees are participating in that ongoing proceeding and have met all applicable deadlines to date.~~Pursuant to the CWRM's decision, certain milestones were established for the submittal of certain permit applications to the CWRM to implement the amended IIFS decision. EMI met the two deadlines set for Q1 2023 and are awaiting the CWRM's processing of those applications.

4. ***Permittee shall provide a report on the progress regarding the removal of diversions and fixing of the pipe issues before the end of the RP term.***

   Status: This permit condition was initially imposed in 2018, and we believe it relates to a pipe at Pualoa (aka Puolua) Stream at the Lowrie Ditch. In a previous status report, we reported that the pipe had been extended to provide wetted pathways for the movement of stream biota on Pualoa Stream. At the 2018 BLNR hearing on the subject RP's (for 2019), statements were made that the pipe needs to be extended further to go under the road and that two 4" rusted pipes needed to be removed. Accordingly (and as reported in previous quarterly reports), the two 4" pipes have since been removed from the watershed and a new design intended to improve fish migration has been incorporated in the diversion modification plan for compliance with the IIFS and approved by the CWRM in its approval of the Category 3 ~~SWUP's~~SDWPA. This specific scope of work was part of the overall work plan referenced earlier.

Road maintenance and repair activities continue in order to better facilitate access to several of the more remote intakes that are subject to Category 2 permits. We have submitted a final plan to CWRM for ~~additional~~the modifications to Category 1 ~~diversions, some of which addresses the removal of diversions which would not impact the structural or operational integrity of the EMI system~~closures intended to restore the streams to as natural a condition as possible. CWRM is in the process of reviewing the plan and discussing its implementation with East Maui community groups.

5. ***Permittee shall cleanup trash and debris from revocable permit areas starting with areas that are accessible and close to streams; "trash and debris" shall be defined as " any loose or dislodged diversion material such as concrete, rebar, steel grating, corrugated metals, railroad tires, etc., that can be removed by hand (or by light equipment that can access the stream as is)".***

Status: The Permittees have established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous fieldwork. In the ~~fourth~~first quarter of ~~2022~~2023, EMI continued to be vigilant about monitoring and removing unused material. ~~In Q4 2022, EMI found additional debris while performing work in remote locations along the EMI system. The debris was~~The debris found in Q4 2022 has been consolidated into a single location and will be removed ~~via~~concurrently with the helicopter ~~in Q1 or Q2 2023~~support necessitated by the remaining Category 2 work.

EMI will also continue removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed, which includes diversion modifications required to meet the 2018 IIFS.

EMI understands the term "Trash and Debris" is further defined as noted in the DLNR staff submittal. As mentioned previously, EMI has established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous field work. EMI also has a practice of removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed. These practices continue to apply to the "Trash and Debris" term as more clearly defined by DLNR staff.

6. ***The RPs shall be subject to any existing or future reservations of water for the Department of Hawaiian Home Lands (DHHL);***

   Status: EMI acknowledges that the RPs shall be subject to any existing or future reservation of water for the DHHL.

7. ***Coordinate with an interim committee to discuss water usage issues in the RP areas. The committee shall consist of seven members, representing EMI/Mahi Pono, Farm Bureau, Office of Hawaiian Affairs, the Native Hawaiian Legal Corporation, the Huelo Community Association, the Sierra Club, and the County of Maui. The interim committee shall meet at least quarterly, more often as useful.***

   Status: The quarterly meeting of the RP Committee was held on ~~Friday, January 27~~Wednesday, April 19, 2023. Jayson Watts (Mahi Pono / EMI) sent an invitation via email to the group on Tuesday, ~~January 24~~April 11, 2023. The meeting was attended by ~~Deputy Director James Landgraf (County of Maui DWS),~~ Lafayette Young (Huelo Community), Ashley Obrey (NHLC / Na Moku), ~~Capsun Poe (OHA~~Jerome Kekiwi Jr. (Na Moku), Lucienne de Naie (Sierra Club), Jayson Watts (Mahi Pono~~ / EMI~~), Mark Vaught (EMI), and Grant Nakama (Mahi Pono~~ / EMI). A representative from the Sierra Club was unable to attend.~~).

   EMI provided an update on the work related to the implementation of the IIFS, and Mahi Pono supplied an update on farming operations. The information provided by Mahi Pono and EMI to the committee generally mirrored the farming and IIFS updates that are included as exhibits to this quarterly report. Mahi Pono and EMI also answered follow-up questions from the Sierra Club about IIFS updates provided. The meeting adjourned approximately ~~30~~45 minutes after it started. The committee's next meeting is tentatively set for July 20, 2023.

8. ***Permittee shall therefore provide quarterly written reports to the Board of Land and Natural Resources (Board) containing (at a minimum) the following information:***

   a. *The amount of water used on a monthly basis, including the monthly amount of water delivered for: the County of Maui Department of Water Supply and the County of Maui Kula Agricultural Park; diversified agriculture; industrial and non-agricultural uses; and reservoir/fire protection/hydroelectric uses. Descriptions of diversified agricultural uses shall also provide information as*

to location, crop, and use of the water. Industrial and non-agricultural uses shall specify the character and purpose of water use and the user of the water;

Status: The amount of water used on a monthly basis, including the monthly amount of water delivered for the County of Maui DWS and Kula Ag Park, diversified agriculture, industrial and non-agricultural uses, and reservoir/fire protection/hydroelectric uses can be found in the table attached as Exhibit A. The existence of and continued use of reservoirs is extremely important for fire safety reasons. They are a major source of water for fighting fires on Maui, which occur during the dry months of the year. The location, crop, and users of agricultural water, and the specifics on industrial and non-agricultural uses can be found in the table attached as Exhibit B.

As Mahi Pono prepares new fields for planting, they continue to install new irrigation systems that focus on efficient water application measures. In addition to these new systems, we are also installing weed mat throughout the farm, which help the soil maintain moisture by reducing evaporation. The cumulative water efficiency effects of these initiatives can be seen in the reduced amount of water remaining in the final column of the table attached as Exhibit A.

b. *An estimate of the system loss for both the EMI ditch system and the A&B field system, also on a monthly basis.*

Status: The accepted Final Environmental Impact Statement which considers East Maui water diversions facilitated by a long-term lease contains estimates for system losses for both the EMI ditch system as well as the "*A&B field system"*.

- EMI Ditch System – As stated in the FEIS, a USGS study "concluded that it was unclear whether net seepage losses even occur in the EMI Aqueduct system, due to the large amount of tunnel in the system, as well as the seepage gains that enter the system."

- A&B Field System – An estimate of the system losses by month is as shown in the table below:

Month	EMI Ditch System (in MGD)	Field System (in MGD)
~~October~~January	0	~~1.91~~1.92
~~November~~February	0	~~2.30~~0.44
~~December~~March	0	~~5.32~~-0.43
Average	0	~~3.17~~0.64

As noted by Condition #2 above, system losses and evaporation shall not be considered as a waste of water.

c. *For each stream that is subject to the 6/20/2018 CWRM D&O, a status update as to the degree to which the flow of each stream has been restored, and which artificial structures have been modified or removed as required by CWRM.*

Status: EMI prioritizes its compliance with the CWRM order and has been working with CWRM staff on implementation plans and permitting. EMI notes that the language of the CWRM order relating to the removal of artificial structures is spelled out on page 269 of the D&O, items i, j, and k which State in part that *"it is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed."* and "The intent of the Commission is to allow for the continued use and viability of the EMI ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS. A status update is provided in the table attached as Exhibit C. Also included in Exhibit C is a copy of the section of the CWRM order relating to the removal of artificial structures.

d. *Update on removal of trash, unused man-made structures, equipment, and debris that serve no useful purpose, including documenting any reports of such items that Permittee has received from the Department, other public or private entities and members of the general public and the action(s) taken by Permittee, if any, to remove the reported items*

Status: See above response to #5 above.

e. *The method and timeline for discontinuing the diversion of water from Waipio and Hanehoi streams into the Ho'olawa stream, including status updates on implementation.*

Status: As the stream levels fluctuate during inclement weather, EMI personnel are dispatched to manually control the intake gates to prevent excess stream water inflow to the ditch. As for Haneho'i, all intakes have been sealed (per the 2018 D&O); therefore, no water enters the ditch from this stream. Regarding the Waipi'o stream, EMI personnel manually control the intakes on the ditch to prevent excess flow from entering the ditch. Thus, all flows to the ditch are delivered to and used by Mahi Pono and the County of Maui. The flows are no longer controlled into Hoolawa stream.

f. *A listing of all reservoirs in the A&B/EMI water system serviced by the RPs, with the following information provided for each:*

The capacity of each such reservoir;

The surface area of each such reservoir;

What fields are irrigated by each such reservoir, or in the alternative, which reservoirs service the County of Maui's domestic needs, Kula Agricultural Park farmers, and DHHL lands;

Which reservoirs are lined, and with what material, and which are not;

The estimated amount of evaporation per day from the surface of each such reservoir;

An analysis of the cost and time to line at least one such reservoir; and

Information on any reservoirs planned to be taken out of service.

Status: A table containing most of the information requested above is attached as Exhibit D. Evaporation estimates are ~~rough estimates~~

based on ~~a number of assumptions (e.g., slope, shape of the reservoir) and~~ actual reservoir water levels during ~~Q4 2022~~Q1 2023, with the figures being displayed in ~~average~~ gallons per day.

In addition to the information in Exhibit D, we have also determined an estimated unit cost of $7.00 per square foot (sloped) to line a reservoir, plus estimated engineering costs typically being between $30k - $60k per reservoir. If we apply these costs to a reservoir with a 10-acre surface area and assumed slope adjustment of 25%, then the resulting estimate would be approximately $3.85M.

g. *The number, location, timing, and approximate acreage of fires fought during the quarter using water from reservoirs supplied with water from the A&B/EMI system.*

Status: There were no fires reported during the ~~fourth~~first quarter of ~~2022~~2023.

h. *The names and locations of the reservoirs from which water was drawn to fight fires during the quarter, together with:*

(i) *Whether those reservoirs are lined or not;*

(ii) *The average depth of water in those reservoirs;*

(iii) *Estimated average monthly inflows and outflows from those reservoirs; and*

(iv) *The amount of water used for hydroelectric purposes, if any.*

Status: There were no fires reported during the ~~fourth~~first quarter of ~~2022~~2023. Permittees will work diligently to record the requested data in the event of future fires.

i. *A listing of all irrigation wells in the A&B/EMI water system serviced by the RPs, with the water levels and chloride levels in each well that is in active use noted.*

Status: In the ~~fourth~~first quarter of ~~2022~~2023, Wells 12, and 13 were in active use. Chloride levels measured during the quarter are provided below:

- *Well #12*
  - *pH – ~~7.5~~7.6 (12A) and ~~7.3~~7.2 (12B)*
  - *Sodium – ~~300~~280 mg/L (12A) and ~~300~~280 mg/L (12B)*
  - *Water Level – 26 Inches*

- *Well #13*
  - *pH – ~~7.7~~7.2 (13A) and ~~7.6~~7.1 (13B)*
  - *Sodium – ~~280~~220 mg/L (13A) and ~~290~~210 mg/L (13B)*
  - *Water Level – 32 Inches*

~~During the quarter, EMI finished installing additional equipment to measure water levels more accurately within the Mahi Pono wells. This was done at a cost of approximately $10k per well. The water levels measured during the quarter are provided below:~~
~~- *Well #12 – 24 Inches*~~
~~- *Well #13 – 30.25 Inches*~~

j. *Each quarterly report shall be submitted in a format with tracked changes that clearly show the differences/updates from the prior quarter.*

Such quarterly reports shall be "due" to the DLNR one month after the last calendar day of the subject quarter. Thus, the reports shall come due as follows:

Q1 Report – April 30, 2022
Q2 Report – July 31, 2022
Q3 Report – October 31, 2022
Q4 Report – January 30, 2023
. . . and so on;

Status: This ~~Q4 2022~~Q1 2023 report is the ~~second~~third version to implement a track-change format vs. the prior quarter. The deadline to submit quarterly reports is noted, and EMI is committed to timely submittals of all future reports.

k. *For water used for agricultural crops, the Permittee shall disclose in each quarterly report how much water was required on average for each type of crop per acre per day for the previous quarter.*[1]

(Added)	Current Acreage	Q1 2023 **Approximate *Irrigation* Average*** *(GPAD = PER ACRE)*
Orchard Crops	7,817	827
Row Crops	461	551
Tropical Fruits	6	779
Energy Crops	32	529
*Figures are representative of irrigation applied during the quarter, which doesn't include rainfall. This is not representative of the crop water requirement, which is partially met to a varying degree (depending on weather) by rainfall.		

9. ***The Permittee may not divert an amount of water exceeding an average of ~~45~~40.49 million gallons per day (mgd), averaged monthly, for all permits combined, further subject to all water diverted shall be for reasonable and beneficial uses.***

Status: The ~~fourth~~first quarter's need for water from the East Maui streams has averaged approximately ~~22.96~~12.80 million gallons per day (MGD), a lower level than expected due to unanticipated levels of rainfall. Only that amount of water that is needed is being diverted from the East Maui watershed. This amount complies with the limit of an average of ~~45~~40.49 MGD, calculated on a monthly basis, set by the BLNR ~~and continues to be well within the bounds of the 45 MGD allocation set by the BLNR in its June 30, 2022 Findings of Fact, Conclusions of Law, Decision & Order in DLNR File No. CCH-LD-21-01.~~at its November 10, 2022 meeting. This water is being used to supply the

[1] This condition was added at the November 10, 2022 BLNR meeting.

County of Maui for its Nahiku and Upcountry Maui water systems, the Kula Ag Park, fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands now owned and managed by Mahi Pono.

10. ***For RP S-7266, the area identified as the Hanawi Natural Area Reserve shall be removed from the revocable permit premises. Additionally, A&B/EMI shall continue discussions with the Department's Division of Forestry and Wildlife ("DOFAW") to identify additional forest reserve lands to be removed from the license areas.***

    Status: Meetings between EMI and DOFAW have been held and were focused on identifying those areas that are essential to EMI's ongoing operations, such as access routes and buffer areas around the EMI ditch system to ensure the reliable and safe operation of the system as well as the safety of EMI employees. The most recent of these meetings ~~was held on Thursday, September 29, 2022, at DOFAW's Kahului offices~~in Q1 2023 were held on Wednesday, January 29, 2023 and February 24, 2023. Both meetings were held via Zoom. EMI has expressed to DOFAW a willingness to reduce the license/lease area as long as the permitted area (a) meets the collective needs of DLNR and DOFAW, (b) continues to allow EMI to operate its ditch system in a safe and efficient manner, and (c) does not affect the access to state water afforded by existing or future RPs and water license/lease(s). DOFAW and EMI ~~will now focus on specifically locating~~have identified preliminary locations for suitable crossing points over the EMI system to State-owned lands located upslope. ~~A site visit with DOFAW representatives to prospective crossing points was originally planned for Q4 2022, but was postponed due to inclement weather.~~ Discussions between EMI and DOFAW ~~will continue in 2023~~ on the reduced lease/license area will continue.

11. ***Mahi Pono is to advise any third-party ~~lessee's~~lessees, that any decisions they make is based on availability of water on a month-to-month basis renewed annually unless there is a permanent lease***

    Status: All third-party lessees have been informed through existing language in their lease agreements that the availability of water is subject to change based on various conditions, one of which would be the nature of the water availability from East Maui through an annually renewed revocable permit or an eventual permanent lease.

12. For the streams in the revocable permit area that have not had interim instream flow standards set, Permittee shall continue to clean up and remove debris from the permit areas and staff shall inspect and report every three months on the progress of the clean-up. For purposes of clean-up, debris shall not include any structure and equipment that is either currently used for the water diversions, or for which CWRM has not required removal.

Status: EMI has continued to remove debris and trash from stream areas. These efforts include locations surrounding the streams located outside of the IIFS area.

13. Permittee shall require its staff to inspect the streams and report on whether the lands could be developed for agricultural land or water leases.

Status: EMI understands that, in general, State-owned land adjacent to streams in East Maui are conservation lands in forest reserves which may not be suitable for agricultural development. An agricultural assessment for the East Maui lands/watershed, including the state-owned lands, was included as part of the environmental impact statement ("FEIS") prepared by the Permittees for the proposed state water lease and accepted by the State. In addition, the FEIS contemplated the use of those lands as a collection area for a state water lease.

14. The RPs shall also comply with all conditions required by the 6/20/2018 CWRM D&O, which includes meeting the IIFS set forth in paragraph "h" of the "Decision and Order " section of the D&O. That paragraph provides a chart showing the name of the stream, the restoration status, the amended IIFS value, and an IIFS location, if applicable, for each stream, as follows:

Stream Name	Restoration Status	BFQs at IIFS (cfs)	IIFS Value (cfs)	IIFS Location
Makapipi	Full	1.3	n/a	Above Hana Highway
Hanawi	Connectivity	4.6	0.92	Below Hana Highway
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch
Waiaaka	None	0.77	0.77	Above Hana Highway
Pa'akea	Connectivit	0.9	0.18	At Hana Highway

	y			
Waiohue	Full	5.0	n/a	At Hana Highway
Pua'aka'a	Connectivity	0.9	0.18	Above Hana Highway
Kopiliula	H90	5.0	3.2	Below Hana Highway
East Wailuaiki	H9o	5.8	3.7	At Hana Highway
West Wailuaiki	Full	6.0	n/a	Above Hana Highway
Wailuanui	Full	6.1	n/a	At Hana Highway
Ohia/Waianu	None	4.7	n/a	None.
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch
Palauhulu	Full	11	n/a	Above Hana Highway
Pi'ina'au	Full	14	n/a	Above Hana Highway
Nua'ailua	Connectivity	0.28	2.2	To be determined
Honomanu	H9o	4.2	4.2	Above Hana Highway
Punalau/Kolea	H9o	4.5	2.9	Above Hana Highway
Ha'ipua'ena	Connectivity	4.9	1.36	Below Hana Highway
Puohokamoa	Connectivity	8.4	1.1	Above Hana Highway
Wahinepe'e	None	0.9	0.9	Above Hana Highway
Waikamoi	H9o	6.7	3.8	Above Hana Highway
Hanehoi	Full	2.54	n/a	Upstream of Lowrie Ditch
Huelo (Puolua)	Full	1.47	n/a	Downstream of Haiku Ditch
Honopou	Full	6.5	n/a	Below Hana Highway

Status: See response to #1 above.

15. ***Permittee shall cooperate with CWRM and the Department's Division of Aquatic Resources (DAR) in facilitating studies, site inspections and other actions as necessary to address the streams in the RP areas that are not covered by the 6/20/2018 CWRM D&O.***

Status: EMI ~~is~~continues to be in contact with CWRM personnel regarding site visits to evaluate diversions that weren't covered by the 2018 D&O. Such site visits ~~have~~most recently occurred in Q1 ~~2022 and Q2~~2023, related to the amendment of the Huelo

Streams IIFS passed by CWRM in 2022. CWRM field staff conducts these site visits on a stream-by-stream basis. EMI has previously contacted DAR and has expressed willingness to cooperate with any DAR activities related to the DAR work on streams outside the license area.

16. ***Permittee shall work with CWRM and DOFAW to determine whether there are alternatives to diversion removal that effectively prevent mosquito breeding and can be feasibly implemented. Permittee shall include the status of alternatives in its quarterly reports.***

Status: EMI has worked with CWRM in the context of the earlier discussion with DOFAW regarding diversion structures that can impede free flow of water and create habitat for mosquito breeding. Considerable evaluation and analysis have been conducted by the CWRM and EMI on nine "Category 1" diversions regarding additional work to be done on these diversions to mitigate these issues. CWRM will meet with stakeholders to discuss this mitigation plan and report back to EMI as to the additional diversion modification work to be undertaken.

17. ***If the Board finds that a use of water is not reasonable and beneficial and does not comply with the permitted uses, Permittee shall cease such use within a timeframe as determined by the Department of Land and Natural Resources (Department).***

Status: EMI remains willing to comply with this requirement and stands ready to assist the Board in any way it can regarding this matter.

18. ***For water used for agricultural crops, Permittee is to estimate how much water is required for each crop per acre per day.***

Status: Water requirements for each crop is highly dependent on several factors, including soil composition, weather, and the maturity of the crop itself. That said, the average water requirements for Mahi Pono's agricultural crops at full maturity are estimated to be as follows:

- Orchard Crops - 5,089 gallons per acre per day
- Row Crops - 3,392 gallons per acre per day
- Tropical Fruits - 4,999 gallons per acre per day
- Energy Crops - 3,392 gallons per acre per day

These estimates are consistent with the estimated water requirements contained in Table 3 of Appendix I (Agricultural and related Economic Impacts) of the EIS. The average water requirements listed above are reflective of the crops' collective water needs (irrigation & rainfall) at full maturity. This differs from the reported irrigation average, which is reflective of the irrigation consumption (excluding rainfall) of immature crops.

19. ***Permittee shall submit to the Department a plan for their proposed upgrades, including an implementation timeline, to the irrigation system intended to address CWRM' s concerns no later than December 1, 2022. Permittee is to work with the Maui Fire Department to determine what their exact needs are.***

Status: The Mahi Pono System Efficiency Upgrades Report was submitted to the BLNR on November 30, 2022. A supplemental report requested by the BLNR containing additional information on system losses was also submitted on March 24, 2023.

An updated response to the Permittees' request for information regarding the department's requirements is attached as Exhibit E. Permittees will continue to work with the Maui Fire Department and will report on any future developments that may allow for additional estimates to be shared.

20. ***Permittee shall pay the monthly rent amounts as determined by the Board; the ~~2021~~2023 monthly rent amounts shall be those ~~recommended by Department staff in their written submittal to~~set by the Board ~~regarding Item #D-8 on the Board's November 13, 2020~~at its December 8, 2022 meeting ~~agenda~~.***

Status: EMI has remained current in its payment of rent to the State for the subject revocable permits.

21. ***Permittee shall look into supplying the Maui Invasive Species Committee with water, and if feasible, and despite it not being an agricultural use, be considered a reasonable and beneficial and permitted use under the RP.***

Status: EMI/Mahi Pono ~~maintains ongoing discussions with MISC regarding their need for water to conduct invasive species removal. We continue to discuss additional options for this.~~have successfully provided MISC with water to support their operations starting in Q1 2023. The water used by MISC during Q1 2023 is projected to be minimal (and

accounted for in the "*Other"* column in Exhibit A), but EMI is in the process of metering the MISC's water use. That meter should be installed in Q2 2023.

22. ***DOFAW shall discuss with Maui Fire Department and report to the Board at the next RP renewal whether ocean water can feasibly be substituted for some of the firefighting needs. Effects of applying ocean water shall also be considered.***

    This condition is not applicable to A&B/EMI. It has been included in this report for completeness.

23. ***At or before the next renewal of the RP 's, or before a request for authorization to lease water rights at public auction, at a scheduled meeting of the Board, the Permittees shall cooperate with the Department's Land Division and DOFAW, who the Board directs to bring a proposed watershed management fee and/or requirements for the Permittees to implement management actions in the watershed.***

    Status: EMI will cooperate with the Department's Land Division and DOFAW on the development of their proposal related to watershed management. ~~Although not part of Q4 activity, as information, the~~The Permittees met with DOFAW on January 11, 2023, where DOFAW presented its current draft of a watershed management plan for East Maui and fee concepts. ~~Discussions will continue.~~ The Permittees responded with a list of follow-up questions seeking additional clarity from DOFAW on some of the concepts proposed in the preliminary draft of its WMP. The Permittees continued to follow-up with DOFAW throughout the quarter and received a response consisting of an updated draft on April 19, 2023. The Permittees are still evaluating the changes proposed by this most recent draft. The Permittees will continue to work with DOFAW/DLNR on a fair and equitable WMP and associated fee.

EXHIBIT A – MONTHLY WATER USAGE

All Figures in Millions of Gallons per Day ("MGD")

~~Month~~	~~East Maui Surface Water @ Honopou~~	~~East Maui Surface Water Gained from Area Between Honopou and Maliko~~	~~Groundwater Pumped on-Farm~~	~~County of Maui DWS[1]~~	~~County of Maui Ag Park[2]~~	~~Diversified Agriculture[3]~~	~~Historic / Industrial Uses[4]~~	~~Reservoir / Seepage / Fire Protection / Evaporation / Dust Control / Hydroelectric[5]~~	
								~~Diverted Reserve to meet Contractual Obligation to County DWS & Ag Park[6]~~	~~Other[7]~~
~~October~~	~~19.14~~	~~4.79~~	~~3.95~~	~~2.23~~	~~0.59~~	~~18.48~~	~~0.05~~	~~4.68~~	~~1.91~~
~~November~~	~~26.48~~	~~0.99~~	~~2.73~~	~~1.49~~	~~0.51~~	~~20.36~~	~~0.05~~	~~5.50~~	~~2.30~~
~~December~~	~~23.27~~	~~0.00~~	~~0.87~~	~~1.26~~	~~0.65~~	~~11.29~~	~~0.03~~	~~5.59~~	~~5.32~~
~~**Quarterly Average**~~	~~**22.96**~~	~~**1.93**~~	~~**2.52**~~	~~**1.66**~~	~~**0.58**~~	~~**16.69**~~	~~**0.04**~~	~~**5.26**~~	~~**3.17**~~

(Added) Month	East Maui Surface Water @ Honopou	East Maui Surface Water Gained from Area Between Honopou and Maliko	Groundwater Pumped on-Farm	County of Maui DWS [1]	County of Maui Ag Park [2]	Diversified Agriculture [3]	Historic / Industrial Uses [4]	Reservoir / Seepage / Fire Protection / Evaporation / Dust Control / Hydroelectric [5]	
								Diverted Reserve to meet Contractual Obligation to County DWS & Ag Park [6]	Other [7]
January	15.57	0.67	2.92	2.57	0.46	9.72	0.03	4.46	1.92
February	10.60	0.96	0.00	1.22	0.29	3.59	0.03	6.00	0.44
March	12.24	1.32	0.48	1.50	0.39	6.92	0.04	5.62	-0.43
Quarterly Average	**12.80**	**0.25**	**1.13**	**1.76**	**0.38**	**6.74**	**0.03**	**5.36**	**0.64**

1. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

2. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

3. Diversified Agriculture includes the users/uses described in Exhibit B.

4. Historical/Industrial Uses are non-HC&S uses that have historically relied on water from the EMI Ditch System, even after the closure of HC&S. These include uses by entities located either adjacent to or within the

boundaries of the farm and are further described in Exhibit B. Historically, the use of water by these entities was not regularly metered, and a historical estimate of 1.1 MGD was developed and previously used as the amount of collective water consumption by these entities. Mahi Pono installed meters in March 2022 thus, starting with the Q2 2022 report, the figures reported in this column will reflect actual usage based on those meters. As previously mentioned, HC&D's water usage is no longer accounted for in this column as HC&D is obtaining water from its own well.

5. The numbers in these columns include water not separately accounted for in the columns to the left. The EMI system is operated in a manner that ensures continuous water availability in the reservoirs to meet the County of Maui's needs for fire protection for brush fires, the risk of which has increased due to the reduction of the irrigated acreage following the cessation of sugar cultivation but is decreasing as Mahi Pono continues to implement its farm plan. Seepage and evaporation are also included in this column. The water used by the Mahi Pono hydroelectric system is non-consumptive and is returned to the ditch after being used to generate clean energy. The water is re-used consumptively by one of the other uses, or if there is no reuse, ends up in the reservoirs.

6. Operationally and pursuant to a contractual agreement with the County of Maui, a minimum of approximately 6 MGD must be reliably conveyed to / made available to the County each and every day so that the County has flexibility regarding when to run its plant depending on weather conditions, demand, water available from its Piiholo plant, etc. Additionally, a minimum of approximately 1.5 MGD must be reliably conveyed to / made available to the County each and every day so that the County can be flexible regarding how to meet the needs of the Ag Park. The numbers in this sub-column reflect the portion of the 7.5 MGD that is made available to the County every day, that the County does not use (i.e., 7.5mgd less the sum of the amounts used by the County DWS at Kamole Weir and Ag Park). Water that is not used by the County remains in the Ditch System and is directed to reservoirs located on the former plantation.

7. The numbers in these columns reflect the amount of water not separately accounted for in the columns entitled "County of Maui DWS," "County of Maui Ag Park," "Diversified Agriculture," and "Historic/Industrial Uses" less the reserve needed to meet EMI's contractual obligations to the County of Maui. As has been explained in the past, although EMI/Mahi Pono cannot rely on receiving any specific amount of the diverted reserve to meet the contractual obligation to the County DWS and Kula Ag Park that is not actually consumed by the County ("Diverted Reserve") for purposes of planning to meet the irrigation needs of Mahi Pono's crops, EMI/Mahi Pono do make an effort to use the Diverted Reserve when feasible. The negative number in this column for the month of March reflects EMI/Mahi Pono's use of a portion of the Diverted Reserve in the month of March for irrigation purposes.

EXHIBIT B – WATER USAGE SPECIFICS

Diversified Agriculture Use

Entity	Crop	Field	Acreage
Mahi Pono	Citrus	300	305
Mahi Pono	Coffee	301	273
Mahi Pono	Citrus	303	161
Maui Best (Tenant)	Sweet Potato	408	281
Maui Best (Tenant)	Sweet Potato	409	180
Mahi Pono	Citrus	501	83
Mahi Pono	Citrus	502	290
Mahi Pono	Citrus	503	144
Mahi Pono	Citrus	504	294
Mahi Pono	Citrus	505	240
Mahi Pono	Citrus	507	189
Mahi Pono	Citrus	508	183
Mahi Pono	Citrus	508B	213
Mahi Pono	Citrus	509	79
Mahi Pono	Citrus	510	181
Mahi Pono	Citrus	511	161
Mahi Pono	Citrus	512	132
Mahi Pono	Citrus	602	196
Mahi Pono	Citrus	603	262
Mahi Pono	Citrus	604	343
Mahi Pono	Citrus	605	394
Mahi Pono	Citrus	606	134
Mahi Pono	Mixed	608	70
Mahi Pono	Citrus	610	40
Mahi Pono	Citrus	701	269
Mahi Pono	Citrus	702	232
Mahi Pono	Citrus	703	150
Mahi Pono	Citrus	704	214
Mahi Pono	Citrus	708	299
Mahi Pono	Citrus	800	100
Mahi Pono	Citrus	801	281
Mahi Pono	Citrus	803A	127
Mahi Pono	Pongamia	803B	32
Mahi Pono	Avocado	803C	6
Mahi Pono	Coffee	807	120
Mahi Pono	Mixed	807	39
Mahi Pono	Citrus	808	158
Mahi Pono	Citrus	809	251
Mahi Pono	Citrus	809X	72
Mahi Pono	Citrus	813	448
Mahi Pono	Citrus	814	342
Mahi Pono	Citrus	818	266
Mahi Pono	Citrus	911	82
TOTAL			***8316***

Water Users	Source/Delivery Point	Water User's Location	Relationship to EMI / A&B / Mahi Pono	Use
Imua Energy Maui LLC, dba Maul EKO Systems LLC (Tenant of County Central Maui Landfill)	Pumped from Haiku Ditch	3-8-003-019	Gov't Tenant	General Use for Compost Operation
HC&S Mill Area Fire Suppression	702 Cistern	3-8-006-001 CPR #I	A&B - Owned	Fire suppression for ag offices & Puunene Post Office
New Leaf Ranch (Non-Profit)	702 Cistern	3-8-006-029	Tenant	Irrigation water for non-profit providing ag-related work opportunities and training as mental health & substance use dependency treatment
Costo Maddela	Haiku Ditch	3-8-001-001	Tenant	Pasture & Animal Water
Harriet, Michael & Jordan Santos	Kauhikoa Ditch	2-5-001-018 & 019	Tenant	Pasture & Animal Water
Leonard Pagan	Kauhikoa Ditch	2-5-002-001	Tenant	Pasture & Animal Water
Harry Cambra	Kauhikoa Ditch	2-5-003-026,027,036,037,038	Tenant	Pasture & Animal Water

EXHIBIT C – CWRM ORDER STATUS UPDATE

Section i, j, & k from CWRM D&O

i. It is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed.

j. This Order does not require that every diversion on every tributary be removed or modified, the Commission is only looking at modifications to main stem and major diversions to accomplish the amended IIFS set forth above. The Commission also recognizes that it is not the purpose of this proceeding to determine how the diversions will be modified. That issue will be before the Commission in a subsequent process.

k. The intent of the Commission is to allow for the continued use and viability of the EMI Ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS.

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EXHIBIT C – CWRM ORDER STATUS UPDATE (Continued)

IIFS STREAM UPDATE

Stream Name	Restoration Status	BFQ50 at IIFS (cfs)	IIFS Value (cfs)	IIFS Location	Current Status
Makapipi	Full	1.3	n/a	Above Hana Highway	Gate removed, water flowing downstream below intake
Hanawi	Connectivity	4.6	0.92	Below Hana Highway	Gate open, water flowing downstream below intake
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch	Main gate open, water flowing downstream below intake
Waiaaka	None	0.77	0.77	Above Hana Highway	Gate open, water flowing downstream below intake
Pa'akea	Connectivity	0.9	0.18	At Hana Highway	Intake gate closed, water flowing downstream over dam
Waiohue	Full	5	n/a	At Hana Highway	Intake gate closed, sluice gate removed. All water flowing downstream.
Pua'aka'a	Connectivity	1.1	0.2	Above Hana Highway	Gate open, water flowing downstream below intake
Kopiliula	H90	5	3.2	Below Hana Highway	Main gates open, ditch control gates closed. Water flowing downstream.
East Wailuaiki	H90	5.8	3.7	At Hana Highway	Gates open, water flowing downstream below intake
West Wailuaiki	Full	6	n/a	Above Hana Highway	Gates open, water flowing downstream below intake
Wailuanui	Full	6.1	n/a	At Hana Highway	All intakes sealed (Category 1) water flowing downstream below intake
Ohi'a/Waianu	None	4.7	n/a	None	No diversion
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch	All intakes closed, water flowing downstream
Palauhulu	Full	11	n/a	Above Hana Highway	All water either passing intakes or flowing out of the Kano sluice gate. Water flowing downstream.
Pi'ina'au	Full	14	n/a	Above Hana Highway	Intake sealed, water flowing downstream.
Nua'ailua	Connectivity	0.28	2.2	To Be Determined	Intake gate closed, water flowing downstream over dam
Honomanu	H90	4.2	4.2	Above Hana Highway	All 4 diversion sluice gates are open, water flowing downstream
Punalau/Koolea	H90	4.5	2.9	Above Hana Highway	Sluice gate open, water flowing downstream below intake
Haipua'ena	Connectivity	4.9	1.36	Below Hana Highway	Intake gate closed, water flowing downstream, dam will require modification
Puohokamoa	Connectivity	8.4	1.1	Below Hana Highway	Intake gate will be used to ensure water flowing downstream, intake dam will require significant modification
Wahinepee	None	0.9	0.9	Above Hana Highway	No diversion. Water flowing downstream.
Waikamoi	H90	6.7	3.8	Above Hana Highway	Center ditch sluice gate open. Water flowing downstream.
Hanehoi	Full	2.54	n/a	Upstream of Lowrie Ditch	Intakes sealed. Water flowing downstream.
Huelo (Puolua)	Full	1.47	n/a	Downstream of Haiku Ditch	Lowrie intake will require significant modifications & corresponding permit approvals / Haiku intake sealed
Honopou	Full	6.5	n/a	Below Hana Highway	Three sluice gates open, one intake sealed. One of two Wailole intakes sealed, water flowing downstream

EXHIBIT D – RESERVOIR INFORMATION

EXHIBIT D

(Modified graphics)

Reservoir No.	Tax Map Key	Capacity Million Gallons	Surface Surface area/Acres	Fields Feed by Reservoir	Lined	Type Material	Evaporation Rate (Average Gal/Day)****
14	2-5-04:39	9.50	1.50	100; 101	No	Earthen	~~2328~~
15	2-5-04:39	8.30	1.10	101	No	Earthen	0
20	2-5-03:10	48.80	10.20	312; 314	No	Earthen	0
21	2-5-04:39	18.60	6.90	111; 113; 200	No	Earthen	0
22	2-5-03:10	43.80	10.60	201; 202	No	Earthen	0
24	2-5-03:10	15.00	3.60	201	Yes	Concrete	0
25	2-5-03:09	40.20	9.70	205	No	Earthen	~~45,036~~
30	2-5-03:01	21.00	9.00	300; 312	No	Earthen	0
33	2-5-02:02	46.50	8.00	304; 304; 313	No	Earthen	~~32,442~~
40	2-5-02:01	62.80	13.50	410; 400; 401; 413 (County Use)	No	Earthen	~~69,240~~
42	2-5-02:01	10.40	3.20	400; 401; 403	No	Earthen	~~14,830~~
52	3-8-03:04	74.60	20.00	504; 511	No	Earthen	0
60	3-8-01:06	80.50	20.80	600; 611	No	Earthen	~~5,080~~
61	3-8-01:01	53.10	9.00	604	No	Earthen	~~43,828~~
70	3-8-01:01	19.30	5.00	Mud Pile 710	No	Earthen	0
80	3-8-03:02	41.10	12.00	800; 801	No	Earthen	0
81	3-8-04:22	36.70	13.80	803 805 808 809	No	Earthen	~~55,697~~
82	3-8-04:22	17.90	7.40	810; 811; (812; 815; 816; 818; 819; 822; 823; Res. Ditch)	No	Earthen	0
84	3-8-03:02	35.10	8.00	701; 702; 703; (807; 813; 814; Res. Ditch)	No	Earthen	~~10,873~~
90	3-8-08:05	45.00	15.80	737; 761; 915; 917	No	Earthen	~~99,666~~
Haiku	(2)2-7-003:055 & 081	57.9	27.30	Haiku Ditch	No	Earthen	0
Pauwela	(2)2-7-003:030 & 056/2-7-008:038	32.5	6.80	Haiku Ditch	No	Earthen	0
Peahi	(2)2-8-002:018	22	5.80	Haiku Ditch	No	Earthen	0
Kapalaalaea	(2)2-8-007:001	49.7	8.70	Haiku Ditch	No	Earthen	0
Papaaea	(2)2-9-014:004	42.5	9.00	Center Ditch to Lowrie Ditch	No	Earthen	Unregulated/Rarely Used
9	2-5-004:039	1.00	NA	110	No	Earthen	Unregulated/Rarely Used
10	2-5-004:039	9.50	NA	116	No	Earthen	Unregulated/Rarely Used
12	2-5-004:039	9.00	6.70	109	No	Earthen	Unregulated/Rarely Used
23	2-5-005:019	13.70	NA	200	Yes*	Concrete/rubber	Unregulated/Rarely Used
26	2-5-005:019	10.10	NA	208	No	Earthen	Unregulated/Rarely Used
29	2-5-005:019	9.90	NA	213	No	Earthen	Unregulated/Rarely Used
31	2-5-003:031	5.10	NA	303	No	Earthen	Unregulated/Rarely Used
32	2-5-002:002	9.80	NA	304	No	Earthen	Unregulated/Rarely Used
34	2-5-003:010	8.10	NA	306	No	Earthen	Unregulated/Rarely Used
35	2-5-002:002	15.00	5.40	310; 311; 505	No	Earthen	Unregulated/Used Sparingly
41	2-5-002:001	8.90	NA	402; 404	No	Earthen	Unregulated/Rarely Used
43	2-5-001:001	13.50	4.00	409; 404	No	Earthen	Unregulated/Rarely Used
44	2-5-001:008	3.60	NA	Above 417;	No	Earthen	Unregulated/Rarely Used
45	2-5-001:008	4.20	NA	415; 414; 418	Yes	Concrete	Unregulated/Rarely Used
50	3-8-003:005	8.40	NA	209; 500; 507; 508	No	Earthen	Unregulated/Used Sparingly
51	3-8-003:004	15.20	NA	502; 505	No	Earthen	Unregulated/Rarely Used
83	3-8-004:002	6.40	4.70	817; 821	No	Earthen	Unregulated/Rarely Used

Not all reservoirs are currently in use.
*Reservoir 23 was lined with concrete/rubber. Lining is currently deteriorated.
**Kaupakalua decommissioned in 2021/2022.
***Kapalaalaea decommissioning project begins in 2023.
****Evaporation rate is the average gallons per day evaporation for the quarter

Unregulated/Used Sparingly = In and out water ~1 day
Unregulated/Rarely Used = Passthrough only

MICHAEL P. VICTORINO
Mayor
BRADFORD K. VENTURA
Fire Chief
GAVIN L.M. FUJIOKA
Deputy Fire Chief

DEPARTMENT OF FIRE & PUBLIC SAFETY
COUNTY OF MAUI
200 DAIRY ROAD
KAHULUI, HI 96732

October 11, 2022

Ms. Suzanne D. Case
State of Hawai'i
Department of Land and Natural Resources
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Subject: **Estimate for Water Requirement for Fire Response by the County of Maui, Department of Fire and Public Safety**

Dear Ms. Case,

This letter is in response to a request to provide information regarding the estimate for water to be used in response to a brush fire arising in the central valley of Maui. Whether or not fire exists on public or private lands, it is our mission to protect life and property.

As you may know, Mahi Pono's farm is a vital source of water in the majority of the areas in and around Central Maui. From filling our tankers and mobile bladders to Air One dipping water from surrounding reservoirs, the water from the Mahi Pono farm is a critical part of our ability to execute our emergency plans in the event of a brush fire.

An estimate of our water usage during an emergency response depends on several different things, including – but not limited to – the size and location of the fire, the fuel load, proximity to other non-farm sources, weather conditions (wind speed and direction), and the time of day (helicopters do not assist in darkness for safety reasons). Most importantly, water usage is affected by the proximity of the fire relative to residences, property, and human life, which in an emergency situation, must be considered the highest priority. Given all of the above-mentioned variables, it would be exceedingly difficult to accurately estimate the amount of water necessary to bring the fire under control.

A letter was submitted on June 22, 2021, detailing the amount of water that could be used by each fire apparatus on a per hour basis in response to a wildland fire, however, the total amount of hours of use for each apparatus is directly related to the many factors mentioned above.

A copy of the June 22, 2021, letter is attached for your reference.

Sincerely,

HENRY LINDO, Jr.
Assistant Chief of Operations

Summary report: **Litera Compare for Word 11.3.0.46 Document comparison done on 4/28/2023 4:19:21 PM**	
Style name: Default Style	
Intelligent Table Comparison: Active	
Original DMS: iw://work.cades.com/IMANAGEDB/7036049/3	
Modified filename: RP Quarterly Report - Q1 2023 FINAL CLEAN(7767217.1).docx	
Changes:	
Add	109
~~Delete~~	94
~~Move From~~	4
Move To	4
Table Insert	0
~~Table Delete~~	1
Table moves to	0
~~Table moves from~~	0
Embedded Graphics (Visio, ChemDraw, Images etc.)	3
Embedded Excel	0
Format changes	0
Total Changes:	215

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 791628, PAIA, MAUI, HAWAI'I 96779-1628 • (808) 579-9516

July 28, 2023

The Honorable Dawn Chang, Chair
and Members of the Board of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

RE: Holdover of Revocable Permits Nos. S-7263, S-7264, and S-7265 issued to Alexander & Baldwin, Inc. ("A&B") and Revocable Permit No. S-7266 issued to East Maui Irrigation Company, Limited ("EMI") for Water Use on the Island of Maui: Q2 2023 Status Report

Dear Chair Chang:

The purpose of this letter is to provide the 2nd quarter status report on A&B/EMI's compliance with permit conditions imposed by the Board of Land and Natural Resources ("***BLNR***") as part of its approval of the holdover of Revocable Permits Nos. S-7263, S-7264, and S-7265 issued to A&B and Revocable Permit No. S-7266 issued to EMI for the calendar year 2023, as approved by the BLNR at its November 10, 2022 meeting. In accordance with the existing permit conditions, we are submitting a clean version of the 2nd quarter report, along with a version which tracks changes against the quarterly report submitted for Q1 2023. The attached documents list each of the permit conditions and corresponding compliance actions undertaken as of June 30, 2022.

Since the last report that was submitted, water collection enabled by these East Maui revocable permits continued to serve the needs of the public water systems that serve Upcountry Maui and Nahiku, both owned and operated by the County of Maui Department of Water Supply, as well as the County's Kula Ag Park, the Maui Invasive Species Committee, and increasing diversified agricultural activities in Central Maui undertaken by Mahi Pono. Maintaining these Central Maui lands in agriculture is consistent with the state's constitutional mandates to conserve and protect important agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agriculturally suitable lands, as well as the Hawaii State Plan, Maui Countywide Policy Plan, Maui Island Plan, and Maui community plans.

These uses of East Maui stream water are further recognized and confirmed by the June 20, 2018, Interim In-stream Flow Standard ("***IIFS***") decision issued by the Commission on Water Resource Management ("***CWRM***") for East Maui streams, 24 of which are within the area covered by the East Maui R.P.'s. The diversion and use of East Maui stream water during this quarter has been in compliance with the CWRM's June 2018 IIFS decision. In addition, in Q4 2022, CWRM amended the IIFS for certain streams in the Huelo license area. Pursuant to CWRM's decision, milestones were established for the submittal of certain permit applications to CWRM to implement the amended IIFS decision. EMI met the two deadlines set in Q1 2023 and are awaiting CWRM's processing of those applications.

EXHIBIT C

As info, although outside of the timeframe of this Q2 report, a meeting of the “interim committee” referenced in permit condition (7) in the 2022 D&O was held via video conference on July 26, 2023. Updates relating to the IIFS, EIS, and Mahi Pono's farming operations were provided to the Committee. The Q3 2023 meeting is scheduled for October 19, 2023.

Please do not hesitate to contact us should you have any questions on the attached permit compliance status report.

Sincerely,

Meredith J. Ching, A&B

Mark Vaught, EMI

cc: Ian Hirokawa, DLNR Land Division (via email)

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 791628, PAIA, MAUI, HAWAI'I 96779-1628 • (808) 579-9516

BLNR CONDITIONS FOR HOLDOVER OF EAST MAUI WATER PERMITS
STATUS OF COMPLIANCE AS OF JUNE 30, 2023

CONDITIONS PER THE FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION & ORDER

1. ***Require the revocable permits at issue- S-7263 (Honomanu), S-7264 (Huelo), S- 7265 (Ke'anae) , and S-7266 (Nahiku) (collectively, the "RPs") to incorporate the Commission on Water Resource Management's ("CWRM") June 20, 2018 Findings of Fact , Conclusions of Law, and Decision & Order ("6/20/2018 CWRM D&O"). Diversion of surface water from the streams listed in the 6/20/2018 CWRM D&O shall be in accordance therewith, and so shall the timing for cessation of diversions, as necessary.***

   Status: The need for water from the East Maui streams averaged approximately 18.27 million gallons per day (MGD) during the second quarter of 2023. This amount continues to be well within the bounds of the 2018 IIFS decision concerning total quantity and the use of specific streams. It is also less than the 40.49 MGD cap, calculated on a monthly basis, set by the BLNR at its November 10, 2022, meeting and the 31.50 MGD modified cap imposed by Judge Crabtree in his June 16, 2023 Decision on Appeal; and Interim Modification of Permits Pursuant to HRS 91-14(g) and July 14, 2023 Decision on Appeal and Order.

   The water that was diverted in Q2 2023 continued to supply the County of Maui for its Upcountry Maui water system, the Kula Ag Park, the Maui Invasive Species Committee, as well as fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands now owned and managed by Mahi Pono.

   During Q2 2023, Mahi Pono focused on the maintenance of existing crops and preparing new areas for planting later this year. We also planted an additional 546 acres of orchard and row crops, and as of June 30, 2023, the planted acreage in Mahi Pono's **East Maui fields** is 8,862 acres. As planned, Mahi Pono anticipates further accelerating planting operations in Q3 & Q4 2023 with the planting of an additional 1,568 acres. A corresponding increase in water applications is also expected. The Permittees – and by extension, Mahi Pono –

remain committed to the efficient use of East Maui stream water. Mahi Pono's total amount of water usage, together with that of the County of Maui, will not exceed the limits of the IIFS decision at any point during its expansion.

All initial approvals have been received from the CWRM to abandon the diversions on the "taro streams" to fully restore their streamflow permanently, as offered by EMI, over and above the IIFS. EMI received Department of Health approval of the Best Management Practices Plan for the Category 2 diversions. Construction on fourteen of the intakes has been completed, with the final phase of construction taking place on the last remaining intake. The final construction materials were delivered via helicopter on June 28, 2023, and we anticipate completing the remaining work on the final intake in August 2023.

The Permittees have also initiated discussions with CWRM staff on IIFS compliance for the 'non-taro streams' that were part of the 2018 IIFS decision. A draft work plan was submitted to CWRM for 41 diversions on 17 additional streams that are implicated by the 2018 IIFS decision. Before issuing the needed permits to undertake the work, CWRM will need to conduct site visits to each diversion site. In the meantime, the Permittees comply with the IIFS decision regarding instream flow requirements (i.e., by individual streams and the total quantity of flow). This compliance is subject to CWRM staff verification. Connectivity requirements of the IIFS decision are being met to the extent possible without the physical modifications that require governmental reviews and approvals. The draft work plan transmitted by the Permittees to the CWRM does address means of achieving full connectivity compliance for these additional non-taro streams.

In summary, the Permittees' diversion of water under the subject 2023 RPs continues to comply with the CWRM's June 20, 2018, IIFS order concerning flow volumes, by individual streams, compliance with connectivity requirements has been met to the extent legally possible without further governmental review and approvals. Significant progress has been made on pursuing the modifications and abandonment of diversions on the seven 'taro streams,' an established and continued priority for both the permittees and the State.

2. ***There shall be no waste of water. System losses and evaporation shall not be considered as a waste of water.***

   Status: See uses outlined in response to #1 above. All diverted water is being put to beneficial agriculture use or municipal use, as the diverted water supplies the County of Maui for its Upcountry Maui water systems, the Kula Ag Park, Central Maui fire suppression needs, municipal users who do not currently have access to the County DWS delivery system, and agricultural uses in Central Maui on lands now owned and managed by Mahi Pono. Exhibit A notes system losses and evaporation as water uses, as they are an essential element of transporting water in a agricultural ditch system to the end users.

3. ***Any amount of water diverted under the RPs shall be for reasonable and beneficial use and always in compliance with the interim instream flow standards (IIFS).***

   Status: See responses to #1 and #2 above. In addition, in the fourth quarter of 2022, CWRM amended the IIFS for certain streams in the Huelo license area. Pursuant to the CWRM's decision, certain milestones were established for the submittal of certain permit applications to the CWRM to implement the amended IIFS decision. EMI met the two deadlines set for Q1 2023 and are awaiting the CWRM's processing of those applications.

4. ***Permittee shall provide a report on the progress regarding the removal of diversions and fixing of the pipe issues before the end of the RP term.***

   Status: This permit condition was initially imposed in 2018, and we believe it relates to a pipe at Pualoa (aka Puolua) Stream at the Lowrie Ditch. In a previous status report, we reported that the pipe had been extended to provide wetted pathways for the movement of stream biota on Pualoa Stream. At the 2018 BLNR hearing on the subject RP's (for 2019), statements were made that the pipe needs to be extended further to go under the road and that two 4" rusted pipes needed to be removed. Accordingly (and as reported in previous quarterly reports), the two 4" pipes have since been removed from the watershed and a new design intended to improve fish migration has been incorporated in the diversion modification plan for compliance with the IIFS and approved by the

CWRM in its approval of the Category 3 SDWPA. This specific scope of work was part of the overall work plan referenced earlier.

Road maintenance and repair activities continue in order to better facilitate access to several of the more remote intakes that are subject to Category 2 permits. We have submitted a final plan to CWRM for the modifications to Category 1 closures intended to restore the streams to as natural a condition as possible. CWRM is in the process of reviewing the plan and discussing its implementation with East Maui community groups.

5. ***Permittee shall cleanup trash and debris from revocable permit areas starting with areas that are accessible and close to streams; "trash and debris" shall be defined as " any loose or dislodged diversion material such as concrete, rebar, steel grating, corrugated metals, railroad tires, etc., that can be removed by hand (or by light equipment that can access the stream as is)".***

Status: The Permittees have established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous fieldwork. In the second quarter of 2023, EMI continued to be vigilant about monitoring and removing unused material. The debris found in Q4 2022 was consolidated into a single location in Q1 2023, and removed in Q2 2023. Pictures of the removed debris are included as Exhibit F.

EMI will also continue removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed, which includes diversion modifications required to meet the 2018 IIFS.

EMI understands the term "Trash and Debris" is further defined as noted in the DLNR staff submittal. As mentioned previously, EMI has established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine

maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous field work. EMI also has a practice of removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed. These practices continue to apply to the "Trash and Debris" term as more clearly defined by DLNR staff.

6. ***The RPs shall be subject to any existing or future reservations of water for the Department of Hawaiian Home Lands (DHHL);***

   Status: EMI acknowledges that the RPs shall be subject to any existing or future reservation of water for the DHHL.

7. ***Coordinate with an interim committee to discuss water usage issues in the RP areas. The committee shall consist of seven members, representing EMI/Mahi Pono, Farm Bureau, Office of Hawaiian Affairs, the Native Hawaiian Legal Corporation, the Huelo Community Association, the Sierra Club, and the County of Maui. The interim committee shall meet at least quarterly, more often as useful.***

   Status: The quarterly meeting of the RP Committee was held on Wednesday, July 26, 2023. Jayson Watts (Mahi Pono / EMI) sent an invitation via email to the Committee on Tuesday, July 18, 2023. The meeting was attended by Lafayette Young (Huelo Community), Ashley Obrey (NHLC / Na Moku), Warren Watanabe (Maui County Farm Bureau), Lucienne de Naie (Sierra Club), James Kimo Landgraf (County of Maui Dept. of Water Supply), Jayson Watts (Mahi Pono), Mark Vaught (EMI), and Grant Nakama (Mahi Pono).

   EMI provided an update on the work related to the implementation of the IIFS, and Mahi Pono supplied an update on farming operations. The information provided by Mahi Pono and EMI to the Committee generally mirrored the farming and IIFS updates that are included as exhibits to this quarterly report. Mahi Pono and EMI also answered follow-up questions from the Sierra Club about IIFS updates provided. The Committee also took interest in Mahi Pono’s watermelon and onion crops that were harvested during the quarter. The meeting adjourned

approximately 45 minutes after it started. The committee's next meeting is tentatively set for October 19, 2023.

8. Permittee shall therefore provide quarterly written reports to the Board of Land and Natural Resources (Board) containing (at a minimum) the following information:

a. *The amount of water used on a monthly basis, including the monthly amount of water delivered for: the County of Maui Department of Water Supply and the County of Maui Kula Agricultural Park; diversified agriculture; industrial and non-agricultural uses; and reservoir/fire protection/hydroelectric uses. Descriptions of diversified agricultural uses shall also provide information as to location, crop, and use of the water. Industrial and non-agricultural uses shall specify the character and purpose of water use and the user of the water.*

Status: The amount of water used on a monthly basis, including the monthly amount of water delivered for the County of Maui DWS and Kula Ag Park, diversified agriculture, industrial and non-agricultural uses, and reservoir/fire protection/hydroelectric uses can be found in the table attached as Exhibit A. The existence of and continued use of reservoirs is extremely important for fire safety reasons. They are a major source of water for fighting fires on Maui, which occur during the dry months of the year. The location, crop, and users of agricultural water, and the specifics on industrial and non-agricultural uses can be found in the table attached as Exhibit B.

As Mahi Pono prepares new fields for planting, they continue to install new irrigation systems that focus on efficient water application measures. In addition to these new systems, we are also installing weed mat throughout the farm, which help the soil maintain moisture by reducing evaporation. The cumulative water efficiency effects of these initiatives can be seen in the reduced amount of water remaining in the final column of the table attached as Exhibit A.

b. *An estimate of the system loss for both the EMI ditch system and the A&B field system, also on a monthly basis.*

Status: The accepted Final Environmental Impact Statement which considers East Maui water diversions facilitated by a long-term lease contains estimates for system losses for both the EMI ditch system as well as the "*A&B field system"*.

- EMI Ditch System – As stated in the FEIS, a USGS study "concluded that it was unclear whether net seepage losses even occur in the EMI Aqueduct system, due to the large amount of tunnel in the system, as well as the seepage gains that enter the system."

- A&B Field System – An estimate of the system losses by month is as shown in the table below:

Month	EMI Ditch System (in MGD)	County's Diverted Reserve (in MGD)	Field System (in MGD)
April	0	4.62	1.74
May	0	4.72	0.53
June	0	3.58	1.41
Average	0	4.31	1.23

As noted by Condition #2 above, system losses and evaporation shall not be considered as a waste of water.

c. *For each stream that is subject to the 6/20/2018 CWRM D&O, a status update as to the degree to which the flow of each stream has been restored, and which artificial structures have been modified or removed as required by CWRM.*

Status: EMI prioritizes its compliance with the CWRM order and has been working with CWRM staff on implementation plans and permitting. EMI notes that the language of the CWRM order relating to the removal of artificial structures is spelled out on page 269 of the D&O, items i, j, and k which State in part that *"it is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed."* and "The intent of the Commission is to allow for the continued use and viability of the EMI ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS. A status update is provided in the table attached as Exhibit C. Also included in Exhibit C is a copy of the section of the CWRM order relating to the removal of artificial structures.

d. *Update on removal of trash, unused man-made structures, equipment, and debris that serve no useful purpose, including documenting any reports of such items that Permittee has received from the Department, other public or private entities and members of the general public and the action(s) taken by Permittee, if any, to remove the reported items*

Status: See above response to #5 above.

e. *The method and timeline for discontinuing the diversion of water from Waipio and Hanehoi streams into the Hoʻolawa stream, including status updates on implementation.*

Status: As the stream levels fluctuate during inclement weather, EMI personnel are dispatched to manually control the intake gates to prevent excess stream water inflow to the ditch. As for Haneho'i, all intakes have been sealed (per the 2018 D&O); therefore, no water enters the ditch from this stream. Regarding the Waipi'o stream, EMI personnel manually control the intakes on the ditch to prevent excess flow from entering the ditch. Thus, all flows to the ditch are delivered to and used by

Mahi Pono and the County of Maui. The flows are no longer controlled into Hoolawa stream.

f. *A listing of all reservoirs in the A&B/EMI water system serviced by the RPs, with the following information provided for each:*

The capacity of each such reservoir;

The surface area of each such reservoir;

What fields are irrigated by each such reservoir, or in the alternative, which reservoirs service the County of Maui's domestic needs, Kula Agricultural Park farmers, and DHHL lands;

Which reservoirs are lined, and with what material, and which are not;

The estimated amount of evaporation per day from the surface of each such reservoir;

An analysis of the cost and time to line at least one such reservoir; and

Information on any reservoirs planned to be taken out of service.

Status: A table containing most of the information requested above is attached as Exhibit D. Evaporation estimates are based on actual reservoir water levels during Q2 2023, with the figures being displayed in gallons per day.

In addition to the information in Exhibit D, we have also determined an estimated unit cost of $7.00 per square foot (sloped) to line a reservoir, plus estimated engineering costs typically being between $30k - $60k per reservoir. If we apply

these costs to a reservoir with a 10-acre surface area and assumed slope adjustment of 25%, then the resulting estimate would be approximately $3.85M.

g. *The number, location, timing, and approximate acreage of fires fought during the quarter using water from reservoirs supplied with water from the A&B/EMI system.*

Status: There were no fires reported during the second quarter of 2023.

h. *The names and locations of the reservoirs from which water was drawn to fight fires during the quarter, together with:*

(i) *Whether those reservoirs are lined or not;*

(ii) *The average depth of water in those reservoirs;*

(iii) *Estimated average monthly inflows and outflows from those reservoirs; and*

(iv) *The amount of water used for hydroelectric purposes, if any.*

Status: There were no fires reported during the second quarter of 2023. Permittees will work diligently to record the requested data in the event of future fires.

i. *A listing of all irrigation wells in the A&B/EMI water system serviced by the RPs, with the water levels and chloride levels in each well that is in active use noted.*

Status: In the second quarter of 2023, Wells 12, and 13 were in active use. Chloride levels measured during the quarter are provided below:

- *Well #2*

- *pH – 7.7*
- *Sodium – 250 mg/L*
- *Water Level – 34.5 Inches*

- *Well #12*
  - *pH – 7.3*
  - *Sodium – 300 mg/L*
  - *Water Level – 23.5 Inches*

- *Well #13*
  - *pH – 7.3*
  - *Sodium – 240 mg/L*
  - *Water Level – 23 Inches*

j. *Each quarterly report shall be submitted in a format with tracked changes that clearly show the differences/updates from the prior quarter.*

Such quarterly reports shall be "due" to the DLNR one month after the last calendar day of the subject quarter. Thus, the reports shall come due as follows:

Q1 Report – April 30, 2022
Q2 Report – July 31, 2022
Q3 Report – October 31, 2022
Q4 Report – January 30, 2023
. . . and so on;

Status: This Q2 2023 report is the fourth version to implement a track-change format vs. the prior quarter. The deadline to submit quarterly reports is noted, and EMI is committed to timely submittals of all future reports.

k. *For water used for agricultural crops, the Permittee shall disclose in each quarterly report how much water was required on average for each type of crop per acre per day for the previous quarter.*[1]

	Current Acreage	Q2 2023 **Approximate *Irrigation* Average*** (*GPAD = PER ACRE*)
Orchard Crops	8,239	1,930
Row Crops	585	1,287
Tropical Fruits	6	1,805
Energy Crops	32	1,225
*Figures are representative of irrigation applied during the quarter, which doesn't include rainfall. This is not representative of the crop water requirement, which is partially met to a varying degree (depending on weather) by rainfall.		

9. The Permittee may not divert an amount of water exceeding an average of 40.49 million gallons per day (mgd), averaged monthly, for all permits combined, further subject to all water diverted shall be for reasonable and beneficial uses.

Status: The second quarter's need for water from the East Maui streams has averaged approximately 18.27 million gallons per day (MGD). To comply with the permit conditions requiring all diverted water be for reasonable and beneficial use and there be no waste of water, only the amount of water that is needed is being diverted from the East Maui watershed. This amount is within the 40.49 MGD (monthly average) set by the BLNR at its November 10, 2022, meeting and the 31.50 MGD (monthly average) cap imposed by Judge Crabtree in his June 16, 2023 Decision on Appeal; and Interim Modification of Permits Pursuant to HRS 91-14(g) and July 14, 2023 Decision on Appeal and Order. This water is

[1] This condition was added at the November 10, 2022 BLNR meeting.

being used to supply the County of Maui for its Nahiku and Upcountry Maui water systems, the Kula Ag Park, Maui Invasive Species Committee, fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands now owned and managed by Mahi Pono.

10. ***For RP S-7266, the area identified as the Hanawi Natural Area Reserve shall be removed from the revocable permit premises. Additionally, A&B/EMI shall continue discussions with the Department's Division of Forestry and Wildlife ("DOFAW") to identify additional forest reserve lands to be removed from the license areas.***

    Status: Meetings between EMI and DOFAW have been held and were focused on identifying those areas that are essential to EMI's ongoing operations, such as access routes and buffer areas around the EMI ditch system to ensure the reliable and safe operation of the system as well as the safety of EMI employees. The most recent of these meetings, while not technically in Q2 2023, Fair was held on Thursday, July 20, 2023, and was held via Zoom. EMI has expressed to DOFAW a willingness to reduce the license/lease area as long as the permitted area (a) meets the collective needs of DLNR and DOFAW, (b) continues to allow EMI to operate its ditch system in a safe and efficient manner, (c) fairly allocates liability exposure resulting from the planned increase in the amount of public access into the license/lease area, and (d) does not affect the access to state water afforded by existing or future RPs and water license/lease(s). DOFAW and EMI have identified preliminary locations for suitable crossing points over the EMI system to State-owned lands located upslope. Discussions between EMI and DOFAW on the reduced lease/license area will continue.

11. ***Mahi Pono is to advise any third-party lessees, that any decisions they make is based on availability of water on a month-to-month basis renewed annually unless there is a permanent lease***

    Status: All third-party lessees have been informed through existing language in their lease agreements that the availability of water is subject to change based on various conditions, one of which would be the nature of the water availability

from East Maui through an annually renewed revocable permit or an eventual permanent lease.

12. For the streams in the revocable permit area that have not had interim instream flow standards set, Permittee shall continue to clean up and remove debris from the permit areas and staff shall inspect and report every three months on the progress of the clean-up. For purposes of clean-up, debris shall not include any structure and equipment that is either currently used for the water diversions, or for which CWRM has not required removal.

Status: EMI has continued to remove debris and trash from stream areas. These efforts include locations surrounding the streams located outside of the IIFS area.

13. Permittee shall require its staff to inspect the streams and report on whether the lands could be developed for agricultural land or water leases.

Status: EMI understands that, in general, State-owned land adjacent to streams in East Maui are conservation lands in forest reserves which may not be suitable for agricultural development. An agricultural assessment for the East Maui lands/watershed, including the state-owned lands, was included as part of the environmental impact statement ("FEIS") prepared by the Permittees for the proposed state water lease and accepted by the State. In addition, the FEIS contemplated the use of those lands as a collection area for a state water lease.

14. The RPs shall also comply with all conditions required by the 6/20/2018 CWRM D&O, which includes meeting the IIFS set forth in paragraph "h" of the "Decision and Order " section of the D&O. That paragraph provides a chart showing the name of the stream, the restoration status, the amended IIFS value, and an IIFS location, if applicable, for each stream, as follows:

Stream Name	Restoration Status	BFQs at IIFS (cfs)	IIFS Value (cfs)	IIFS Location
Makapipi	Full	1.3	n/a	Above Hana Highway
Hanawi	Connectivity	4.6	0.92	Below Hana Highway
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch
Waiaaka	None	0.77	0.77	Above Hana Highway
Pa‘akea	Connectivity	0.9	0.18	At Hana Highway
Waiohue	Full	5.0	n/a	At Hana Highway
Pua‘aka‘a	Connectivity	0.9	0.18	Above Hana Highway
Kopiliula	H90	5.0	3.2	Below Hana Highway
East Wailuaiki	H9o	5.8	3.7	At Hana Highway
West Wailuaiki	Full	6.0	n/a	Above Hana Highway
Wailuanui	Full	6.1	n/a	At Hana Highway
Ohia/Waianu	None	4.7	n/a	None.
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch
Palauhulu	Full	11	n/a	Above Hana Highway
Pi‘ina‘au	Full	14	n/a	Above Hana Highway
Nua‘ailua	Connectivity	0.28	2.2	To be determined
Honomanu	H9o	4.2	4.2	Above Hana Highway
Punalau/Kolea	H9o	4.5	2.9	Above Hana Highway
Ha‘ipua‘ena	Connectivity	4.9	1.36	Below Hana Highway
Puohokamoa	Connectivity	8.4	1.1	Above Hana Highway
Wahinepe‘e	None	0.9	0.9	Above Hana Highway
Waikamoi	H9o	6.7	3.8	Above Hana Highway
Hanehoi	Full	2.54	n/a	Upstream of Lowrie Ditch

Huelo (Puolua)	Full	1.47	n/a	Downstream of Haiku Ditch
Honopou	Full	6.5	n/a	Below Hana Highway

Status: See response to #1 above.

15. Permittee shall cooperate with CWRM and the Department's Division of Aquatic Resources (DAR) in facilitating studies, site inspections and other actions as necessary to address the streams in the RP areas that are not covered by the 6/20/2018 CWRM D&O.

Status: EMI continues to be in contact with CWRM personnel regarding site visits to evaluate diversions that weren't covered by the 2018 D&O. Such site visits most recently occurred in Q2 2023, related to the amendment of the Huelo Streams IIFS passed by CWRM in 2022. CWRM field staff conducts these site visits on a stream-by-stream basis. EMI has previously contacted DAR and has expressed willingness to cooperate with any DAR activities related to the DAR work on streams outside the license area.

16. Permittee shall work with CWRM and DOFAW to determine whether there are alternatives to diversion removal that effectively prevent mosquito breeding and can be feasibly implemented. Permittee shall include the status of alternatives in its quarterly reports.

Status: EMI has worked with CWRM in the context of the earlier discussion with DOFAW regarding diversion structures that can impede free flow of water and create habitat for mosquito breeding. Considerable evaluation and analysis have been conducted by the CWRM and EMI on nine "Category 1" diversions regarding additional work to be done on these diversions to mitigate these issues. CWRM will meet with stakeholders to discuss this mitigation plan and report back to EMI as to the additional diversion modification work to be undertaken.

17. If the Board finds that a use of water is not reasonable and beneficial and does not comply with the permitted uses, Permittee shall cease such use

within a timeframe as determined by the Department of Land and Natural Resources (Department).

Status: EMI remains willing to comply with this requirement and stands ready to assist the Board in any way it can regarding this matter.

18. For water used for agricultural crops, Permittee is to estimate how much water is required for each crop per acre per day.

Status: Water requirements for each crop is highly dependent on several factors, including soil composition, weather, and the maturity of the crop itself. That said, the average water requirements for Mahi Pono's agricultural crops at full maturity are estimated to be as follows:

- Orchard Crops - 5,089 gallons per acre per day
- Row Crops - 3,392 gallons per acre per day
- Tropical Fruits - 4,999 gallons per acre per day
- Energy Crops - 3,392 gallons per acre per day

These estimates are consistent with the estimated water requirements contained in Table 3 of Appendix I (Agricultural and related Economic Impacts) of the EIS. The average water requirements listed above are reflective of the crops' collective water needs (irrigation & rainfall) at full maturity. This differs from the reported irrigation average, which is reflective of the irrigation consumption (excluding rainfall) of immature crops.

19. Permittee shall submit to the Department a plan for their proposed upgrades, including an implementation timeline, to the irrigation system intended to address CWRM' s concerns no later than December 1, 2022. Permittee is to work with the Maui Fire Department to determine what their exact needs are.

Status: The Mahi Pono System Efficiency Upgrades Report was submitted to the BLNR on November 30, 2022. A supplemental report requested by the BLNR containing additional information on system losses was also submitted on March 24, 2023.

An updated response to the Permittees' request for information regarding the department's requirements is attached as Exhibit E. Permittees will continue to work with the Maui Fire Department and will report on any future developments that may allow for additional estimates to be shared.

20. Permittee shall pay the monthly rent amounts as determined by the Board; the 2023 monthly rent amounts shall be those set by the Board at its December 8, 2022, meeting.

Status: EMI has remained current in its payment of rent to the State for the subject revocable permits.

21. Permittee shall look into supplying the Maui Invasive Species Committee with water, and if feasible, and despite it not being an agricultural use, be considered a reasonable and beneficial and permitted use under the RP.

Status: EMI/Mahi Pono have successfully provided MISC with water to support their operations starting in Q1 2023. In Q2, EMI successfully installed a meter on the pipeline supplying MISC with water. The total amount of water used by MISC between May – July 2023 was 4,800 gallons, and the Q2 2023 portion of this use is accounted for in the "*Other"* column in Exhibit A.

22. ***DOFAW shall discuss with Maui Fire Department and report to the Board at the next RP renewal whether ocean water can feasibly be substituted for some of the firefighting needs. Effects of applying ocean water shall also be considered.***

Status: This condition is not applicable to A&B/EMI. It has been included in this report for completeness.

23. At or before the next renewal of the RP's, or before a request for authorization to lease water rights at public auction, at a scheduled meeting of the Board, the Permittees shall cooperate with the Department's Land Division and DOFAW, who the Board directs to

bring a proposed watershed management fee and/or requirements for the Permittees to implement management actions in the watershed.

Status: At the June 23, 2023 meeting of the Board of Land and Natural Resources, the BLNR approved a WMP fee for the 2023 RPs. That fee was acceptable to EMI for the purposes of the 2023 RP, but it was noted at the hearing that it was a compromise fee, and that the methodology used would not be appropriate for calculating the long-term water lease WMP fee, nor for future RP fees, if necessary. EMI has pledged to continue to work with DOFAW and the Land Division on an appropriate WMP and methodology for determining future WMP fees to be assessed.

EXHIBIT A – MONTHLY WATER USAGE

All Figures in Millions of Gallons per Day ("MGD")

Month	East Maui Surface Water @ Honopou	East Maui Surface Water @ Maliko	East Maui Surface Water Gained from Area Between Honopou and Maliko	Groundwater Pumped on-Farm	County of Maui DWS [1]	County of Maui Ag Park [2]	Diversified Agriculture [3]	Historic / Industrial Uses [4]	Reservoir / Seepage / Fire Protection / Evaporation / Dust Control / Hydroelectric [5]	
									Diverted Reserve to meet Contractual Obligation to County DWS & Ag Park [6]	Other [7]
April	14.55	17.99	3.44	4.41	2.57	0.31	13.11	0.05	4.62	1.74
May	21.04	23.97	2.93	2.66	2.16	0.62	18.55	0.05	4.72	0.53
June	19.21	19.99	0.78	7.45	3.31	0.61	18.48	0.05	3.58	1.41
Quarterly Average	**18.27**	**20.65**	**2.38**	**4.84**	**2.68**	**0.51**	**16.71**	**0.05**	**4.31**	**1.23**

1. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

2. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

3. Diversified Agriculture includes the users/uses described in Exhibit B.

4. Historical/Industrial Uses are non-HC&S uses that have historically relied on water from the EMI Ditch System, even after the closure of HC&S. These include uses by entities located either adjacent to or within the boundaries of the farm and are further described in Exhibit B. Historically, the use of water by these entities was not regularly metered, and a historical estimate of 1.1 MGD was developed and previously used as the amount of collective water consumption by these entities. Mahi Pono installed meters in March 2022 thus, starting with the Q2 2022 report, the figures reported in this column will reflect actual usage based on those meters. As previously mentioned, HC&D's water usage is no longer accounted for in this column as HC&D is obtaining water from its own well.

5. The numbers in these columns include water not separately accounted for in the columns to the left. The water in on-farm reservoirs is available for use by the County of Maui against brush fires, the risk of which has increased due to the reduction of the irrigated acreage following the cessation of sugar cultivation but is decreasing as Mahi Pono continues to implement its farm plan. Seepage and evaporation inherent to an agricultural ditch system are also included in this column. The water used by the Mahi Pono hydroelectric system is non-consumptive and is returned to the ditch after being used to generate clean energy. The water is re-used consumptively by one of the other uses, or if there is no reuse, ends up in the reservoirs.

6. Operationally and pursuant to a contractual agreement with the County of Maui, a minimum of approximately 6 MGD must be reliably conveyed to / made available to the County each and every day so

that the County has flexibility regarding when to run its plant depending on weather conditions, demand, water available from its Piiholo plant, etc. Additionally, a minimum of approximately 1.5 MGD must be reliably conveyed to / made available to the County each and every day so that the County can be flexible regarding how to meet the needs of the Ag Park. The numbers in this sub-column reflect the portion of the 7.5 MGD that is made available to the County every day, that the County does not use (i.e., 7.5 MGD less the sum of the amounts used by the County DWS at Kamole Weir and Ag Park). Water that is not used by the County remains in the Ditch System, is transported to Central Maui and any excess is directed to reservoirs located on the former plantation.

7. The numbers in these columns reflect the amount of water not separately accounted for in the columns entitled "County of Maui DWS," "County of Maui Ag Park," "Diversified Agriculture," and "Historic/Industrial Uses" less the reserve needed to meet EMI's contractual obligations to the County of Maui. As has been explained in the past, EMI/Mahi Pono cannot rely on receiving any specific amount of the water provided to the County of Maui to meet the contractual obligations to the County DWS and Kula Ag Park that is not actually consumed by the County (“DIVERTED RESERVE”) for the purposes of planning to meet the irrigation needs of Mahi Pono’s crops. The amount is unpredictable and unreliable; however, EMI/Mahi Pono do make an effort to use the Diverted Reserve for crop irrigation when feasible.

EXHIBIT B – WATER USAGE SPECIFICS

Diversified Agriculture Use

Entity	Crop	Field	Acreage
Mahi Pono	Citrus	300	305
Mahi Pono	Coffee	301	273
Mahi Pono	Citrus	303	161
Maui Best (Tenant)	Sweet Potato	408	281
Maui Best (Tenant)	Sweet Potato	409	180
Mahi Pono	Citrus	501	83
Mahi Pono	Citrus	502	290
Mahi Pono	Citrus	503	144
Mahi Pono	Citrus	504	294
Mahi Pono	Citrus	505	240
Mahi Pono	Citrus	507	189
Mahi Pono	Citrus	508	183
Mahi Pono	Citrus	508B	213
Mahi Pono	Citrus	509	79
Mahi Pono	Citrus	510	181
Mahi Pono	Citrus	511	161
Mahi Pono	Citrus	512	132
Mahi Pono	Citrus	601	221
Mahi Pono	Citrus	602	196
Mahi Pono	Citrus	603	262
Mahi Pono	Citrus	604	343
Mahi Pono	Citrus	605	394
Mahi Pono	Citrus	606	134
Mahi Pono	Mixed	608	70
Mahi Pono	Citrus	610	40
Mahi Pono	Citrus	701	269
Mahi Pono	Citrus	702	232
Mahi Pono	Citrus	7036	150
Mahi Pono	Citrus	704	214
Mahi Pono	Row Crops	706ON	42
Mahi Pono	Row Crops	707W	82
Mahi Pono	Citrus	708	299
Mahi Pono	Citrus	800	100
Mahi Pono	Citrus	801	281
Mahi Pono	Citrus	803A	127
Mahi Pono	Pongamia	803B	32
Mahi Pono	Avocado	803C	6
Mahi Pono	Coffee	807	120
Mahi Pono	Mixed	807	39
Mahi Pono	Citrus	808	158
Mahi Pono	Citrus	809	251
Mahi Pono	Citrus	089X	72
Mahi Pono	Citrus	813	448
Mahi Pono	Citrus	814	342
Mahi Pono	Citrus	818	266
Mahi Pono	Citrus	911	82
Mahi Pono	Citrus	911B	201
TOTAL			***8,862***

EXHIBIT B – WATER USAGE SPECIFICS (Continued)

Historic / Industrial Uses

Water Users	Source/Delivery Point	Water User's Location	Relationship to EMI / A&B / Mahi Pono	Use
Imua Energy Maui LLC, dba Maul EKO Systems LLC (Tenant of County Central Maui Landfill)	Pumped from Haiku Ditch	3-8-003-019	Gov't Tenant	General Use for Compost Operation
HC&S Mill Area Fire Suppression	702 Cistern	3-8-006-001 CPR #I	A&B - Owned	Fire suppression for ag offices & Puunene Post Offlce
New Leaf Ranch (Non-Profit)	702 Cistern	3-8-006-029	Tenant	Irrigation water for non-profit providing ag-related work opportunities and training as mental health & substance use dependency treatment
Costo Maddela	Haiku Ditch	3-8-001-001	Tenant	Pasture & Animal Water
Harriet, Michael & Jordan Santos	Kauhikoa Ditch	2-5-001-018 & 019	Tenant	Pasture & Animal Water
Leonard Pagan	Kauhikoa Ditch	2-5-002-001	Tenant	Pasture & Animal Water
Harry Cambra	Kauhikoa Ditch	2-5-003-026,027,036,037,038	Tenant	Pasture & Animal Water

EXHIBIT C – CWRM ORDER STATUS UPDATE
Section i, j, & k from CWRM D&O

i. It is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed.

j. This Order does not require that every diversion on every tributary be removed or modified, the Commission is only looking at modifications to main stem and major diversions to accomplish the amended IIFS set forth above. The Commission also recognizes that it is not the purpose of this proceeding to determine how the diversions will be modified. That issue will be before the Commission in a subsequent process.

k. The intent of the Commission is to allow for the continued use and viability of the EMI Ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS.

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EXHIBIT C – CWRM ORDER STATUS UPDATE (Continued)

IIFS STREAM UPDATE

Stream Name	Restoration Status	BFQ50 at IIFS (cfs)	IIFS Value (cfs)	IIFS Location	Current Status
Makapipi	Full	1.3	n/a	Above Hana Highway	Gate removed, water flowing downstream below intake
Hanawi	Connectivity	4.6	0.92	Below Hana Highway	Gate open, water flowing downstream below intake
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch	Main gate open, water flowing downstream below intake
Waiaaka	None	0.77	0.77	Above Hana Highway	Gate open, water flowing downstream below intake
Pa'akea	Connectivity	0.5	0.18	At Hana Highway	Intake gate closed, water flowing downstream over dam
Waiohue	Full	5	n/a	At Hana Highway	Intake gate closed, sluice gate removed. All water flowing downstream.
Puaaka'a	Connectivity	1.1	0.2	Above Hana Highway	Gate open, water flowing downstream below intake
Kopiliula	H90	5	3.2	Below Hana Highway	Main gates open, ditch control gates closed. Water flowing downstream.
East Wailuaiki	H90	5.8	3.7	At Hana Highway	Gates open, water flowing downstream below intake
West Wailuaiki	Full	6	n/a	Above Hana Highway	Gates open, water flowing downstream below intake
Wailuanui	Full	6.1	n/a	At Hana Highway	All intakes sealed (Category 1) water flowing downstream below intake
Ohia/Waianu	None	4.7	n/a	None	No diversion
Waiokamilo	Full	3.5	n/a	Below diversion at Koolau Ditch	All intakes closed, water flowing downstream
Palauhulu	Full	11	n/a	Above Hana Highway	All water either passing intakes or flowing out of the Kano sluice gate. Water flowing downstream.
Pi'ina'au	Full	14	n/a	Above Hana Highway	Intake sealed, water flowing downstream.
Nuaailua	Connectivity	0.23	2.2	To Be Determined	Intake gate closed, water flowing downstream over dam
Honomanu	H90	4.2	4.2	Above Hana Highway	All 4 diversion sluice gates are open, water flowing downstream
Punalau/Koiea	H90	4.5	2.9	Above Hana Highway	Sluice gate open, water flowing downstream below intake
Haipua'ena	Connectivity	4.5	1.36	Below Hana Highway	Intake gate closed, water flowing downstream, dam will require modification
Puohokamoa	Connectivity	8.4	1.1	Below Hana Highway	Intake gate will be used to ensure water flowing downstream, intake dam will require significant modification
Wahinepee	None	0.5	0.9	Above Hana Highway	No diversion. Water flowing downstream.
Waikamoi	H90	6.7	3.8	Above Hana Highway	Center ditch sluice gate open. Water flowing downstream.
Hanehoi	Full	2.54	n/a	Upstream of Lowrie Ditch	Intakes sealed. Water flowing downstream.
Huelo (Puolua)	Full	1.47	n/a	Downstream of Haiku Ditch	Lowrie intake will require significant modifications & corresponding permit approvals/ Haiku intake sealed
Honopou	Full	6.5	n/a	Below Hana Highway	Three sluice gates open, one intake sealed. One of two Wailole intakes sealed, water flowing downstream

EXHIBIT D – RESERVOIR INFORMATION

EXHIBIT D

Reservoir No.	Tax Map Key	Capacity Million Gallons	Surface Area Acres	Fields Feed by Reservoir	Lined	Type Material	Evaporation Rate (Average Gal/Day)****
14	2-5-04:39	9.50	1.50	100; 101	No	Earthen	0
15	2-5-04:39	8.30	1.10	101	No	Earthen	0
20	2-5-03:10	48.80	10.20	312; 314	No	Earthen	0
21	2-5-04:39	18.60	6.90	111; 113; 200	No	Earthen	0
22	2-5-03:10	43.80	10.60	201; 202	No	Earthen	0
24	2-5-03:10	15.00	3.60	201	Yes	Concrete	0
25	2-5-03:09	40.20	9.70	205	No	Earthen	57,467
30	2-5-03:01	21.00	9.00	300; 312	No	Earthen	0
33	2-5-02:02	46.50	8.00	304; 304; 313	No	Earthen	49,539
40	2-5-02:01	62.80	13.50	410; 400; 401; 413 (County Use)	No	Earthen	79,606
42	2-5-02:01	10.40	3.20	400; 401; 403	No	Earthen	19,212
52	3-8-03:04	74.00	20.00	504; 511	No	Earthen	0
60	3-8-01:06	80.50	20.80	600; 611	No	Earthen	0
61	3-8-01:01	53.10	9.00	604	No	Earthen	63,674
70	3-8-01:01	19.30	5.00	Mud Pile 710	No	Earthen	0
80	3-8-03:02	41.10	12.00	800; 801	No	Earthen	0
81	3-8-04:22	36.70	13.80	803 805 808 809	No	Earthen	94,506
82	3-8-04:22	17.90	7.40	810; 811; (812; 815; 816; 818; 819; 822; 823; Res. Ditch)	No	Earthen	0
84	3-8-03:02	35.10	8.00	701; 702; 703; (807; 813; 814 Res. Ditch)	No	Earthen	0
90	3-8-08:05	45.00	15.80	737; 761; 915; 917	No	Earthen	120,379
Haiku	(2)2-7-003:055 & 081	57.9	27.30	Haiku Ditch	No	Earthen	0
Pauwela	(2)2-7-003:030 & 056/2-7-008:038	32.5	6.80	Haiku Ditch	No	Earthen	0
Peahi	(2)2-8-002:018	22	5.80	Haiku Ditch	No	Earthen	0
Kapalaalaea	(2)2-8-007:001	49.7	8.70	Haiku Ditch	No	Earthen	0
Papaaea	(2)2-9-014:004	42.5	9.00	Center Ditch to Lowrie Ditch	No	Earthen	0
9	2-5-004:039	1.00	NA	110	No	Earthen	Unregulated/Rarely Used
10	2-5-004:039	9.50	NA	**116**	No	Earthen	Unregulated/Rarely Used
12	2-5-004:039	9.00	6.70	109	No	Earthen	Unregulated/Rarely Used
23	2-5-005:019	13.70	NA	200	Yes*	Concrete/rubber	Unregulated/Rarely Used
26	2-5-005:019	10.10	NA	208	No	Earthen	Unregulated/Rarely Used
29	2-5-005:019	9.90	NA	213	No	Earthen	Unregulated/Rarely Used
31	2-5-003:031	5.10	NA	303	No	Earthen	Unregulated/Rarely Used
32	2-5-002:002	9.80	NA	304	No	Earthen	Unregulated/Rarely Used
34	2-5-003:010	8.10	NA	306	No	Earthen	Unregulated/Rarely Used
35	2-5-002:002	15.00	5.40	310; 311; 505	No	Earthen	Unregulated/Used Sparingly
41	2-5-002:001	8.90	NA	402; 404	No	Earthen	Unregulated/Rarely Used
43	2-5-001:001	13.50	4.00	409; 404	No	Earthen	Unregulated/Rarely Used
44	2-5-001:008	3.60	NA	Above 417;	No	Earthen	Unregulated/Rarely Used
45	2-5-001:008	4.20	NA	415; 414; 418	Yes	Concrete	Unregulated/Rarely Used
50	3-8-003:005	8.40	NA	209; 500; 507; 508	No	Earthen	Unregulated/Used Sparingly
51	3-8-003:004	15.20	NA	502; 505	No	Earthen	Unregulated/Rarely Used
83	3-8-004:002	6.40	4.70	817; 821	No	Earthen	Unregulated/Rarely Used

Not all reservoirs are currently in use.

*Reservoir 23 was lined with concrete/rubber. Lining is currently deteriorated.

**Kaupakalua decommissioned in 2021/2022.

***Kapalaalaea decommissioning project begins in 2023.

****Evaporation rate is the average gallons per day evaporation for the quarter

EXHIBIT E – MAUI FIRE DEPARTMENT RESPONSE

MICHAEL P. VICTORINO
Mayor
BRADFORD K. VENTURA
Fire Chief
GAVIN L.M. FUJIOKA
Deputy Fire Chief

DEPARTMENT OF FIRE & PUBLIC SAFETY
COUNTY OF MAUI
200 DAIRY ROAD
KAHULUI, HI 96732

October 11, 2022

Ms. Suzanne D. Case
State of Hawai'i
Department of Land and Natural Resources
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Subject: **Estimate for Water Requirement for Fire Response by the County of Maui, Department of Fire and Public Safety**

Dear Ms. Case,

This letter is in response to a request to provide information regarding the estimate for water to be used in response to a brush fire arising in the central valley of Maui. Whether or not fire exists on public or private lands, it is our mission to protect life and property.

As you may know, Mahi Pono's farm is a vital source of water in the majority of the areas in and around Central Maui. From filling our tankers and mobile bladders to Air One dipping water from surrounding reservoirs, the water from the Mahi Pono farm is a critical part of our ability to execute our emergency plans in the event of a brush fire.

An estimate of our water usage during an emergency response depends on several different things, including – but not limited to – the size and location of the fire, the fuel load, proximity to other non-farm sources, weather conditions (wind speed and direction), and the time of day (helicopters do not assist in darkness for safety reasons). Most importantly, water usage is affected by the proximity of the fire relative to residences, property, and human life, which in an emergency situation, must be considered the highest priority. Given all of the above-mentioned variables, it would be exceedingly difficult to accurately estimate the amount of water necessary to bring the fire under control.

EXHIBIT E – MAUI FIRE DEPARTMENT RESPONSE (cont.)

A letter was submitted on June 22, 2021, detailing the amount of water that could be used by each fire apparatus on a per hour basis in response to a wildland fire, however, the total amount of hours of use for each apparatus is directly related to the many factors mentioned above.

A copy of the June 22, 2021, letter is attached for your reference.

Sincerely,

HENRY LINDO, Jr.
Assistant Chief of Operations

EXHIBIT F – Pictures of Debris Removed during Q2 2023

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 791628, PAIA, MAUI, HAWAI'I 96779-1628 • (808) 579-9516

BLNR CONDITIONS FOR HOLDOVER OF EAST MAUI WATER PERMITS
STATUS OF COMPLIANCE AS OF ~~APRIL~~JUNE 30, 2023

CONDITIONS PER THE FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION & ORDER

1. ***Require the revocable permits at issue- S-7263 (Honomanu), S-7264 (Huelo), S- 7265 (Ke'anae) , and S-7266 (Nahiku) (collectively, the "RPs") to incorporate the Commission on Water Resource Management's ("CWRM") June 20, 2018 Findings of Fact , Conclusions of Law, and Decision & Order ("6/20/2018 CWRM D&O"). Diversion of surface water from the streams listed in the 6/20/2018 CWRM D&O shall be in accordance therewith, and so shall the timing for cessation of diversions, as necessary.***

   Status: The need for water from the East Maui streams averaged approximately ~~12.80~~18.27 million gallons per day (MGD) during the ~~first~~second quarter of 2023. This amount continues to be well within the bounds of the 2018 IIFS decision concerning total quantity and the use of specific streams. It is also ~~significantly~~ less than the 40.49 MGD cap, calculated on a monthly basis, set by the BLNR at its November 10, 2022, meeting and the 31.50 MGD modified cap imposed by Judge Crabtree in his June 16, 2023 Decision on Appeal; and Interim Modification of Permits Pursuant to HRS 91-14(g) and July 14, 2023 Decision on Appeal and Order.

   The water that was diverted in ~~Q1~~Q2 2023 continued to supply the County of Maui for its Upcountry Maui water system, the Kula Ag Park, the Maui Invasive Species Committee, as well as fire suppression needs, historical industrial/non-agricultural use, and agricultural uses in Central Maui, on lands now owned and managed by Mahi Pono.

   ~~There was a significant amount of rainfall within the Central Maui Fields during Q1 2023, **particularly in February**. This rainfall helped meet a portion of the crops' water requirement, which also led to **needing to divert less East Maui stream water than expected/normal in Q1.**~~
   During ~~Q1~~Q2 2023, Mahi Pono focused on the maintenance of existing crops and preparing new areas for planting later this year. ~~As of March 31st~~We also planted an additional 546 acres of orchard and row crops, and as of June 30, 2023, the

planted acreage in Mahi Pono's **East Maui fields** ~~remains at 8,316 acres, the same amount of planted acreage as Q4 2022~~ is 8,862 acres. As planned, Mahi Pono anticipates ~~ramping up~~further accelerating planting operations ~~beginning in Q2 2023 and continuing through Q3 & Q4~~in Q3 & Q4 2023 with the planting of an additional 1,568 acres. A corresponding increase in water applications is also expected. The Permittees – and by extension, Mahi Pono – remain committed to the efficient use of East Maui stream water. Mahi Pono's total amount of water usage, together with that of the County of Maui, will not exceed the limits of the IIFS decision at any point during its expansion.

All initial approvals have been received from the CWRM to abandon the diversions on the "taro streams" to fully restore their streamflow permanently, as offered by EMI, over and above the IIFS. EMI received Department of Health approval of the Best Management Practices Plan for the Category 2 diversions. Construction on fourteen of the intakes has been completed, with ~~ongoing work~~the final phase of construction taking place on the ~~final~~last remaining intake. The ~~remaining work is dependent on the availability of~~final construction materials were delivered via helicopter ~~support. If helicopter support can be scheduled, then~~on June 28, 2023, and we anticipate completing the remaining work on the final intake in ~~Q2~~August 2023.

The Permittees have also initiated discussions with CWRM staff on IIFS compliance for the 'non-taro streams' that were part of the 2018 IIFS decision. A draft work plan was submitted to CWRM for 41 diversions on 17 additional streams that are implicated by the 2018 IIFS decision. Before issuing the needed permits to undertake the work, CWRM will need to conduct site visits to each diversion site. In the meantime, the Permittees comply with the IIFS decision regarding instream flow requirements (i.e., by individual streams and the total quantity of flow). This compliance is subject to CWRM staff verification. Connectivity requirements of the IIFS decision are being met to the extent possible without the physical modifications that require governmental reviews and approvals. The draft work plan transmitted by the Permittees to the CWRM does address means of achieving full connectivity compliance for these additional non-taro streams.

In summary, the Permittees' diversion of water under the subject 2023 RPs continues to comply with the CWRM's June 20, 2018, IIFS order concerning flow volumes, by individual streams, compliance with connectivity requirements has been met to the extent legally possible without further governmental review and approvals. Significant progress has been made on pursuing the modifications and abandonment of diversions on the seven 'taro streams,' an established and continued priority for both the permittees and the State.

2. ***There shall be no waste of water. System losses and evaporation shall not be considered as a waste of water.***

   Status: See uses outlined in response to #1 above. All diverted water is being put to beneficial agriculture use or municipal use, as the diverted water supplies the County of Maui for its Upcountry Maui water systems, the Kula Ag Park, Central Maui fire suppression needs, municipal users who do not currently have access to the County DWS delivery system, and agricultural uses in Central Maui on lands now owned and managed by Mahi Pono. Exhibit A notes system losses and evaporation as water uses, as they are an essential element of transporting water in a agricultural ditch system to the end users.

3. ***Any amount of water diverted under the RPs shall be for reasonable and beneficial use and always in compliance with the interim instream flow standards (IIFS).***

   Status: See responses to #1 and #2 above. In addition, in the fourth quarter of 2022, CWRM amended the IIFS for certain streams in the Huelo license area. Pursuant to the CWRM's decision, certain milestones were established for the submittal of certain permit applications to the CWRM to implement the amended IIFS decision. EMI met the two deadlines set for Q1 2023 and are awaiting the CWRM's processing of those applications.

4. ***Permittee shall provide a report on the progress regarding the removal of diversions and fixing of the pipe issues before the end of the RP term.***

   Status: This permit condition was initially imposed in 2018, and we believe it relates to a pipe at Pualoa (aka Puolua) Stream at the Lowrie Ditch. In a previous

status report, we reported that the pipe had been extended to provide wetted pathways for the movement of stream biota on Pualoa Stream. At the 2018 BLNR hearing on the subject RP's (for 2019), statements were made that the pipe needs to be extended further to go under the road and that two 4" rusted pipes needed to be removed. Accordingly (and as reported in previous quarterly reports), the two 4" pipes have since been removed from the watershed and a new design intended to improve fish migration has been incorporated in the diversion modification plan for compliance with the IIFS and approved by the CWRM in its approval of the Category 3 SDWPA. This specific scope of work was part of the overall work plan referenced earlier.

Road maintenance and repair activities continue in order to better facilitate access to several of the more remote intakes that are subject to Category 2 permits. We have submitted a final plan to CWRM for the modifications to Category 1 closures intended to restore the streams to as natural a condition as possible. CWRM is in the process of reviewing the plan and discussing its implementation with East Maui community groups.

5. ***Permittee shall cleanup trash and debris from revocable permit areas starting with areas that are accessible and close to streams; "trash and debris" shall be defined as " any loose or dislodged diversion material such as concrete, rebar, steel grating, corrugated metals, railroad tires, etc., that can be removed by hand (or by light equipment that can access the stream as is)".***

Status: The Permittees have established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous fieldwork. In the ~~first~~second quarter of 2023, EMI continued to be vigilant about monitoring and removing unused material. The debris found in Q4 2022 ~~has been~~was consolidated into a single location ~~and will be removed concurrently with the helicopter support necessitated by the remaining Category 2 work~~in Q1 2023, and removed in Q2 2023. Pictures of the removed debris are included as Exhibit F.

EMI will also continue removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed, which includes diversion modifications required to meet the 2018 IIFS.

EMI understands the term "Trash and Debris" is further defined as noted in the DLNR staff submittal. As mentioned previously, EMI has established several standard operating procedures to address the cleanup of trash and debris in the license areas. Besides recognizing unnecessary debris in the field during routine maintenance tasks, EMI has conducted specific identification and removal operations of debris that has been observed from previous field work. EMI also has a practice of removing any equipment and excess materials it brings into the license area to perform work on the ditch system as soon as the job(s) is completed. These practices continue to apply to the "Trash and Debris" term as more clearly defined by DLNR staff.

6. ***The RPs shall be subject to any existing or future reservations of water for the Department of Hawaiian Home Lands (DHHL);***

   Status: EMI acknowledges that the RPs shall be subject to any existing or future reservation of water for the DHHL.

7. ***Coordinate with an interim committee to discuss water usage issues in the RP areas. The committee shall consist of seven members, representing EMI/Mahi Pono, Farm Bureau, Office of Hawaiian Affairs, the Native Hawaiian Legal Corporation, the Huelo Community Association, the Sierra Club, and the County of Maui. The interim committee shall meet at least quarterly, more often as useful.***

   Status: The quarterly meeting of the RP Committee was held on Wednesday, ~~April 19~~July 26, 2023. Jayson Watts (Mahi Pono / EMI) sent an invitation via email to the ~~group~~Committee on Tuesday, ~~April 11~~July 18, 2023. The meeting was attended by Lafayette Young (Huelo Community), Ashley Obrey (NHLC / Na Moku), ~~Jerome Kekiwi Jr. (Na Moku~~Warren Watanabe (Maui County Farm Bureau), Lucienne de Naie (Sierra Club), James Kimo Landgraf (County of Maui Dept. of

Water Supply), Jayson Watts (Mahi Pono), Mark Vaught (EMI), and Grant Nakama (Mahi Pono).

EMI provided an update on the work related to the implementation of the IIFS, and Mahi Pono supplied an update on farming operations. The information provided by Mahi Pono and EMI to the ~~committee~~Committee generally mirrored the farming and IIFS updates that are included as exhibits to this quarterly report. Mahi Pono and EMI also answered follow-up questions from the Sierra Club about IIFS updates provided. The Committee also took interest in Mahi Pono's watermelon and onion crops that were harvested during the quarter. The meeting adjourned approximately 45 minutes after it started. The committee's next meeting is tentatively set for ~~July 20~~October 19, 2023.

8. ***Permittee shall therefore provide quarterly written reports to the Board of Land and Natural Resources (Board) containing (at a minimum) the following information:***

   a. *The amount of water used on a monthly basis, including the monthly amount of water delivered for: the County of Maui Department of Water Supply and the County of Maui Kula Agricultural Park; diversified agriculture; industrial and non-agricultural uses; and reservoir/fire protection/hydroelectric uses. Descriptions of diversified agricultural uses shall also provide information as to location, crop, and use of the water. Industrial and non-agricultural uses shall specify the character and purpose of water use and the user of the water~~;~~.*

      Status: The amount of water used on a monthly basis, including the monthly amount of water delivered for the County of Maui DWS and Kula Ag Park, diversified agriculture, industrial and non-agricultural uses, and reservoir/fire protection/hydroelectric uses can be found in the table attached as Exhibit A. The existence of and continued use of reservoirs is extremely important for fire safety reasons. They are a major source of water for fighting fires on Maui, which occur during the dry months of the year. The location, crop, and users of agricultural

water, and the specifics on industrial and non-agricultural uses can be found in the table attached as Exhibit B.

As Mahi Pono prepares new fields for planting, they continue to install new irrigation systems that focus on efficient water application measures. In addition to these new systems, we are also installing weed mat throughout the farm, which help the soil maintain moisture by reducing evaporation. The cumulative water efficiency effects of these initiatives can be seen in the reduced amount of water remaining in the final column of the table attached as Exhibit A.

b. *An estimate of the system loss for both the EMI ditch system and the A&B field system, also on a monthly basis.*

Status: The accepted Final Environmental Impact Statement which considers East Maui water diversions facilitated by a long-term lease contains estimates for system losses for both the EMI ditch system as well as the "*A&B field system"*.

- EMI Ditch System – As stated in the FEIS, a USGS study "concluded that it was unclear whether net seepage losses even occur in the EMI Aqueduct system, due to the large amount of tunnel in the system, as well as the seepage gains that enter the system."

- A&B Field System – An estimate of the system losses by month is as shown in the table below:

Month	EMI Ditch System (in MGD)	County's Diverted Reserve (in MGD)	Field System (in MGD)
~~January~~April	0	4.62	~~1.92~~1.74
~~February~~May	0	4.72	~~0.44~~0.53
~~March~~June	0	3.58	~~-0.43~~1.41

Average	0	4.31	~~0.64~~1.23

As noted by Condition #2 above, system losses and evaporation shall not be considered as a waste of water.

c. *For each stream that is subject to the 6/20/2018 CWRM D&O, a status update as to the degree to which the flow of each stream has been restored, and which artificial structures have been modified or removed as required by CWRM.*

Status: EMI prioritizes its compliance with the CWRM order and has been working with CWRM staff on implementation plans and permitting. EMI notes that the language of the CWRM order relating to the removal of artificial structures is spelled out on page 269 of the D&O, items i, j, and k which State in part that *"it is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed."* and "The intent of the Commission is to allow for the continued use and viability of the EMI ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS. A status update is provided in the table attached as Exhibit C. Also included in Exhibit C is a copy of the section of the CWRM order relating to the removal of artificial structures.

d. *Update on removal of trash, unused man-made structures, equipment, and debris that serve no useful purpose, including documenting any reports of such items that Permittee has received from the Department, other public or private entities and members of the general public and the action(s) taken by Permittee, if any, to remove the reported items*

Status: See above response to #5 above.

e. *The method and timeline for discontinuing the diversion of water from Waipio and Hanehoi streams into the Hoʻolawa stream, including status updates on implementation.*

Status: As the stream levels fluctuate during inclement weather, EMI personnel are dispatched to manually control the intake gates to prevent excess stream water inflow to the ditch. As for Haneho'i, all intakes have been sealed (per the 2018 D&O); therefore, no water enters the ditch from this stream. Regarding the Waipi'o stream, EMI personnel manually control the intakes on the ditch to prevent excess flow from entering the ditch. Thus, all flows to the ditch are delivered to and used by Mahi Pono and the County of Maui. The flows are no longer controlled into Hoolawa stream.

f. *A listing of all reservoirs in the A&B/EMI water system serviced by the RPs, with the following information provided for each:*

The capacity of each such reservoir;

The surface area of each such reservoir;

What fields are irrigated by each such reservoir, or in the alternative, which reservoirs service the County of Maui's domestic needs, Kula Agricultural Park farmers, and DHHL lands;

Which reservoirs are lined, and with what material, and which are not;

The estimated amount of evaporation per day from the surface of each such reservoir;

An analysis of the cost and time to line at least one such reservoir; and

Information on any reservoirs planned to be taken out of service.

Status: A table containing most of the information requested above is attached as Exhibit D. Evaporation estimates are based on actual reservoir water levels during ~~Q1~~Q2 2023, with the figures being displayed in gallons per day.

In addition to the information in Exhibit D, we have also determined an estimated unit cost of $7.00 per square foot (sloped) to line a reservoir, plus estimated engineering costs typically being between $30k - $60k per reservoir. If we apply these costs to a reservoir with a 10-acre surface area and assumed slope adjustment of 25%, then the resulting estimate would be approximately $3.85M.

g. *The number, location, timing, and approximate acreage of fires fought during the quarter using water from reservoirs supplied with water from the A&B/EMI system.*

Status: There were no fires reported during the ~~first~~second quarter of 2023.

h. *The names and locations of the reservoirs from which water was drawn to fight fires during the quarter, together with:*

(i) *Whether those reservoirs are lined or not;*

(ii) *The average depth of water in those reservoirs;*

(iii) *Estimated average monthly inflows and outflows from those reservoirs; and*

(iv) *The amount of water used for hydroelectric purposes, if any.*

Status: There were no fires reported during the ~~first~~second quarter of 2023. Permittees will work diligently to record the requested data in the event of future fires.

i. *A listing of all irrigation wells in the A&B/EMI water system serviced by the RPs, with the water levels and chloride levels in each well that is in active use noted.*

Status: In the ~~first~~second quarter of 2023, Wells 12, and 13 were in active use. Chloride levels measured during the quarter are provided below:

- *Well #2*
  - *pH – 7.7*
  - *Sodium – 250 mg/L*
  - *Water Level – 34.5 Inches*

- *Well #12*
  - *pH – ~~7.6 (12A) and 7.2 (12B)~~7.3*
  - *Sodium – ~~280~~300 mg/L ~~(12A) and 280 mg/L (12B)~~*
  - *Water Level – ~~26~~23.5 Inches*

- *Well #13*
  - *pH – ~~7.2 (13A) and 7.1 (13B)~~7.3*
  - *Sodium – ~~220~~240 mg/L ~~(13A) and 210 mg/L (13B)~~*
  - *Water Level – ~~32~~23 Inches*

j. *Each quarterly report shall be submitted in a format with tracked changes that clearly show the differences/updates from the prior quarter.*

Such quarterly reports shall be "due" to the DLNR one month after the last calendar day of the subject quarter. Thus, the reports shall come due as follows:

Q1 Report – April 30, 2022
Q2 Report – July 31, 2022
Q3 Report – October 31, 2022
Q4 Report – January 30, 2023
. . . and so on;

Status: This ~~Q1~~Q2 2023 report is the ~~third~~fourth version to implement a track-change format vs. the prior quarter. The deadline to submit quarterly reports is noted, and EMI is committed to timely submittals of all future reports.

k. *For water used for agricultural crops, the Permittee shall disclose in each quarterly report how much water was required on average for each type of crop per acre per day for the previous quarter.*[1]

[1] This condition was added at the November 10, 2022 BLNR meeting.

	Current Acreage	Q1 2023 **Approximate *Irrigation* Average*** (*GPAD = PER ACRE*)
Orchard Crops	7,817	827
Row Crops	461	551
Tropical Fruits	6	779
Energy Crops	32	529

*Figures are representative of irrigation applied during the quarter, which doesn't include rainfall. This is not representative of the crop water requirement, which is partially met to a varying degree (depending on weather) by rainfall.

	Current Acreage	Q2 2023 **Approximate *Irrigation* Average*** (*GPAD = PER ACRE*)
Orchard Crops	8,239	1,930
Row Crops	585	1,287
Tropical Fruits	6	1,805
Energy Crops	32	1,225

*Figures are representative of irrigation applied during the quarter, which doesn't include rainfall. This is not representative of the crop water requirement, which is partially met to a varying degree (depending on weather) by rainfall.

9. ***The Permittee may not divert an amount of water exceeding an average of 40.49 million gallons per day (mgd), averaged monthly, for all permits combined, further subject to all water diverted shall be for reasonable and beneficial uses.***

   Status: The ~~first~~second quarter's need for water from the East Maui streams has averaged approximately ~~12.80~~18.27 million gallons per day (MGD)~~, a lower level than expected due to unanticipated levels of rainfall. Only that~~. To comply with the permit conditions requiring all diverted water be for reasonable and beneficial use and there be no waste of water, only the amount of water that is needed is being diverted from the East Maui watershed. This amount ~~complies with the limit of an average of~~is within the 40.49 MGD~~, calculated on a~~ (monthly ~~basis,~~average) set by the BLNR at its November 10, 2022, meeting~~.~~ and the 31.50 MGD (monthly average) cap imposed by Judge Crabtree in his June 16, 2023 Decision on Appeal; and Interim Modification of Permits Pursuant to HRS 91-14(g) and July 14, 2023 Decision on Appeal and Order. This water is being used to supply the County of Maui for its Nahiku and Upcountry Maui water systems, the Kula Ag Park, Maui Invasive Species Committee, fire suppression needs, historical

industrial/non-agricultural use, and agricultural uses in Central Maui, on lands now owned and managed by Mahi Pono.

10. ***For RP S-7266, the area identified as the Hanawi Natural Area Reserve shall be removed from the revocable permit premises. Additionally, A&B/EMI shall continue discussions with the Department's Division of Forestry and Wildlife ("DOFAW") to identify additional forest reserve lands to be removed from the license areas.***

    Status: Meetings between EMI and DOFAW have been held and were focused on identifying those areas that are essential to EMI's ongoing operations, such as access routes and buffer areas around the EMI ditch system to ensure the reliable and safe operation of the system as well as the safety of EMI employees. The most recent of these meetings ~~in Q1~~, while not technically in Q2 2023 ~~were~~, Fair was held on ~~Wednesday, January 29, 2023 and February 24, 2023. Both meetings were~~Thursday, July 20, 2023, and was held via Zoom. EMI has expressed to DOFAW a willingness to reduce the license/lease area as long as the permitted area (a) meets the collective needs of DLNR and DOFAW, (b) continues to allow EMI to operate its ditch system in a safe and efficient manner, ~~and~~ (c) fairly allocates liability exposure resulting from the planned increase in the amount of public access into the license/lease area, and (d) does not affect the access to state water afforded by existing or future RPs and water license/lease(s). DOFAW and EMI have identified preliminary locations for suitable crossing points over the EMI system to State-owned lands located upslope. Discussions between EMI and DOFAW on the reduced lease/license area will continue.

11. ***Mahi Pono is to advise any third-party lessees, that any decisions they make is based on availability of water on a month-to-month basis renewed annually unless there is a permanent lease***

    Status: All third-party lessees have been informed through existing language in their lease agreements that the availability of water is subject to change based on various conditions, one of which would be the nature of the water availability

from East Maui through an annually renewed revocable permit or an eventual permanent lease.

12. ***For the streams in the revocable permit area that have not had interim instream flow standards set, Permittee shall continue to clean up and remove debris from the permit areas and staff shall inspect and report every three months on the progress of the clean-up. For purposes of clean-up, debris shall not include any structure and equipment that is either currently used for the water diversions, or for which CWRM has not required removal.***

Status: EMI has continued to remove debris and trash from stream areas. These efforts include locations surrounding the streams located outside of the IIFS area.

13. ***Permittee shall require its staff to inspect the streams and report on whether the lands could be developed for agricultural land or water leases.***

Status: EMI understands that, in general, State-owned land adjacent to streams in East Maui are conservation lands in forest reserves which may not be suitable for agricultural development. An agricultural assessment for the East Maui lands/watershed, including the state-owned lands, was included as part of the environmental impact statement ("FEIS") prepared by the Permittees for the proposed state water lease and accepted by the State. In addition, the FEIS contemplated the use of those lands as a collection area for a state water lease.

14. ***The RPs shall also comply with all conditions required by the 6/20/2018 CWRM D&O, which includes meeting the IIFS set forth in paragraph "h" of the "Decision and Order " section of the D&O. That paragraph provides a chart showing the name of the stream, the restoration status, the amended IIFS value, and an IIFS location, if applicable, for each stream, as follows:***

	Restoration	BFQs	IIFS	

Stream Name	Status	at IIFS (cfs)	Value (cfs)	IIFS Location
Makapipi	Full	1.3	n/a	Above Hana Highway
Hanawi	Connectivity	4.6	0.92	Below Hana Highway
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch
Waiaaka	None	0.77	0.77	Above Hana Highway
Pa‘akea	Connectivity	0.9	0.18	At Hana Highway
Waiohue	Full	5.0	n/a	At Hana Highway
Pua‘aka‘a	Connectivity	0.9	0.18	Above Hana Highway
Kopiliula	H90	5.0	3.2	Below Hana Highway
East Wailuaiki	H9o	5.8	3.7	At Hana Highway
West Wailuaiki	Full	6.0	n/a	Above Hana Highway
Wailuanui	Full	6.1	n/a	At Hana Highway
Ohia/Waianu	None	4.7	n/a	None.
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch
Palauhulu	Full	11	n/a	Above Hana Highway
Pi‘ina‘au	Full	14	n/a	Above Hana Highway
Nua‘ailua	Connectivity	0.28	2.2	To be determined
Honomanu	H9o	4.2	4.2	Above Hana Highway
Punalau/Kolea	H9o	4.5	2.9	Above Hana Highway
Ha‘ipua‘ena	Connectivity	4.9	1.36	Below Hana Highway
Puohokamoa	Connectivity	8.4	1.1	Above Hana Highway
Wahinepe‘e	None	0.9	0.9	Above Hana Highway
Waikamoi	H9o	6.7	3.8	Above Hana Highway
Hanehoi	Full	2.54	n/a	Upstream of Lowrie Ditch
Huelo (Puolua)	Full	1.47	n/a	Downstream of Haiku Ditch
Honopou	Full	6.5	n/a	Below Hana Highway

Status: See response to #1 above.

15. ***Permittee shall cooperate with CWRM and the Department's Division of Aquatic Resources (DAR) in facilitating studies, site inspections and other actions as necessary to address the streams in the RP areas that are not covered by the 6/20/2018 CWRM D&O.***

Status: EMI continues to be in contact with CWRM personnel regarding site visits to evaluate diversions that weren't covered by the 2018 D&O. Such site visits most recently occurred in ~~Q1~~Q2 2023, related to the amendment of the Huelo Streams IIFS passed by CWRM in 2022. CWRM field staff conducts these site visits on a stream-by-stream basis. EMI has previously contacted DAR and has expressed willingness to cooperate with any DAR activities related to the DAR work on streams outside the license area.

16. ***Permittee shall work with CWRM and DOFAW to determine whether there are alternatives to diversion removal that effectively prevent mosquito breeding and can be feasibly implemented. Permittee shall include the status of alternatives in its quarterly reports.***

Status: EMI has worked with CWRM in the context of the earlier discussion with DOFAW regarding diversion structures that can impede free flow of water and create habitat for mosquito breeding. Considerable evaluation and analysis have been conducted by the CWRM and EMI on nine "Category 1" diversions regarding additional work to be done on these diversions to mitigate these issues. CWRM will meet with stakeholders to discuss this mitigation plan and report back to EMI as to the additional diversion modification work to be undertaken.

17. ***If the Board finds that a use of water is not reasonable and beneficial and does not comply with the permitted uses, Permittee shall cease such use within a timeframe as determined by the Department of Land and Natural Resources (Department).***

Status: EMI remains willing to comply with this requirement and stands ready to assist the Board in any way it can regarding this matter.

18. ***For water used for agricultural crops, Permittee is to estimate how much water is required for each crop per acre per day.***

Status: Water requirements for each crop is highly dependent on several factors, including soil composition, weather, and the maturity of the crop itself. That said, the average water requirements for Mahi Pono's agricultural crops at full maturity are estimated to be as follows:

- Orchard Crops - 5,089 gallons per acre per day
- Row Crops - 3,392 gallons per acre per day
- Tropical Fruits - 4,999 gallons per acre per day
- Energy Crops - 3,392 gallons per acre per day

These estimates are consistent with the estimated water requirements contained in Table 3 of Appendix I (Agricultural and related Economic Impacts) of the EIS. The average water requirements listed above are reflective of the crops' collective water needs (irrigation & rainfall) at full maturity. This differs from the reported irrigation average, which is reflective of the irrigation consumption (excluding rainfall) of immature crops.

19. ***Permittee shall submit to the Department a plan for their proposed upgrades, including an implementation timeline, to the irrigation system intended to address CWRM' s concerns no later than December 1, 2022. Permittee is to work with the Maui Fire Department to determine what their exact needs are.***

Status: The Mahi Pono System Efficiency Upgrades Report was submitted to the BLNR on November 30, 2022. A supplemental report requested by the BLNR containing additional information on system losses was also submitted on March 24, 2023.

An updated response to the Permittees' request for information regarding the department's requirements is attached as Exhibit E. Permittees will continue to

work with the Maui Fire Department and will report on any future developments that may allow for additional estimates to be shared.

20. Permittee shall pay the monthly rent amounts as determined by the Board; the 2023 monthly rent amounts shall be those set by the Board at its December 8, 2022, meeting.

Status: EMI has remained current in its payment of rent to the State for the subject revocable permits.

21. Permittee shall look into supplying the Maui Invasive Species Committee with water, and if feasible, and despite it not being an agricultural use, be considered a reasonable and beneficial and permitted use under the RP.

Status: EMI/Mahi Pono have successfully provided MISC with water to support their operations starting in Q1 2023. ~~The~~In Q2, EMI successfully installed a meter on the pipeline supplying MISC with water. The total amount of water used by MISC ~~during Q1 2023 is projected to be minimal (and~~between May – July 2023 was 4,800 gallons, and the Q2 2023 portion of this use is accounted for in the "*Other*" column in Exhibit A~~), but EMI is in the process of metering the MISC's water use. That meter should be installed in Q2 2023.~~.

22. DOFAW shall discuss with Maui Fire Department and report to the Board at the next RP renewal whether ocean water can feasibly be substituted for some of the firefighting needs. Effects of applying ocean water shall also be considered.

Status: This condition is not applicable to A&B/EMI. It has been included in this report for completeness.

23. At or before the next renewal of the RP's, or before a request for authorization to lease water rights at public auction, at a scheduled meeting of the Board, the Permittees shall cooperate with the Department's Land Division and DOFAW, who the Board directs to bring a proposed watershed management fee and/or requirements for the Permittees to implement management actions in the watershed.

~~Status: EMI will cooperate with the Department's Land Division and DOFAW on the development of their proposal related to watershed management. The Permittees met with DOFAW on January 11, 2023, where DOFAW presented its current draft of a watershed management plan for East Maui and fee concepts. The Permittees responded with a list of follow-up questions seeking additional clarity from DOFAW on some of the concepts proposed in the preliminary draft of its WMP. The Permittees continued to follow-up with DOFAW throughout the quarter and received a response consisting of an updated draft on April 19, 2023. The Permittees are still evaluating the changes proposed by this most recent draft. The Permittees will continue to work with DOFAW/DLNR on a fair and equitable WMP and associated fee.~~

Status: At the June 23, 2023 meeting of the Board of Land and Natural Resources, the BLNR approved a WMP fee for the 2023 RPs. That fee was acceptable to EMI for the purposes of the 2023 RP, but it was noted at the hearing that it was a compromise fee, and that the methodology used would not be appropriate for calculating the long-term water lease WMP fee, nor for future RP fees, if necessary. EMI has pledged to continue to work with DOFAW and the Land Division on an appropriate WMP and methodology for determining future WMP fees to be assessed.

EXHIBIT A – MONTHLY WATER USAGE

All Figures in Millions of Gallons per Day ("MGD")

Month	East Maui Surface Water @ Honopou	East Maui Surface Water Gained from Area Between Honopou and Maliko	Groundwater Pumped on-Farm	County of Maui DWS [1]	County of Maui Ag Park [2]	Diversified Agriculture [3]	Historic / Industrial Uses [4]	Reservoir / Seepage / Fire Protection / Evaporation / Dust Control / Hydroelectric [5]	
								Diverted Reserve to meet Contractual Obligation to County DWS & Ag Park [6]	Other [7]
January	15.57	0.67	2.92	2.57	0.46	9.72	0.03	4.46	1.92
February	10.60	0.96	0.00	1.22	0.29	3.59	0.03	6.00	0.44
March	12.24	1.32	0.48	1.50	0.39	6.92	0.04	5.62	-0.43
Quarterly Average	**12.80**	**0.25**	**1.13**	**1.76**	**0.38**	**6.74**	**0.03**	**5.36**	**0.64**

Month	East Maui Surface Water @ Honopou	East Maui Surface Water @ Maliko	East Maui Surface Water Gained from Area Between Honopou and Maliko	Groundwater Pumped on-Farm	County of Maui DWS [1]	County of Maui Ag Park [2]	Diversified Agriculture [3]	Historic / Industrial Uses [4]	Reservoir / Seepage / Fire Protection / Evaporation / Dust Control / Hydroelectric [5]	
									Diverted Reserve to meet Contractual Obligation to County DWS & Ag Park [6]	Other [7]
April	14.55	17.99	3.44	4.41	2.57	0.31	13.11	0.05	4.62	1.74
May	21.04	23.97	2.93	2.66	2.16	0.62	18.55	0.05	4.72	0.53
June	19.21	19.99	0.78	7.45	3.31	0.61	18.48	0.05	3.58	1.41
Quarterly Average	**18.27**	**20.65**	**2.38**	**4.84**	**2.68**	**0.51**	**16.71**	**0.05**	**4.31**	**1.23**

1. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

2. The numbers in this column are based on reports received from the County of Maui and have not been independently verified by EMI.

3. Diversified Agriculture includes the users/uses described in Exhibit B.

4. Historical/Industrial Uses are non-HC&S uses that have historically relied on water from the EMI Ditch System, even after the closure of HC&S. These include uses by entities located either adjacent to or within the boundaries of the farm and are further described in Exhibit B. Historically, the use of water by these entities was not regularly metered, and a historical estimate of 1.1 MGD was developed and previously used as the amount of collective water consumption by these entities. Mahi Pono installed meters in March 2022 thus, starting with the Q2 2022 report, the figures reported in this column will reflect actual usage based on those meters. As previously mentioned, HC&D's water usage is no longer accounted for in this column as HC&D is obtaining water from its own well.

5. The numbers in these columns include water not separately accounted for in the columns to the left. The ~~EMI system is operated in a manner that ensures continuous water availability in the~~water in on-farm reservoirs ~~to meet~~is available for use by the County of ~~Maui's needs for fire protection for~~Maui against brush fires, the risk of which has increased due to the reduction of the irrigated acreage following the cessation of sugar cultivation but is decreasing as Mahi Pono continues to implement its farm plan. Seepage and evaporation inherent to an agricultural ditch system are also included in this column. The water used by the Mahi Pono hydroelectric system is non-consumptive and is returned to the ditch after being used to generate clean energy. The water is re-used consumptively by one of the other uses, or if there is no reuse, ends up in the reservoirs.

6. Operationally and pursuant to a contractual agreement with the County of Maui, a minimum of approximately 6 MGD must be reliably conveyed to / made available to the County each and every day so that the County has flexibility regarding when to run its plant depending on weather conditions, demand, water available from its Piiholo plant, etc. Additionally, a minimum of approximately 1.5 MGD must be reliably conveyed to / made available to the County each and every day so that the County can be flexible regarding how to meet the needs of the Ag Park. The numbers in this sub-column reflect the portion of the 7.5 MGD that is made available to the County every day, that the County does not use (i.e., ~~7.5mgd~~7.5 MGD less the sum of the amounts used by the County DWS at Kamole Weir and Ag Park). Water that is not used by the County remains in the Ditch System, is transported to Central Maui and any excess is directed to reservoirs located on the former plantation.

7. The numbers in these columns reflect the amount of water not separately accounted for in the columns entitled "County of Maui DWS," "County of Maui Ag Park," "Diversified Agriculture," and "Historic/Industrial Uses" less the reserve needed to meet EMI's contractual obligations to the County of Maui. As has been explained in the past, ~~although~~ EMI/Mahi Pono cannot rely on receiving any specific amount of the ~~diverted reserve~~water provided to the County of Maui to meet the contractual ~~obligation~~obligations to the County DWS and Kula Ag Park that is not actually consumed by the County ("~~Diverted Reserve~~DIVERTED RESERVE") for the purposes of planning to meet the irrigation needs of Mahi Pono's crops. The amount is unpredictable and unreliable; however, EMI/Mahi Pono do make an effort to use the Diverted Reserve for crop irrigation when feasible. ~~The negative number in this column for the month of March reflects EMI/Mahi Pono's use of a portion of the Diverted Reserve in the month of March for irrigation purposes.~~

EXHIBIT B – WATER USAGE SPECIFICS

Diversified Agriculture Use

Entity	Crop	Field	Acreage
Mahi Pono	Citrus	300	305
Mahi Pono	Coffee	301	273
Mahi Pono	Citrus	303	161
Maui Best (Tenant)	Sweet Potato	408	281
Maui Best (Tenant)	Sweet Potato	409	180
Mahi Pono	Citrus	501	83
Mahi Pono	Citrus	502	290
Mahi Pono	Citrus	503	144
Mahi Pono	Citrus	504	294
Mahi Pono	Citrus	505	240
Mahi Pono	Citrus	507	189
Mahi Pono	Citrus	508	183
Mahi Pono	Citrus	508B	213
Mahi Pono	Citrus	509	79
Mahi Pono	Citrus	510	181
Mahi Pono	Citrus	511	161
Mahi Pono	Citrus	512	132
Mahi Pono	Citrus	602	196
Mahi Pono	Citrus	603	262
Mahi Pono	Citrus	604	343
Mahi Pono	Citrus	605	394
Mahi Pono	Citrus	606	134
Mahi Pono	Mixed	608	70
Mahi Pono	Citrus	610	40
Mahi Pono	Citrus	701	269
Mahi Pono	Citrus	702	232
Mahi Pono	Citrus	703	150
Mahi Pono	Citrus	704	214
Mahi Pono	Citrus	708	299
Mahi Pono	Citrus	800	100
Mahi Pono	Citrus	801	281
Mahi Pono	Citrus	803A	127
Mahi Pono	Pongamia	803B	32
Mahi Pono	Avocado	803C	6
Mahi Pono	Coffee	807	120
Mahi Pono	Mixed	807	39
Mahi Pono	Citrus	808	158
Mahi Pono	Citrus	809	251
Mahi Pono	Citrus	809X	72
Mahi Pono	Citrus	813	448
Mahi Pono	Citrus	814	342
Mahi Pono	Citrus	818	266
Mahi Pono	Citrus	911	82
TOTAL			***8316***

Entity	Crop	Field	Acreage
Mahi Pono	Citrus	300	305
Mahi Pono	Coffee	301	273
Mahi Pono	Citrus	303	161
Maui Best (Tenant)	Sweet Potato	408	281
Maui Best (Tenant)	Sweet Potato	409	180
Mahi Pono	Citrus	501	83
Mahi Pono	Citrus	502	290
Mahi Pono	Citrus	503	144
Mahi Pono	Citrus	504	294
Mahi Pono	Citrus	505	240
Mahi Pono	Citrus	507	189
Mahi Pono	Citrus	508	183
Mahi Pono	Citrus	508B	213
Mahi Pono	Citrus	509	79
Mahi Pono	Citrus	510	181
Mahi Pono	Citrus	511	161
Mahi Pono	Citrus	512	132
Mahi Pono	Citrus	601	221
Mahi Pono	Citrus	602	196
Mahi Pono	Citrus	603	262
Mahi Pono	Citrus	604	343
Mahi Pono	Citrus	605	394
Mahi Pono	Citrus	606	134
Mahi Pono	Mixed	608	70
Mahi Pono	Citrus	610	40
Mahi Pono	Citrus	701	269
Mahi Pono	Citrus	702	232
Mahi Pono	Citrus	7036	150
Mahi Pono	Citrus	704	214
Mahi Pono	Row Crops	706ON	42
Mahi Pono	Row Crops	707W	82
Mahi Pono	Citrus	708	299
Mahi Pono	Citrus	800	100
Mahi Pono	Citrus	801	281
Mahi Pono	Citrus	803A	127
Mahi Pono	Pongamia	803B	32
Mahi Pono	Avocado	803C	6
Mahi Pono	Coffee	807	120
Mahi Pono	Mixed	807	39
Mahi Pono	Citrus	808	158
Mahi Pono	Citrus	809	251
Mahi Pono	Citrus	089X	72
Mahi Pono	Citrus	813	448
Mahi Pono	Citrus	814	342
Mahi Pono	Citrus	818	266
Mahi Pono	Citrus	911	82
Mahi Pono	Citrus	911B	201
TOTAL			***8,862***

EXHIBIT B – WATER USAGE SPECIFICS (Continued)

Historic / Industrial Uses

Water Users	Source/Delivery Point	Water User's Location	Relationship to EMI / A&B / Mahi Pono	Use
Imua Energy Maui LLC, dba Maul EKO Systems LLC (Tenant of County Central Maui Landfill)	Pumped from Haiku Ditch	3-8-003-019	Gov't Tenant	General Use for Compost Operation
HC&S Mill Area Fire Suppression	702 Cistern	3-8-006-001 CPR #I	A&B - Owned	Fire suppression for ag offices & Puunene Post Office
New Leaf Ranch (Non-Profit)	702 Cistern	3-8-006-029	Tenant	Irrigation water for non-profit providing ag-related work opportunities and training as mental health & substance use dependency treatment
Costo Maddela	Haiku Ditch	3-8-001-001	Tenant	Pasture & Animal Water
Harriet, Michael & Jordan Santos	Kauhikoa Ditch	2-5-001-018 & 019	Tenant	Pasture & Animal Water
Leonard Pagan	Kauhikoa Ditch	2-5-002-001	Tenant	Pasture & Animal Water
Harry Cambra	Kauhikoa Ditch	2-5-003-026,027,036,037,038	Tenant	Pasture & Animal Water

EXHIBIT C – CWRM ORDER STATUS UPDATE
Section i, j, & k from CWRM D&O

i. It is intended that diversion structures only need to be modified to the degree necessary to accomplish the amended IIFS and to allow for passage of stream biota, if needed.

j. This Order does not require that every diversion on every tributary be removed or modified, the Commission is only looking at modifications to main stem and major diversions to accomplish the amended IIFS set forth above. The Commission also recognizes that it is not the purpose of this proceeding to determine how the diversions will be modified. That issue will be before the Commission in a subsequent process.

k. The intent of the Commission is to allow for the continued use and viability of the EMI Ditch system and will not require the complete removal of diversions unless necessary to achieve the IIFS.

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EXHIBIT C – CWRM ORDER STATUS UPDATE (Continued)

IIFS STREAM UPDATE

Stream Name	*Restoration Status*	*BFQ50 at IIFS (cfs)*	*IIFS Value (cfs)*	*IIFS Location*	*Current Status*
Makapipi	Full	1.3	n/a	Above Hana Highway	Gate removed, water flowing downstream below intake
Hanawi	Connectivity	4.6	0.92	Below Hana Highway	Gate open, water flowing downstream below intake
Kapaula	Connectivity	2.8	0.56	On diversion at Koolau Ditch	Main gate open, water flowing downstream below intake
Waiaaka	None	0.77	0.77	Above Hana Highway	Gate open, water flowing downstream below intake
Pa'akea	Connectivity	0.9	0.18	At Hana Highway	Intake gate closed, water flowing downstream over dam
Waiohue	Full	5	n/a	At Hana Highway	Intake gate closed, sluice gate removed. All water flowing downstream.
Pua'aka'a	Connectivity	1.1	0.2	Above Hana Highway	Gate open, water flowing downstream below intake
Kopiliula	H90	5	3.2	Below Hana Highway	Main gates open, ditch control gates closed. Water flowing downstream.
East Wailuaiki	H90	5.8	3.7	At Hana Highway	Gates open, water flowing downstream below intake
West Wailuaiki	Full	6	n/a	Above Hana Highway	Gates open, water flowing downstream below intake
Wailuanui	Full	6.1	n/a	At Hana Highway	All intakes sealed (Category 1) water flowing downstream below intake
Ohi'a/Waianu	None	4.7	n/a	None	No diversion
Waiokamilo	Full	3.9	n/a	Below diversion at Koolau Ditch	All intakes closed, water flowing downstream
Palauhulu	Full	11	n/a	Above Hana Highway	All water either passing intakes or flowing out of the Kano sluice gate. Water flowing downstream.
Pi'ina'au	Full	14	n/a	Above Hana Highway	Intake sealed, water flowing downstream.
Nua'ailua	Connectivity	0.28	2.2	To Be Determined	Intake gate closed, water flowing downstream over dam
Honomanu	H90	4.2	4.2	Above Hana Highway	All 4 diversion sluice gates are open, water flowing downstream
Punalau/Kolea	H90	4.5	2.9	Above Hana Highway	Sluice gate open, water flowing downstream below intake
Haipua'ena	Connectivity	4.9	1.36	Below Hana Highway	Intake gate closed, water flowing downstream, dam will require modification
Puohokamoa	Connectivity	8.4	1.1	Below Hana Highway	Intake gate will be used to ensure water flowing downstream, intake dam will require significant modification
Wahinepee	None	0.9	0.9	Above Hana Highway	No diversion. Water flowing downstream.
Waikamoi	H90	6.7	3.8	Above Hana Highway	Center ditch sluice gate open. Water flowing downstream.
Hanehoi	Full	2.54	n/a	Upstream of Lowrie Ditch	Intakes sealed. Water flowing downstream.
Huelo (Puolua)	Full	1.47	n/a	Downstream of Haiku Ditch	Lowrie intake will require significant modifications & corresponding permit approvals / Haiku intake sealed
Honopou	Full	6.5	n/a	Below Hana Highway	Three sluice gates open, one intake sealed. One of two Wailole intakes sealed, water flowing downstream

EXHIBIT D – RESERVOIR INFORMATION

EXHIBIT D

Reservoir No.	Tax Map Key	Capacity Million Gallons	Surface Area Acres	Fields Feed by Reservoir	Lined	Type Material	Evaporation Rate (Average Gal/Day)****
14	2-5-04:39	9.50	1.50	100; 101	No	Earthen	532
15	2-5-04:39	8.30	1.10	101	No	Earthen	0
20	2-5-03:10	48.80	10.20	312; 314	No	Earthen	0
21	2-5-04:39	18.60	6.90	111; 113; 200	No	Earthen	0
22	2-5-03:10	43.80	10.60	201; 202	No	Earthen	0
24	2-5-03:10	15.00	3.60	201	Yes	Concrete	0
25	2-5-03:09	40.20	9.70	205	No	Earthen	43,031
30	2-5-03:01	21.00	9.00	300; 312	No	Earthen	0
33	2-5-02:02	46.50	8.00	304; 304; 313	No	Earthen	32,442
40	2-5-02:01	62.80	13.50	410; 400; 401; 413 (County Use)	No	Earthen	62,347
42	2-5-02:01	10.40	3.20	400; 401; 403	No	Earthen	14,130
52	3-8-03:04	74.00	20.00	504; 511	No	Earthen	0
60	3-8-01:06	80.50	20.80	600; 611	No	Earthen	0
61	3-8-01:01	53.10	9.00	604	No	Earthen	41,138
70	3-8-01:01	19.30	5.00	Mud Pile 710	No	Earthen	0
80	3-8-03:02	41.10	12.00	800; 801	No	Earthen	0
81	3-8-04:22	36.70	13.80	803 805 808 809	No	Earthen	55,797
82	3-8-04:22	17.90	7.40	810; 811; (812; 815; 816; 818; 819; 822; 823; Res. Ditch)	No	Earthen	0
84	3-8-03:02	35.10	8.00	701; 702; 703; (807; 813; 814; Res. Ditch)	No	Earthen	10,878
90	3-8-08:05	45.00	15.80	737; 761; 915; 917	No	Earthen	75,586
Haiku	(2)2-7-003:055 & 081	57.9	27.30	Haiku Ditch	No	Earthen	0
Pauwela	(2)2-7-003:030 & 056/2-7-008:038	32.5	6.80	Haiku Ditch	No	Earthen	0
Peahi	(2)2-8-002:018	22	5.80	Haiku Ditch	No	Earthen	0
Kapalaalaea	(2)2-8-007:001	49.7	8.70	Haiku Ditch	No	Earthen	0
Papaaea	(2)2-9-014:004	42.5	9.00	Center Ditch to Lowrie Ditch	No	Earthen	Unregulated/Rarely Used
9	2-5-004:039	1.00	NA	110	No	Earthen	Unregulated/Rarely Used
10	2-5-004:039	9.50	NA	116	No	Earthen	Unregulated/Rarely Used
12	2-5-004:039	9.00	6.70	109	No	Earthen	Unregulated/Rarely Used
23	2-5-005:019	13.70	NA	200	Yes*	Concrete/rubber	Unregulated/Rarely Used
26	2-5-005:019	10.10	NA	208	No	Earthen	Unregulated/Rarely Used
29	2-5-005:019	9.90	NA	213	No	Earthen	Unregulated/Rarely Used
31	2-5-003:031	5.10	NA	303	No	Earthen	Unregulated/Rarely Used
32	2-5-002:002	9.80	NA	304	No	Earthen	Unregulated/Rarely Used
34	2-5-003:010	8.10	NA	306	No	Earthen	Unregulated/Rarely Used
35	2-5-002:002	15.00	5.40	310; 311; 505	No	Earthen	Unregulated/Used Sparingly
41	2-5-002:001	8.90	NA	402; 404	No	Earthen	Unregulated/Rarely Used
43	2-5-001:001	13.50	4.00	409; 404	No	Earthen	Unregulated/Rarely Used
44	2-5-001:008	3.60	NA	Above 417;	No	Earthen	Unregulated/Rarely Used
45	2-5-001:008	4.20	NA	415; 414; 418	Yes	Concrete	Unregulated/Rarely Used
50	3-8-003:005	8.40	NA	209; 500; 507; 508	No	Earthen	Unregulated/Used Sparingly
51	3-8-003:004	15.20	NA	502; 505	No	Earthen	Unregulated/Rarely Used
83	3-8-004:002	6.40	4.70	817; 821	No	Earthen	Unregulated/Rarely Used

No: all reservoirs are currently in use.
*Reservoir 23 was lined with concrete/rubber. Lining is currently deteriorated.
**Kaupakalua decommissioned in 2021/2022.
***Kapalaalaea decommissioning project begins in 2023.
****Evaporation rate is the average gallons per day evaporation for the quarter

Unregulated/Used Sparingly = In and out water ~1 day
Unregulated/Rarely Used = Passthrough only

EXHIBIT D

Reservoir No.	Tax Map Key	Capacity Million Gallons	Surface Area Acres	Fields Feed by Reservoir	Lined	Type Material	Evaporation Rate (Average Gal/Day)****
14	2-5-04:39	9.50	1.50	100; 101	No	Earthen	0
15	2-5-04:39	8.30	1.10	101	No	Earthen	0
20	2-5-03:10	48.80	10.20	312; 314	No	Earthen	0
21	2-5-04:39	18.60	6.90	111; 113; 200	No	Earthen	0
22	2-5-03:10	43.80	10.60	201; 202	No	Earthen	0
24	2-5-03:10	15.00	3.60	201	Yes	Concrete	0
25	2-5-03:09	40.20	9.70	205	No	Earthen	57,467
30	2-5-03:01	21.00	9.00	300; 312	No	Earthen	0
33	2-5-02:02	46.50	8.00	304; 304; 313	No	Earthen	49,539
40	2-5-02:01	62.80	13.50	410; 400; 401; 413 (County Use)	No	Earthen	79,606
42	2-5-02:01	10.40	3.20	400; 401; 403	No	Earthen	19,212
52	3-8-03:04	74.00	20.00	504; 511	No	Earthen	0
60	3-8-01:06	80.50	20.80	600; 611	No	Earthen	0
61	3-8-01:01	53.10	9.00	604	No	Earthen	63,674
70	3-8-01:01	19.30	5.00	Mud Pile 710	No	Earthen	0
80	3-8-03:02	41.10	12.00	800; 801	No	Earthen	0
81	3-8-04:22	36.70	13.80	803 805 808 809	No	Earthen	94,506
82	3-8-04:22	17.90	7.40	810; 811; (812; 815; 816; 818; 819; 822; 823; Res. Ditch)	No	Earthen	0
84	3-8-03:02	35.10	8.00	701; 702; 703; (807; 813; 814 Res. Ditch)	No	Earthen	0
90	3-8-08:05	45.00	15.80	737; 761; 915; 917	No	Earthen	120,379
Haiku	(2)2-7-003:030 & 056/2-7-008:038	57.9	27.30	Haiku Ditch	No	Earthen	0
Pauwela	(2)2-7-003:030 & 056/2-7-008:038	32.5	6.80	Haiku Ditch	No	Earthen	0
Peahi	(2)2-8-002:018	22	5.80	Haiku Ditch	No	Earthen	0
Kapalaalaea	(2)2-8-007:001	49.7	8.70	Haiku Ditch	No	Earthen	0
Papaaea	(2)2-9-014:004	42.5	9.00	Center Ditch to Lowrie Ditch	No	Earthen	0
9	2-5-004:039	1.00	NA	110	No	Earthen	Unregulated/Rarely Used
10	2-5-004:039	9.50	NA	**116**	No	Earthen	Unregulated/Rarely Used
12	2-5-004:039	9.00	6.70	109	No	Earthen	Unregulated/Rarely Used
23	2-5-005:019	13.70	NA	200	Yes*	Concrete/rubber	Unregulated/Rarely Used
26	2-5-005:019	10.10	NA	208	No	Earthen	Unregulated/Rarely Used
29	2-5-005:019	9.90	NA	213	No	Earthen	Unregulated/Rarely Used
31	2-5-003:031	5.10	NA	303	No	Earthen	Unregulated/Rarely Used
32	2-5-002:002	9.80	NA	304	No	Earthen	Unregulated/Rarely Used
34	2-5-003:010	8.10	NA	306	No	Earthen	Unregulated/Rarely Used
35	2-5-002:002	15.00	5.40	310; 311; 505	No	Earthen	Unregulated/Used Sparingly
41	2-5-002:001	8.90	NA	402; 404	No	Earthen	Unregulated/Rarely Used
43	2-5-001:001	13.50	4.00	409; 404	No	Earthen	Unregulated/Rarely Used
44	2-5-001:008	3.60	NA	Above 417;	No	Earthen	Unregulated/Rarely Used
45	2-5-001:008	4.20	NA	415; 414; 418	Yes	Concrete	Unregulated/Rarely Used
50	3-8-003:005	8.40	NA	209; 500; 507; 508	No	Earthen	Unregulated/Used Sparingly
51	3-8-003:004	15.20	NA	502; 505	No	Earthen	Unregulated/Rarely Used
83	3-8-004:002	6.40	4.70	817; 821	No	Earthen	Unregulated/Rarely Used

Not all reservoirs are currently in use.

*Reservoir 23 was lined with concrete/rubber. Lining is currently deteriorated.

**Kaupakalua decommissioned in 2021/2022.

***Kapalaalaea decommissioning project begins in 2023.

****Evaporation rate is the average gallons per day evaporation for the quarter

EXHIBIT E – MAUI FIRE DEPARTMENT RESPONSE

MICHAEL P. VICTORINO
Mayor
BRADFORD K. VENTURA
Fire Chief
GAVIN L.M. FUJIOKA
Deputy Fire Chief

DEPARTMENT OF FIRE & PUBLIC SAFETY
COUNTY OF MAUI
200 DAIRY ROAD
KAHULUI, HI 96732

October 11, 2022

Ms. Suzanne D. Case
State of Hawai'i
Department of Land and Natural Resources
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Subject: **Estimate for Water Requirement for Fire Response by the County of Maui, Department of Fire and Public Safety**

Dear Ms. Case,

This letter is in response to a request to provide information regarding the estimate for water to be used in response to a brush fire arising in the central valley of Maui. Whether or not fire exists on public or private lands, it is our mission to protect life and property.

As you may know, Mahi Pono's farm is a vital source of water in the majority of the areas in and around Central Maui. From filling our tankers and mobile bladders to Air One dipping water from surrounding reservoirs, the water from the Mahi Pono farm is a critical part of our ability to execute our emergency plans in the event of a brush fire.

An estimate of our water usage during an emergency response depends on several different things, including – but not limited to – the size and location of the fire, the fuel load, proximity to other non-farm sources, weather conditions (wind speed and direction), and the time of day (helicopters do not assist in darkness for safety reasons). Most importantly, water usage is affected by the proximity of the fire relative to residences, property, and human life, which in an emergency situation, must be considered the highest priority. Given all of the above-mentioned variables, it would be exceedingly difficult to accurately estimate the amount of water necessary to bring the fire under control.

EXHIBIT E – MAUI FIRE DEPARTMENT RESPONSE (cont.)

A letter was submitted on June 22, 2021, detailing the amount of water that could be used by each fire apparatus on a per hour basis in response to a wildland fire, however, the total amount of hours of use for each apparatus is directly related to the many factors mentioned above.

A copy of the June 22, 2021, letter is attached for your reference.

Sincerely,

HENRY LINDO, Jr.
Assistant Chief of Operations

EXHIBIT F – Pictures of Debris Removed during Q2 2023

November 30, 2022

The Honorable Suzanne Case, Chair
and Members of the Board of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

RE: Revocable Permit Nos. S-7263, S-7264, and S-7265 issued to Alexander & Baldwin, Inc. ("**A&B**") and Revocable Permit No. S-7266 issued to East Maui Irrigation Company, Limited ("**EMI**") (collectively, the "**RPs**") for Water Use on the Island of Maui

Dear Chair Case,

A&B/EMI hereby submit the attached document, pursuant to condition 19 imposed by the Board of Land and Natural Resources ("**BLNR**") on the continuation of the RPs for calendar year 2022, as articulated in the Findings of Fact, Conclusions of Law, and Decision and Order filed by the BLNR on June 30, 2022.

Please do not hesitate to contact us should you have any questions on the attached document.

Sincerely,

Mark Vaught, EMI

Grant Nakama, Mahi Pono

cc: Ian Hirokawa, DLNR Land Division (via email)

EXHIBIT D

System Efficiency Upgrades

I. Introduction

Mahi Pono has made significant investments in water efficiency improvements since the company acquired 41,000 acres of fallow sugarcane land formerly owned by Hawaiian Commercial & Sugar Co. (*"HC&S"*). We plan to continue to invest heavily in water efficiency upgrades going forward.

The intent of this report is to provide a description of (*a*) the improvements that Mahi Pono has already made, (*b*) the investments in water efficiency that Mahi Pono has planned for upcoming years, and (*c*) the impacts of Mahi Pono's investments in water efficiency thus far. This report will be presented through an overview of the following topics:

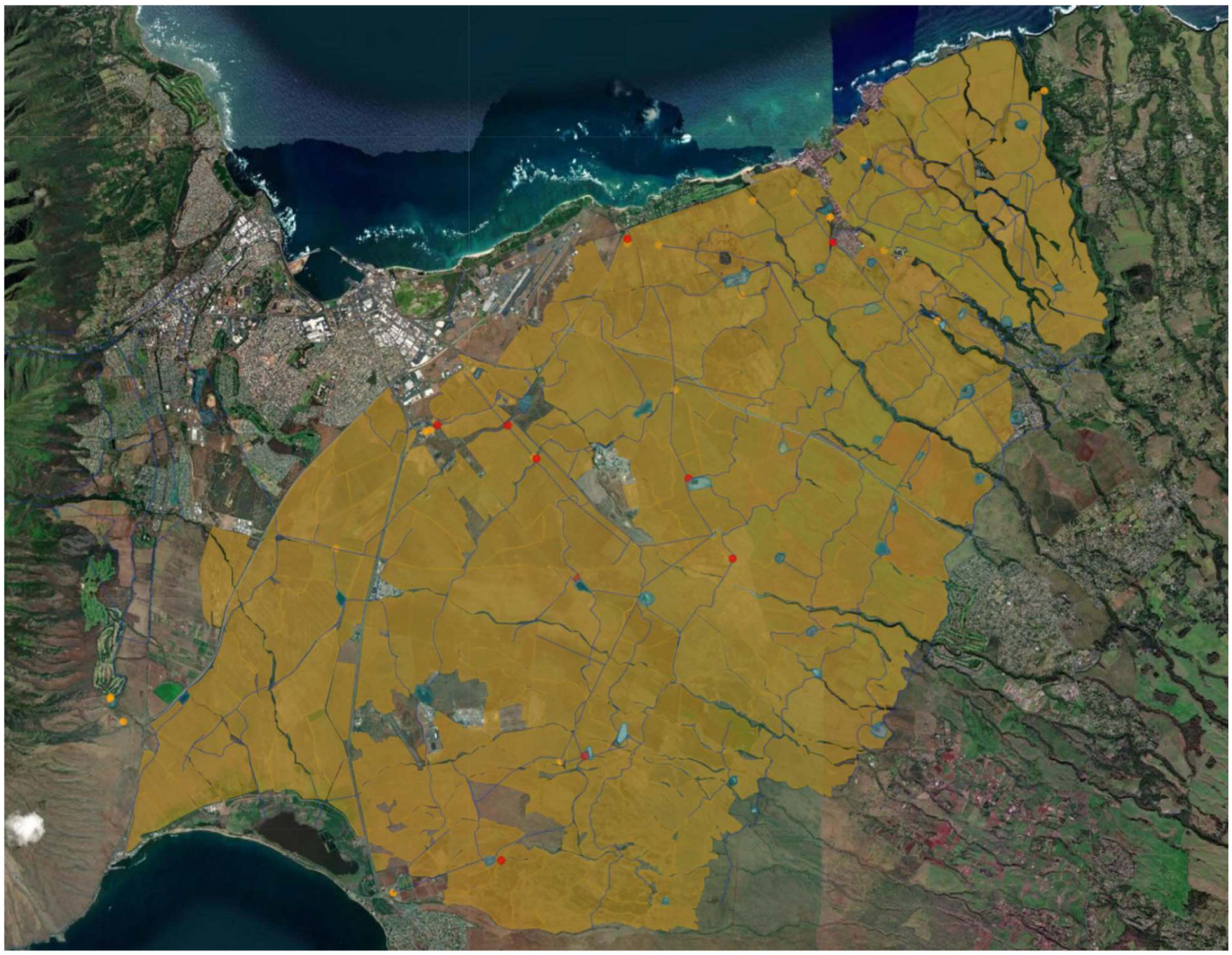
- On-Farm Transmission System Improvements – Upgrades to the large-scale transmission system that delivers water from Maliko Gulch to the individual fields within Mahi Pono's farm.

- In-Field Irrigation System Installations – Brand new irrigation systems for each field to facilitate new plantings of diversified crops.

- Impacts of Water Efficiency Improvements – The benefits of Mahi Pono's commitment to water efficiency as shown through the comparison of water usage figures included in past quarterly RP reports.

II. On-Farm Transmission System Improvements

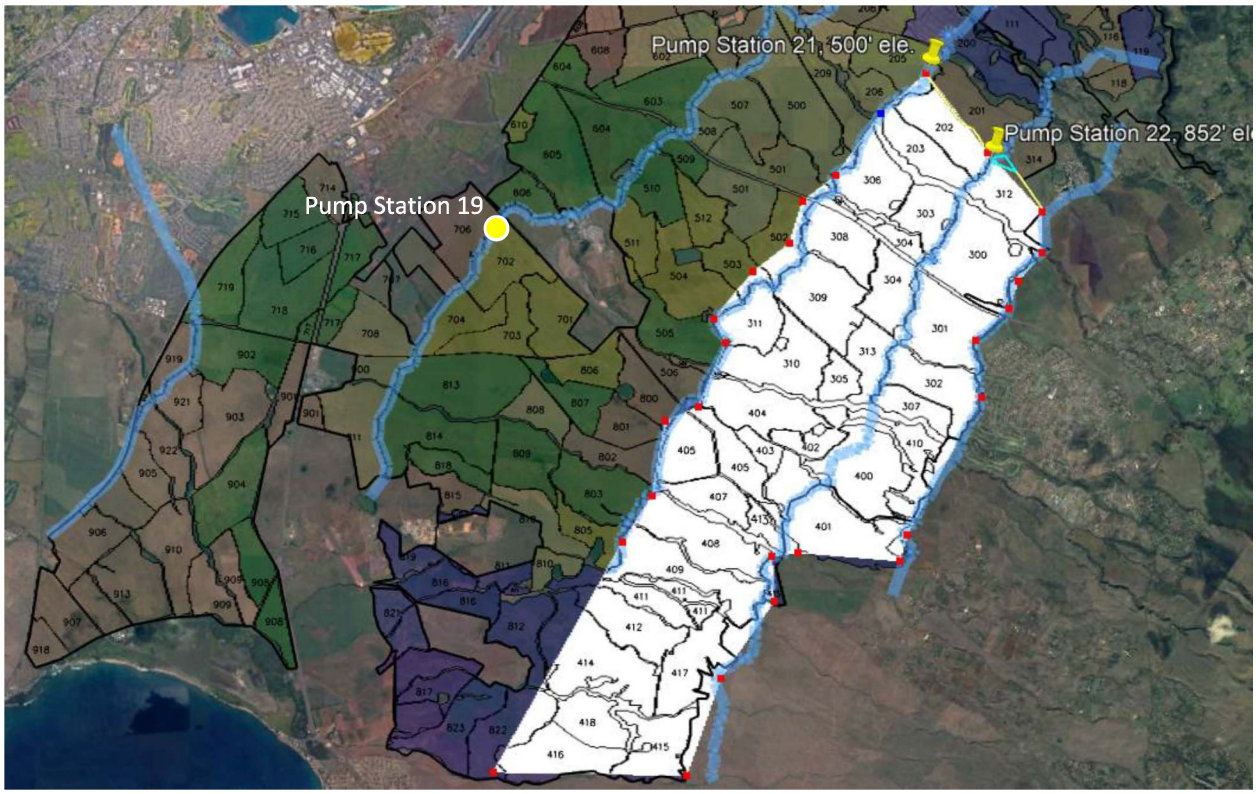
The On-Farm Transmission System (the "*On-Farm System*") is defined as the series of ditches, pipelines, reservoirs, groundwater wells, and related infrastructure which delivers surface water and groundwater to the individual fields within the Mahi Pono farm. The On-Farm System is shown in the map below:



*Fields highlighted in **Yellow** Pumps shown in **Red Dots** Reservoirs shown in **Blue Dots***
*Wells shown in **Gold Dots** Ditches shown by **Blue Lines***

a. Pump Station & Pipeline Improvements

Mahi Pono is constructing several booster pump-stations and pipelines that will further connect the ditch systems at various elevations. These improvements will be bi-directional, allowing surface water and groundwater to be pumped uphill while also replacing some of the older gravity-fed pipes that currently facilitate downhill flow, but are nearing end-of-life status. The installation of these new pump-stations and pipelines will increase the usability of the water already within the On-Farm System by allowing it to be moved around more freely rather than be limited to elevation zones. The pumps are being installed in locations that are either (a) early on in the on-farm path of the corresponding ditch, or (b) just prior to the terminus of the ditch, thus allowing water to be re-circulated and used. These improvements are described more fully in the summary and map below:



i. *Pump Station 21* – This project consists of four 450 Hp pumps with a total station capacity of 20 MGD. One of the pumps will be driven by a variable frequency drive, which will allow for speed adjustments for fine control of discharge flow. The water will be pumped uphill or be gravity-fed downhill through a 6,200-foot-long high-density polyethylene ("*HDPE*") pipeline measuring 36" in diameter. The pump and the lower-elevation endpoint of this pipeline will be located at the Lowrie Ditch at an elevation of 500 feet. The upper-elevation terminus of this pipeline will be located off of the Kauhikoa Ditch at an elevation of 852 feet.

The construction of the Pump 21 project will commence in Q4 2022 or Q1 2023 and is expected to be complete by the end of Q2 2023. The total cost of this project is expected to exceed $5.2M. This excludes the cost of the 600-plus in-house man-hours that Mahi Pono plans to dedicate to this project.

ii. *Pump Station 22* – Similar to the Pump 21 project, the installation of Pump 22 and the related pipeline is intended to allow for water to be pumped (or be gravity-fed) between two different elevation points. In the case of Pump 22, the water will be pumped uphill, or gravity fed downhill through a 4,500-foot-long HDPE pipeline

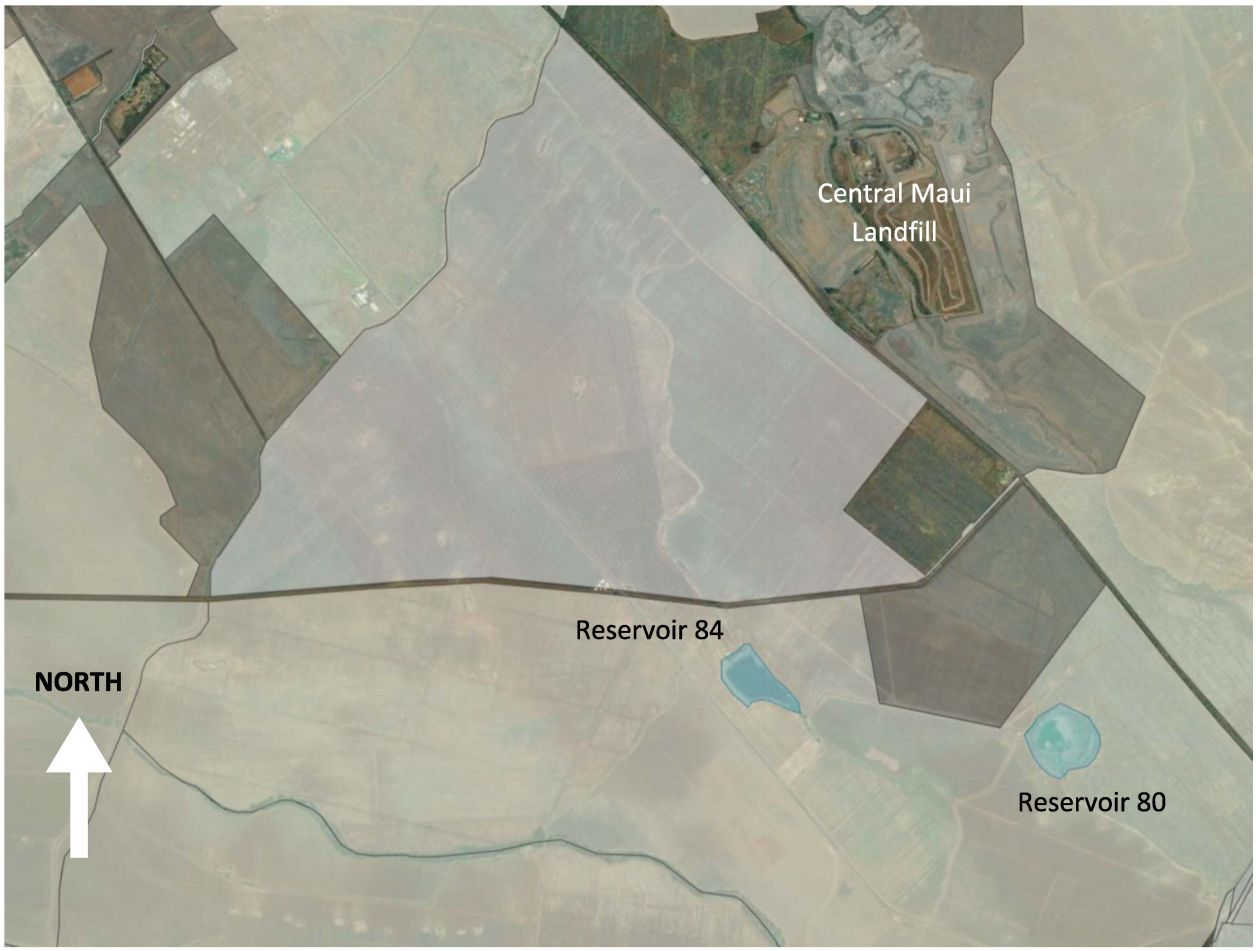
measuring 36" in diameter. Pump 22 and the lower-elevation endpoint of this pipeline will be located adjacent to the upper-elevation endpoint of the Pump 21 pipeline at the 852-foot elevation level. The upper elevation terminus of the Pump 22 pipeline will be located off the Hamakua Ditch at an elevation of 1,029 feet.

This project is currently in the engineering phase and is projected to enter into a procurement process in 1H 2023. Once the procurement process is complete, an expected 12-month construction process will follow. The total cost of this project is anticipated to exceed $2.5M.

iii. *Pump Station 19* – This pump station and pipeline system will pump water from the current terminus of the Haiku Ditch back uphill to an earlier point of the same ditch. This will allow Mahi Pono to continually recirculate tailwater above a certain level through the last section of the Haiku Ditch, thus replacing a terminus reservoir.

The anticipated cost of this project is $250k. Construction is underway, with an expected date of completion in Q1 2023.

b. <u>On-Farm Reservoir Bypass Work</u> – Mahi Pono has invested in pipelines that allow for some on-farm reservoirs to be bypassed. The most significant of these installations has allowed Mahi Pono to bypass reservoir #s 80 & 84. The locations of these reservoirs are shown in the map below:



This newly installed bypass has allowed Mahi Pono to deliver water to 6 different fields in the surrounding area, while eliminating any seepage that may have otherwise occurred when these reservoirs were in use.

In Q3 2022, Mahi Pono also completed the construction of a pipeline which would facilitate more efficient deliveries of surface water to its irrigated pasture lands located east of Baldwin Avenue. Previously, larger amounts of water needed to be delivered through reservoirs in order to satisfy the relatively small water requirement for cattle. With the reservoirs being bypassed, Mahi Pono can more efficiently deliver water to its ranching operations.

So far, the cost of installing optional bypass mechanisms in reservoirs has exceeded $500k. Mahi Pono will continue to evaluate reservoirs that could be feasibly bypassed as it continues to build out its farm.

c. Electrical System Improvements – The privately-owned electrical distribution system on the Mahi Pono Farm, a carry-over from sugar operations, needed to be repaired in order to return the On-Farm System to 100% operational capability. Repairs and restoration efforts continue to be on-going, but so far, Mahi Pono has completed the following work:

- *Replace 150 electrical poles and related service branches.*
- *Upgrade existing SCADA network from VHF to UHF to allow for better and more future-proof communications to substations.*
- *Uprated a 11.5KV circuit to 23 KV.*

Further improvements are needed to achieve 100% capability of the On-Farm System, but the completed work has enabled Mahi Pono to utilize more of the existing water transmission infrastructure than what was available in 2019 and 2020, thus increasing the ability to utilize the water resources more efficiently throughout the farm.

III. In-Field Irrigation System Installations

Mahi Pono is committed to installing all-new irrigation systems within each field that it plants, in order to achieve optimum water use efficiency. The in-field irrigation systems (the "*In-Field Systems*") consist of pumps, filter stations, valve systems, pressure monitors, targeted applicators, weed mat, and miles of irrigation pipe. Thus far, in conjunction with its planting of new crop, Mahi Pono has spent over $39M on the installation of its In-Field Systems since January 1, 2020. This $39M consists of the following approximate costs:

- *Irrigation Installation Labor* - $9M
- *Irrigation Materials, Design, & Logistics* – $27M
- *Weed Mat Materials - $3M*

The above costs do not include the salaries and other employment costs related to Mahi Pono's internal team, which has been responsible for a significant portion of the irrigation installation process. Additional installations of in-field irrigation system improvements will occur as new acreage is planted.

a. Weed Mat Installations – Mahi Pono has installed over 3,000 miles worth of 4-foot wide weed mat in over 4,000 acres of planted area. This greatly reduces weed growth (and the concomitant water consumption by weeds) and promotes soil moisture around the root-ball of the trees. Additional

installations of weed mat will occur as new acreage is planted. The picture below shows newly installed weed mat in a row of citrus trees in Mahi Pono field #703.

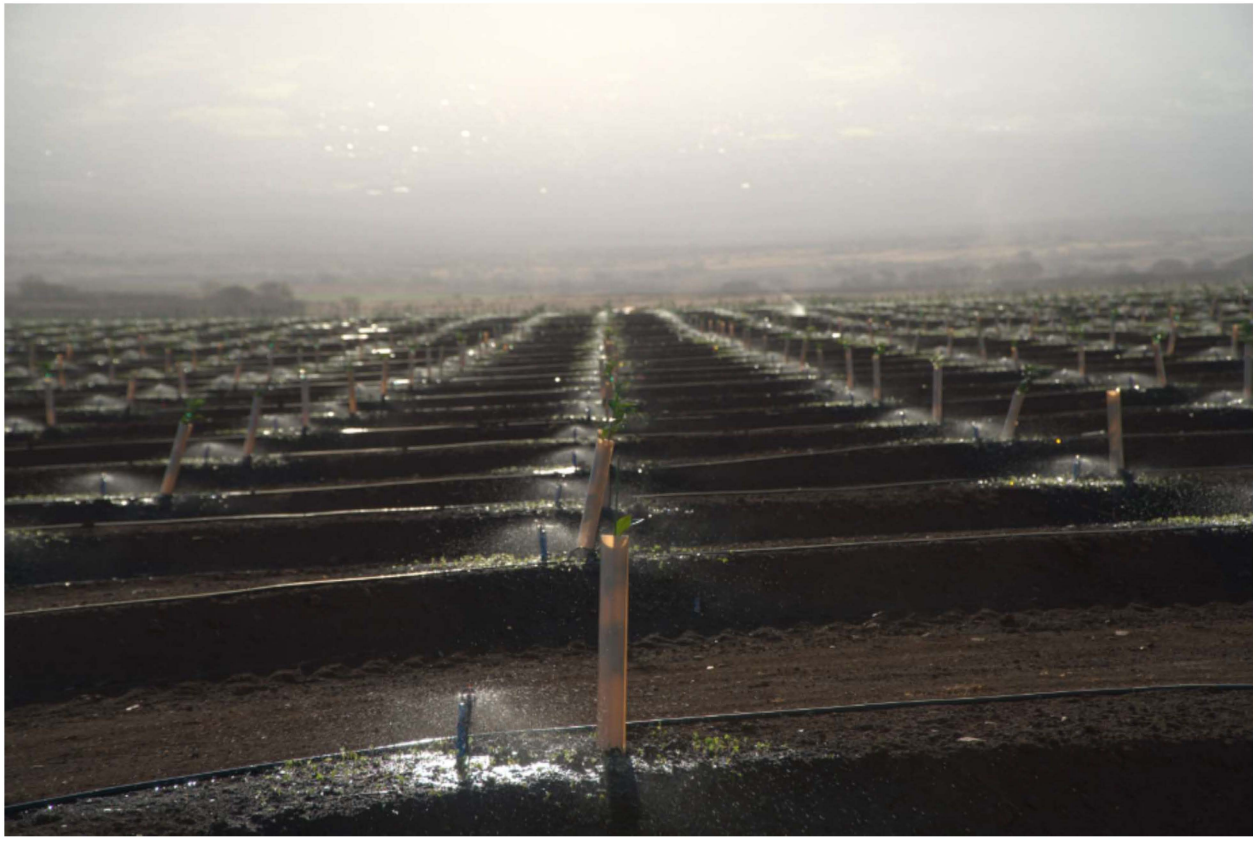
Weed mat installed in a row of citrus trees.

b. High-Efficiency Irrigation Systems – Mahi Pono has selected irrigation products that prioritize the efficient use and application of water. These products consist of the following items, which will be installed as new fields are planted.

i. *Moisture Sensors* – Mahi Pono is currently installing moisture sensors in all of its planted fields. The installation process is completed in the majority of fields, and we intend to have all fields up and running by Q1 2023. A manufacturer spec sheet is attached as EXHIBIT A.

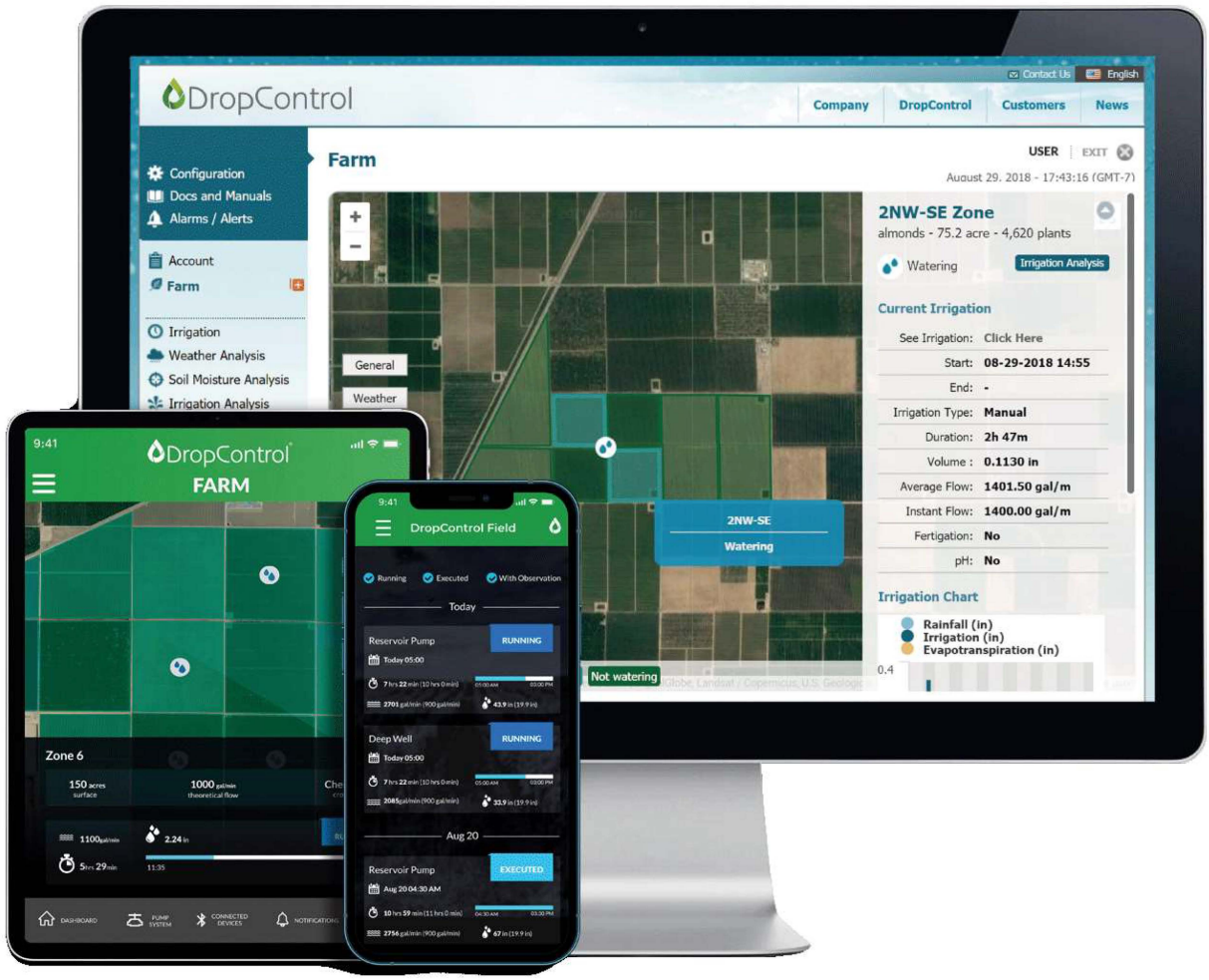
Mahi Pono's Soil Moisture Sensors provided by EnviroPro

ii. *Targeted Applicators* – All Mahi Pono fields currently use a "*fanjet*" applicator, which only applies water to the immediate root-ball area. Each tree has a dedicated applicator, meaning Mahi Pono has installed over 1.5M of these applicators throughout its planted fields. A manufacturer spec sheet is attached as EXHIBIT B.



"Fanjet" applicators applying targeted irrigation to Mahi Pono's crops

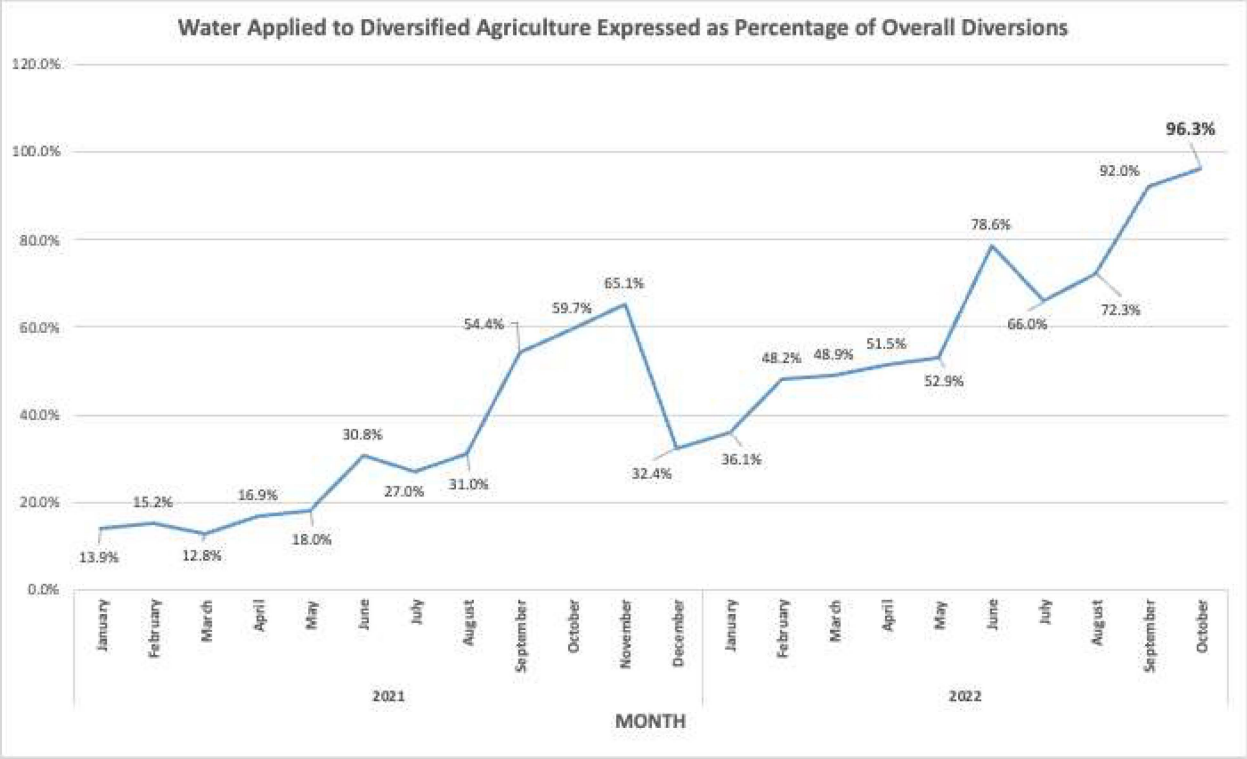
iii. *Automated Irrigation Systems* – Mahi Pono is currently in the process of implementing an automated irrigation system, which would allow Mahi Pono's irrigation team to remotely monitor and control irrigation systems in the future. This system is manufactured by WiseConn. Mahi Pono hopes to have this system fully implemented by Q1 2024. A manufacturer spec sheet is attached as EXHIBIT C.



"WiseConn" user interface for automated irrigation controls

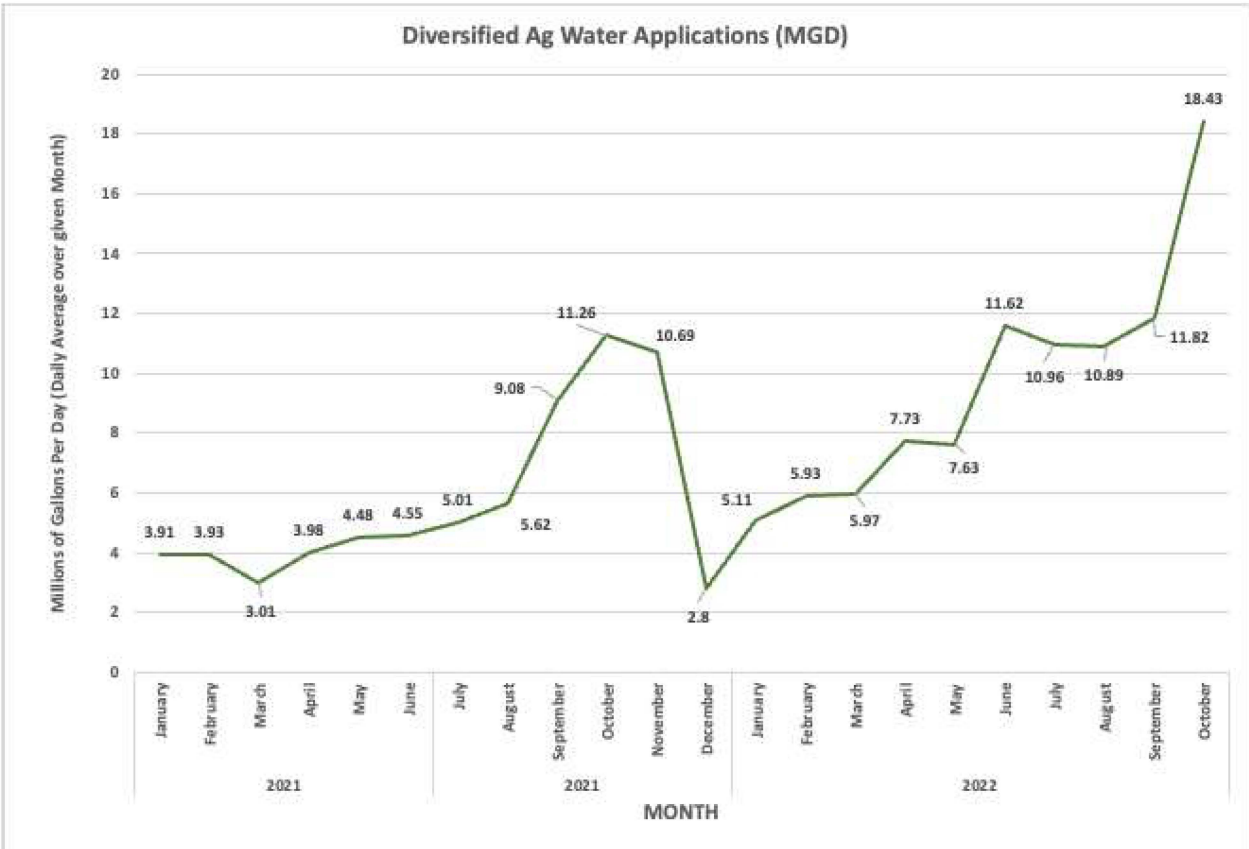
IV. Impacts of Mahi Pono's Focus on Water Efficiency

Mahi Pono has been consistently monitoring its water usage statistics as it progresses through the build-out of its diversified farm. In regard to the efficient use of surface water, Mahi Pono has focused on the ratio between (*a*) the amount of water used for diversified agriculture, and (*b*) the total amount of water diverted as measured at Honopou.

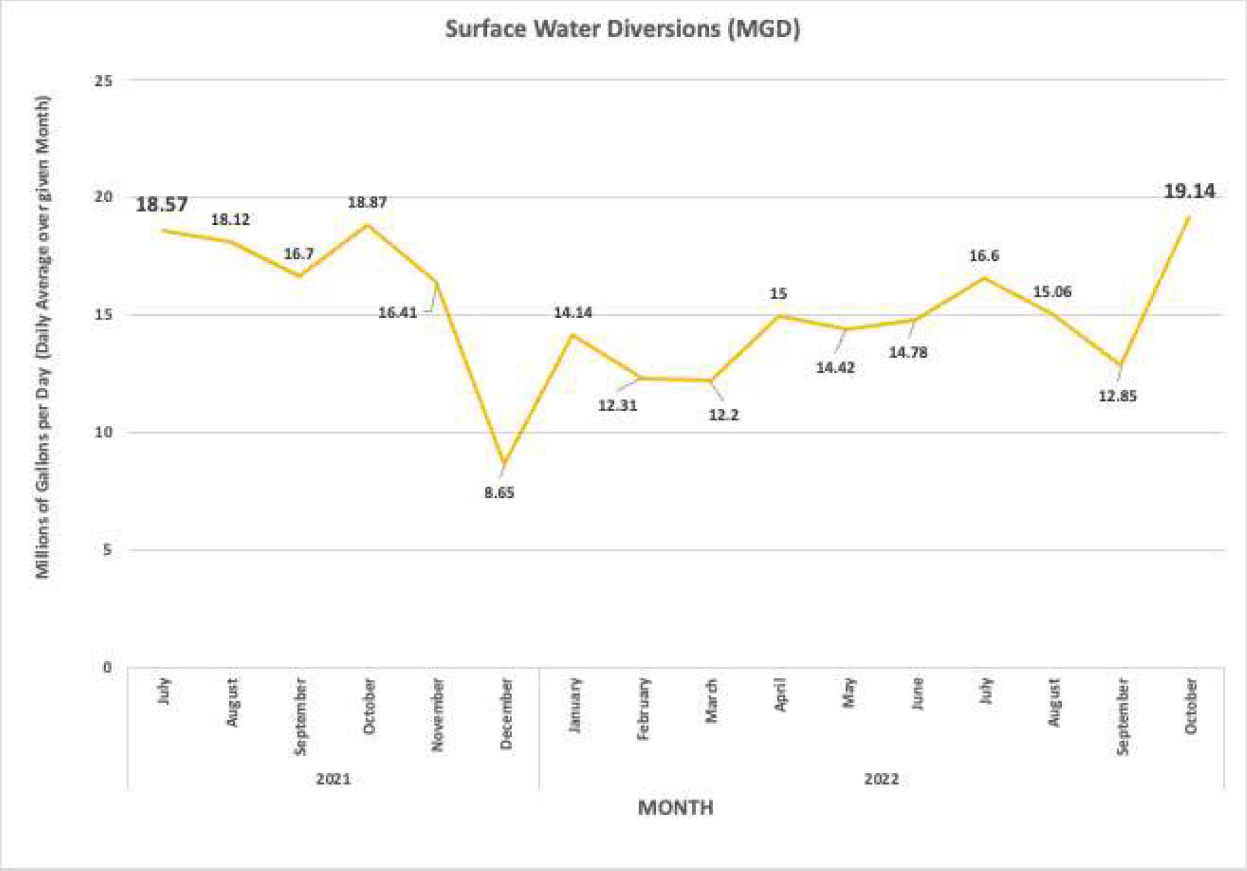


In the most recent month of October 2022, the amount of water that Mahi Pono applied to its diversified crops was equivalent to 96.3% of the total amount of water diverted from East Maui. This represents a 593% increase in water efficiency since January 2021.

Mahi Pono has achieved these gains in efficiency while increasing the amount of water applied to diversified agriculture. The amount of water applied to diversified agriculture has increased from 3.91 MGD in January 2021 to 18.43 MGD in October 2022.



Over this time, Mahi Pono has also strived to conserve stream water. This has resulted in surface water diversion amounts that have generally remained flat over the last 18 months notwithstanding more water being provided to irrigate diversified crops.



Taken as a whole, these metrics are representative of the significant impacts that Mahi Pono's upgrades are having on overall water efficiency.

V. Summary of Future Outlook

Mahi Pono's commitment to upgrading irrigation systems has already significantly impacted its real-world water efficiency. Mahi Pono will continue to pursue water efficiency improvements as it proceeds through the buildout of its diversified farming operation. The following is a summary of the projected timeline of those future improvements:

	2022		2023		2024		2025		2026	
On-Farm Transmission System Improvements										
Pump Station 21										
Pump Station 22										
Pump Station 19										
Reservoir 80 Bypass										
Reservoir 84 Bypass										
Ongoing Evaluation of Future Reservoir Bypass										
Ongoing Electrical System Improvements										
In-Field Irrigation System Installation										
Weed Mat Installations										
Moisture Sensor Installations										
Targeted Applicators										
Automated Irrigation Systems										

Many of the improvements listed above are in an "*ongoing"* status. Installations of weed mat, moisture sensors, targeted irrigation applicators, and automated systems will need to follow our pace of planting. Similarly, the evaluation of which reservoirs should be bypassed is an ongoing process. This will be better understood as additional acreage is planted and more progress made toward the full build-out of the farm. As we've already demonstrated, we will bypass any reservoirs if the work is feasible, and the future utility is limited. Many of the contemplated changes will have a degree of permanence upon completion, so a determination driven by sound reasoning and farm development is highly important. We look forward to continuing our pursuit of water efficiency improvements as we move towards the completion of farming development.

Exhibit A

ABN: 59 611 963 163 ACN: 611 963136

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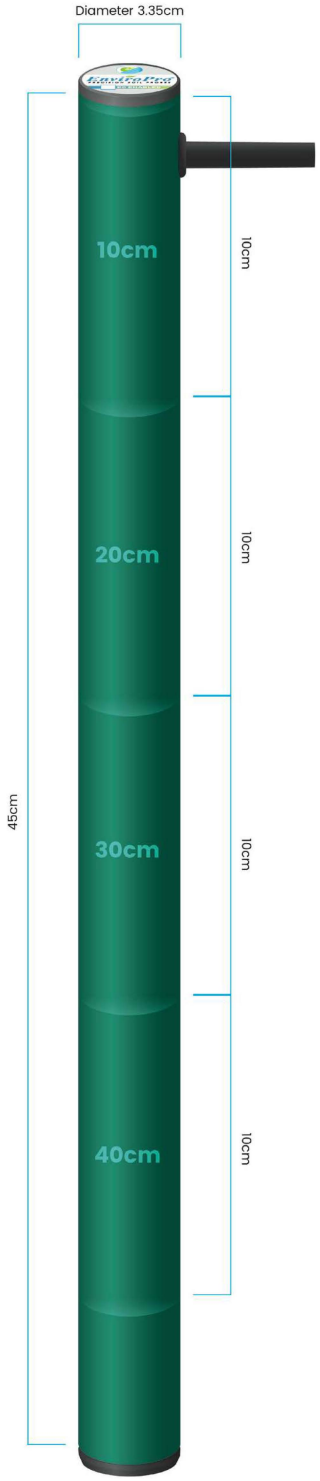
F: +61 8 8251 5519
sales@entelechyinternational.com.au

Unit 4 / 8 Aristotle Close
Golden Grove SA 5125
AUSTRALIA

EnviroPro®
PRECISION SOIL PROBES

TECHNICAL SPECIFICATIONS

EP100G Series



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sales@entelechyinternational.com.au

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Golden Grove SA 5125
AUSTRALIA

Models Overview

Model	Moisture Points	Temp	EC	Sensing	Length (cm)
EP100GL-04	●	●		4	46.5
EP100GL-08	●	●		8	86.5
EP100GL-12	●	●		12	126.5
EP100GL-16	●	●		16	166.5
EP100G-04	●	●	●	4	46.5
EP100G-08	●	●	●	8	86.5
EP100G-12	●	●	●	12	126.5
EP100G-16	●	●	●	16	166.5

Specifications

Diameter: 33.5mm +/-0.2mm

Field of Influence: 55 mm from wall of probe

EnviroPro® sensitivity (per probe) as a function of sampled volume:

Model	Total Soil Volume Detected
EP100G(L)-04	6.4 litres
EP100G(L)-08	12.8 litres
EP100G(L)-12	19.2 litres
EP100G(L)-16	25.6 litres

Moisture resolution: 0.01%
Salinity resolution: 0.001 dS/m
Temperature resolution: 0.01 °C

Moisture accuracy: +/- 2% @ 0% VWC to 50% VWC (*with respect to dielectric)
Useable salinity range: 0 to 6 dS/m* (*Upper limit of non-contact capacitance sensors.)
Salinity accuracy: +/- 5% @ 0-4 dS/m at 10%-30% VWC
Temperature accuracy: +/- 1 °C @ 25 °C

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AUSTRALIA

Specifications

Units of Measure:
Volumetric Water Content (VWC%)
Salinity dS/m
Temperature °C or °F

Interface: SDI-12 version 1.3

Cable length: 5m

Wiring:
Red +7 to +16VDC
Black 0V
Blue Data
Yellow Not connected (reserved for future use)

Power Supply Requirements:
Recommended operating voltage: 7V to 16VDC
Minimum operating voltage 6VDC **
Reverse voltage and lightning protected.

Current Consumption									
Model	EP100G/GL-04		EP100G/GL-08		EP100G/GL-12		EP100G/GL-16		
Sensors	4		8		12		16		
Mode	Typ	Max	Typ	Max	Typ	Max	Typ	Max	Units
Sleep Current	0.4	0.45	0.8	0.9	1.2	1.35	1.6	1.8	mA
Idle Current	5	7	10	14	15	21	20	28	
Active current (not sampling)	22	32	27	39	32	46	37	53	
Active current (sampling)	33	72	38	79	43	86	48	93	
Active time	320	380	640	760	960	1140	1280	1520	mS

**minimum voltage specification conditions: standard EnviroPro® 5m / 16ft cable with single device connected to SDI-12 bus (not tested beyond 25°C). Accuracy of data outside these conditions cannot be guaranteed.

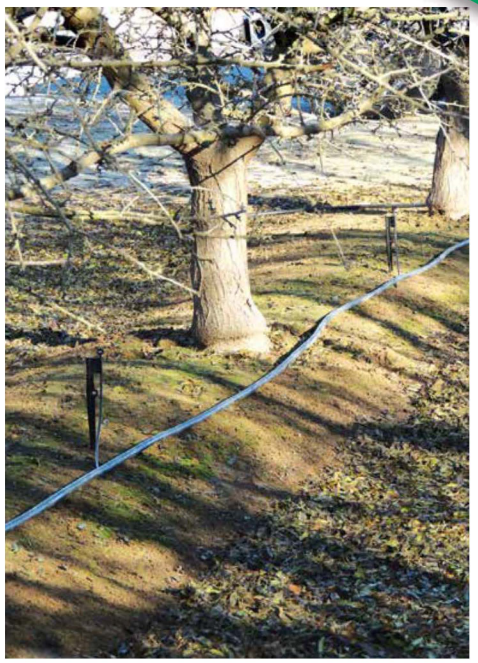
Operating temperature: -20 to +60°C

Exhibit B

Fan-Jet® Microsprinklers

BOWSMITH®

Drip 2 Fan-Jet®



Advantages

- Better start for young trees
  - Water near the root zone
- Irrigate several blocks at one time
- Saves water
- Saves energy
- After 1-2 years convert to a Fan-Jet

Fan-Jet features:

- No moving parts
- Superior 2-piece design: nozzle and twin wedge post frame with splash plate are molded separately
- Precision craftsmanship
  - Consistent patterns
  - Uniform flows
- Quick thread for fast installation
- High grade (automotive grade) copolymer plastics
- Seven flow rates: color coded nozzles: 6-24 gph
- Eighteen spray patterns

BOWSMITH®

P.O. Box 428 • Exeter, CA 93221 USA
Toll-Free USA: 1-(800) BOWSMITH 1-(800)-269-7648
P: (559) 592-9485 F: (559) 592-2314
www.bowsmith.com

Fan-Jet® Microsprinklers

BOWSMiTH®

Fan-Jet® Microsprinklers

Fan-Jet advantages

- Leaching Capabilities
  - Push salts down and away from the root zone
- Frost Protection
  - Can raise ambient temperature by up to 2-3 degrees
- Big Wetted Area
  - Large root zone
  - Potentially bigger yields
    - Splash plate design enables longer throw for larger root zone
- Wide variety of spray patters to precisely match the applicaiton
- Push pre-emergents into the soil

Add a Fan-Jet line to existing dual line drip

Why?

- Annual frost events?
  - Fan-Jets can help provide frost protection by raising the ambient temperature by 2-3 degrees.
- Salt build up problem?
  - Fan-Jets will allow you to push salts down and away from the root zone.
- Problem pushing pre-emergents into your soil?
  - Fan-Jets will help your pre-emergents penetrate the soil.

Exhibit C

DropControl® by WiseConn®

COMPLETE IRRIGATION AUTOMATION

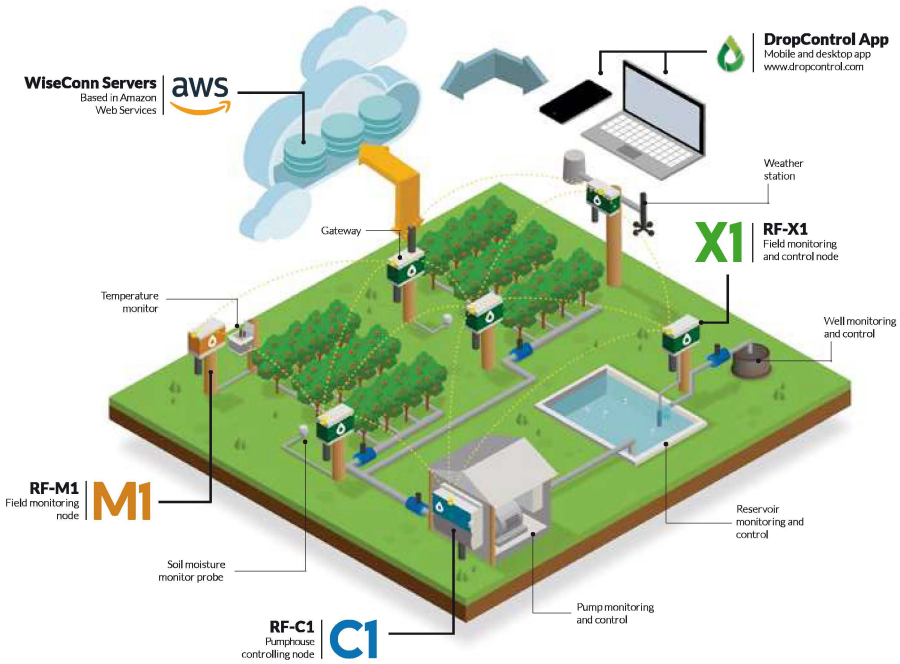
DROPCONTROL

Wireless monitoring and control platform, accessed through a web-based application. The in-field network is connected to sensors and actuators for weather conditions, soil moisture, pump and valve control, and irrigation data.

We work with irrigation companies who are trained to install and support our hardware. Our in-house support team helps configure the network and tracks its performance to help growers use the system efficiently.

HOW DOES IT WORK?

Nodes communicate with one another to **start or stop irrigation cycles and send feedback data to the Gateway Node, which connects to the central server.** The data is stored securely on the Cloud. The node-based radio network is connected to sensors and actuators in the field to control irrigation and injection systems.



MONITORING & CONTROL CAPABILITIES

- Advanced irrigation and fertigation.
- Wireless pumps.
- Wells, ponds, and boosters.
- Soil moisture probes, weather, and crops.

FEATURES

Flexibility
Connects with any standard open sensor. Several options to connect more than 12 different standards with exchangeable expansion boards.

Monitoring and Control
DropControl's patent pending technology allows for secure control of irrigation, fertigation, frost protection, etc.

Wireless Mesh Network
Self-healing mesh network is easy to setup and maintain. Up to 2 miles line of sight links between nodes.

Online Support
Subscription plans include online technical support for configuration and troubleshooting.

Cloud-Based
Data is always available from the cloud to the palm of your hand. All the data is secure, with no servers or software to maintain.

Maps
Map visualization lets users see the status of current irrigations, weather, soil moisture, and nodes within the network.

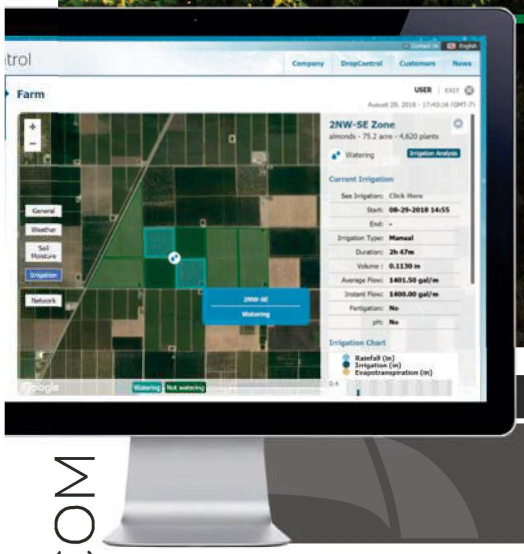
Multiple Users
The software allows individualized user access with special privileges and activity logs for each user.

Alarms and Alerts
The platform has various alarm and alert configurations using text messaging (SMS), emails, or phone calls that can be triggered by parameters measured in the field.

Low Power Consumption
Every node is self-sufficient and includes batteries along with a 5W solar panel.

INFO@WISECONN.COM WWW.**WISECONN**.COM **+1 (559) 326-7613**

CLOUD SERVICES



The WiseConn WOS platform allows user-friendly storage and visualization of data collected in the field.

The DropControl software and the DropControl Mobile App are designed to optimize your time and resources from any location.

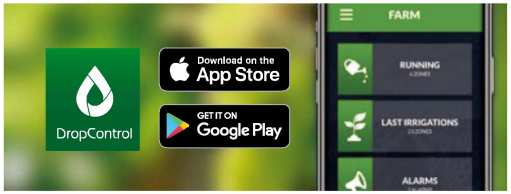
Services are offered as a subscription that includes secure data storage, online technical monitoring and support, and access for multiple users.

ONLINE ANALYSIS TOOLS

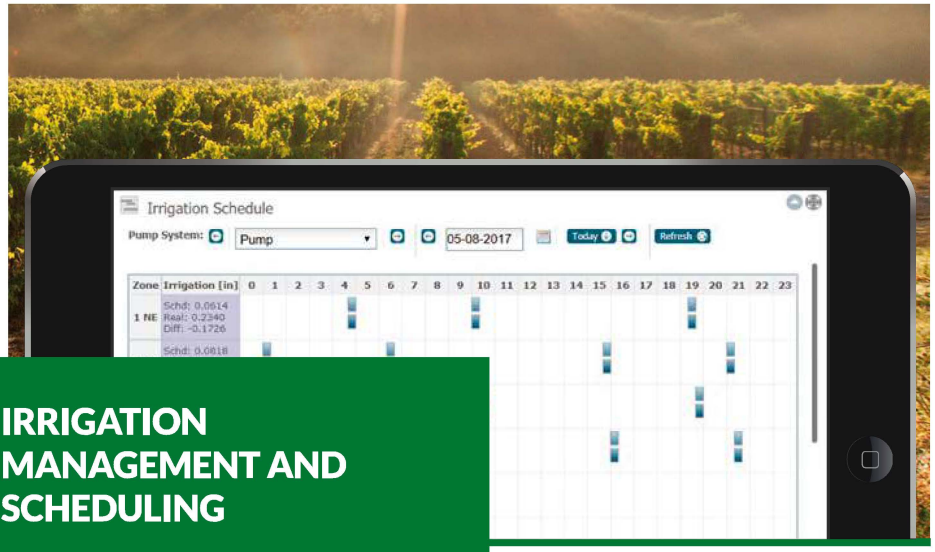
- Soil Moisture analysis.
- Irrigation analysis.
- Irrigation scheduling and management
- Custom user-created charts
- Weather analysis.
- Custom alert and alarm parameters

DROPCONTROL APP

- Simple monitoring app .
- Advanced irrigation control and scheduling.
- Secure mobile access.
- Bluetooth direct control of C1.



*Service plans on back cover



IRRIGATION MANAGEMENT AND SCHEDULING

- User friendly fertigation scheduling tool.
- Create and maintain irrigation schemes and adjust according to phenological stages.
- Block or valve scheduling.
- Downloaded irrigation reports are easy to share and send.
- Different user access to view, edit or comment zones, or complete farming operations.
- Gantt view to see past, present, and future irrigation events:
  - Irrigation runtimes and volumes.
  - Average and instant flow and pressure.
  - Fertigation times and volumes.
  - Power meter readings.
  - Flushing events.
  - Irrigation alarms and warnings.
  - Manual irrigation log.

WEATHER AND THE CUSTOM CHART TOOL

- Check historical and current weather data.
- Use the Compare feature to track seasonal changes.
- Save multiple chart templates.
- Set up alarms and warning thresholds for mobile, SMS, email, or call notifications.
- Download chart as a png, pdf or all the data in .xls formats.

SOIL MOISTURE ANALYSIS

- View, edit and comment on all irrigation parameters.
- Helps determine optimal irrigation frequencies and durations based on real in-field data.
- Find and focus on irrigation problems fast and easy with alarms and warnings.
- Special tools:
  - Stack, normalize, and add soil moistures. Set wet/dry thresholds.
  - Real Kc, irrigation volume, water intake, and many other indexes help understand what's going on.
  - Historical setpoint and user logs. Social-based commenting tool to connect with other users or our support team

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WWW.**DROPCONTROL**.COM

FIELD DEVICES

WiseConn's hardware can operate, monitor, and manage multiple agricultural processes in the field. Its main components are the RF-X1, M1 and C1 Nodes. WiseConn's patent-pending hydraulic logic and DropControl protocol make for a reliable on-site distributed control. Every network has one Gateway Node that contains a modem, which uploads data from the field to the WOS and DropControl servers.

RF-C1

PUMPHOUSE CONTROLLING NODE

The new C1 is the perfect match for the successful X1. Designed for the pump house with clear and simple user interface and local Bluetooth connection. It is easy to operate both by the pump or through the internet. Solar power version available.

DropControl

Download on the App Store

GET IT ON Google Play

Bluetooth®

- Fixed set of inputs/outputs:
  - 10x Digital inputs.
  - 10x Relay outputs up to 1A.
  - 4x Single 4 to 20 mA analog inputs (2 differenial).
  - RS232/485 comm, for sensors or VFD control.
- Expansion modules:
  - 10x digital inputs with 10x relay outputs.
  - 20x digital inputs.
- Bluetooth + app for local direct control and sensor readings.
- Simple rugged local interface.
- RF 4G and LTE versions / patent-pending.

RF-X1

FIELD MONITORING AND CONTROL NODE

The X1 node is the ultimate field unit. It is able to monitor and control using the flexibility of expansion boards, which makes it easy to handle the most complex requirements. The 6 Ahr lithium-ion battery lasts up to 5 days without 5W solar panel connection. 4G and LTE versions are available.

Expansion cards allow you to connect a full range of sensors and controllers that the industry offers.

5 EXPANSION PORTS

- 3x 0-3VDC Analog Inputs.
- 3x 4..20mA Analog Inputs.
- 2x Digital/Dry contact Inputs.
- 1x Relay Output up to 1A with 1x Digital/Dry contact input.
- 1x Solenoid Latch Output with 1x Digital/Dry contact Input.
- 4x Solenoid Latch Outputs with 1x Digital/Dry contact input (2 ports).
- SDI12, RS232 or RS485 Communication Protocols.

RF-M1

FIELD MONITORING NODE

The new M1 Field Monitoring Node is suitable for simple monitoring tasks as part of the DropControl network or on its own. It has a combination of inputs that allows you to perform multiple monitoring tasks and store them in the cloud.

EXTERNAL DEVICES

- Sensors 4 to 20mA - Temperature, pH, EC, flow meter, pressure, etc.
- Sensors 0..5V - Temperature, etc.
- Digital contact sensors: Sensors wind speed, flow meter, etc.
- RS485 / 232 devices - Data loggers and frequency variators.
- SDI12 devices - Data loggers and soil moisture sensors.

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For us, DropControl has been a lifesaver. It allows us to use water in the most effective way possible.

Tom Rogers, Rogers Ranch - Madera, CA

More than 800 growers use it every day to optimize their fields and improve results.

SERVICE PLANS

Every node comes with a Free Plan license included that allows basic configuration and visualization of the recorded data. The Simple Plan includes data security features and extra users, while the **Full Plan** adds the analytical power and irrigation scheduling tools in the DropControl web page and mobile App for up to 4 users.

FREE PLAN	SIMPLE PLAN	FULL PLAN
WOS web access		DropControl web access + Mobile App
1 user	2 users	4 users
6 months storage	Secure and redundant data storage	Secure and redundant data storage
-	-	1 monitoring API access
-	-	Advanced support

Annual fees are per node. Please contact us to inquire about the details of the available plans (additional users, control API's, special reports, and corporate brand sites).

Members

ASEV American Society for Enology and Viticulture · American Pistachio Growers · Western Growers · Irrigation Association · CAIA California Agricultural Irrigation Association · California almonds

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 1104, PU'UNĒNĒ, MAUI, HAWAI'I 96784 • (808) 579-9516

March 24, 2023

The Honorable Dawn Chang, Chairperson-Appointee
and Members of the Board of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

RE Holdover of Revocable Permits Nos. S-7263, S-7264, and S-7265 issued to Alexander & Baldwin, Inc. ("A&B") and Revocable Permit No. S-7266 issued to East Maui Irrigation Company, Limited ("EMI") for Water Use on the Island of Maui: RESPONSE TO NOVEMBER 11, 2022, STAFF SUBMITTAL REQUIRING ADDITIONAL INFORMATION ON THE RATE OF SYSTEM LOSSES

Dear Chair Chang:

The purpose of this letter is to provide information to determine the rate of system losses as required by the Board's adoption of the November 11, 2022, staff submittal for the subject RPs.

Calculation of System Losses

An accurate measurement of system losses and evaporation would require shutting down the ditch systems and taking readings at each section of the ditch and each supporting reservoir. While this would be unnecessary for the EMI system, which is thought to have no net seepage losses per a 2012 USGS study, to shut down sections of ditch and reservoirs on the farm would have a severely negative impact on Mahi Pono's 8,700 acres of planted crops, a significant portion of which are in their early stages of growth.

CWRM arrived at this exact conclusion in its June 2018 D&O:

"*Estimating seepage and evaporation losses by way of direct measurement would require closing sections of the ditches and reservoirs, allowing the water to remain in those structures for a period of time, and taking before and after readings. This is impractical to do on a large scale because it would have interrupted plantation operations." FOF ¶ 728.*

In lieu of a direct measurement, CWRM's June 2018 D&O agreed with the assumption that the amount of unaccounted-for water must be equivalent to "*seepage, evaporation, and miscellaneous system losses."*

EXHIBIT E

FOF ¶¶ 727, 729.

EMI continues to use CWRM's decision as the basis of its calculations for unaccounted water. The results of these calculations are included in every quarterly report submitted to the Board since 2019. For ease of reference, the figures from the most recent 6-month period are reproduced below:

Month	East Maui Surface Water @ Honopou	East Maui Surface Water Gained from Area Between Honopou and Maliko	Groundwater Pumped on-Farm	County of Maui DWS [1]	County of Maui Ag Park [2]	Diversified Agriculture [3]	Historic / Industrial Uses [4]	Reservoir / Seepage / Fire Protection / Evaporation / Dust Control / Hydroelectric [5]	
								Diverted Reserve to meet Contractual Obligation to County DWS & Ag Park [6]	Other [7]
September	12.85	2.55	4.35	2.79	0.60	11.82	0.03	4.11	0.41
October	19.14	4.79	3.95	2.23	0.59	18.43	0.05	4.68	1.91
November	26.48	0.99	2.73	1.49	0.51	20.36	0.05	5.50	2.30
December	23.27	0.00	0.87	1.26	0.65	11.29	0.03	5.59	5.32
January 2023	15.57	0.67	2.92	2.57	0.46	9.72	0.03	4.47	1.92
February 2023	10.60	0.96	0.00	1.22	0.29	3.59	0.03	5.99	0.44
Average	**17.99**	**1.66**	**2.47**	**1.93**	**0.52**	**12.53**	**0.04**	**5.06**	**2.05**

Before we proceed to our calculations based on these figures, it is important to understand our operational and contractual situation with the County.

- *7.5 MGD must ALWAYS be Made Available to the County Regardless of the County's Actual Consumption* – The terms of EMI's contract with the County requires EMI to always have all 7.5 MGD of water available in the ditch every day for the County's potential use. This consists of 6 mgd at Kamole Weir and 1.5 mgd at the Kula Ag Park.

- *The County Withdraws Water Before Mahi Pono* – The County withdraws its water directly from the ditch system before the ditch system reaches the Mahi Pono farm. EMI and Mahi Pono have no control over the amount of water that the County draws and no control over the amount of excess water the County leaves behind in the ditch on any given day.

- *The County does not Provide EMI with any Advance Notice of Changes in Its Actual Need* – As has been stated by the Maui County Department of Water Supply (DWS), it is not able to provide EMI any advance notice of the County's water needs, and whether the County will not be needing the full 6 mgd at Kamole Weir and 1.5 mgd at the Kula Ag Park. Thus EMI diverts and makes available the full 7.5 mgd on a daily basis in addition to the water needed by Mahi Pono for its farm.

EMI has no control over the amount of water that the County will actually take, no advance notice of any excess water, and has a legal obligation to make the full contractual amount of water available to the County at any given time. Given these circumstances, EMI and Mahi Pono cannot consistently rely on any of the County's allocation being available to meet Mahi Pono's irrigation needs, but are left in the position of having to manage the varying amounts of excess water that is not used by the County on a daily basis. Because of these factors, EMI and Mahi Pono should not be responsible for the County's water in a system loss calculation used to assess the Permittees' responsible use of water.

Thus, the more appropriate formula to calculate system losses is as follows:

System Losses = Losses Net of County Losses / Total water Net of County Water

Using the table above, which is patterned after Exhibit A in the quarterly reports, the terms of this equation would be defined as follows:

Losses Net of County Losses	=	"Other"
Total Water Net of County Water	=	"East Maui Surface Water @ Honopou"
	plus	"East Maui Surface Water Gained from Area Between Honopou and Maliko"
	plus	"Groundwater Pumped on-Farm"
	minus	7.5 MGD (County Contractual Obligation)

Using this formula, the calculation for the percentage of system losses between September 2022 – February 2023 is:

System Losses (Sept 2022 – Feb 2023)	=	**2.05 / (17.99 + 1.66 + 2.47 – 7.5)**
	=	***14.02%***

Context re: 22.7% System Loss Rate from June 2018 D&O

Although the system losses from this most recent 6-month period is 14.02%, we did want to clarify the history of the 22.7% system loss figure referenced by the staff submittal, and the context for how it should be used.

In its June 2018 D&O, CWRM found that during sugar cultivation, specifically from 2008 to 2013, "seepage, evaporation and miscellaneous system losses" averaged 41.67 MGD, or 22.7% of the 183.61 MGD of combined surface water delivered and ground water pumped at the time. FOF ¶ 727. CWRM noted that it would be impractical to estimate seepage and evaporation by direct measurement as it would require interruption of plantation operations, ¶ 728, and explained how HC&S consulted the National Engineering Handbook published by the Soil Conservation Service of the U.S. Department of Agriculture ("USDA") to identify a "benchmark against which the estimated 22.7 percent loss rate could be compared," ¶ 730. The National Engineering Handbook provides seepage rate factors that can be applied to various sections of HC&S's system. "HC&S calculated the average surface area under water for each type of material that holds or conveys the water[.]" *Id.* "For each type of material, HC&S selected a relatively low seepage factor along with a relatively high seepage factor from the USDA Handbook and applied each factor to the estimated surface area under water to calculate what would represent low seepage loss and high seepage loss in the HC&S system per USDA's standards." *Id.*

Based on those calculations, HC&S identified a "range of losses from both seepage and evaporation was 33.40 mgd, or 18.20 percent of average daily water deliveries, to 67.70 [mgd], or 36.90 percent of average daily water deliveries." ¶ 731. CWRM found that the average of the high and low estimates was 27.55% and that HC&S's system losses of 22.7% fell below that average. ¶ 732. Because HC&S's system losses were within USDA's standards, CWRM concluded that those were "reasonable losses under sugarcane cultivation." ¶ 737. <u>CWRM did not conclude that system losses could never exceed 22.7%</u>.

There is also nothing in CWRM's June 2018 D&O to indicate that CWRM intended the 22.7% to apply to anything other than full buildout of the proposed diversified agriculture operation. CWRM incorporated the 22.7% of system losses into the "gross irrigation requirement" for diversified agriculture that informed its IIFS determinations, ¶¶ 703-04 & nn. 26, 27; see also ¶ 789 & n.31 (calculating "estimated requirements under full buildout of the Diversified Agricultural Plan" and noting separate calculation with system losses included). Such "fully grown" metrics are not necessarily applicable to emerging farms such as Mahi Pono's. Farms that are in developmental stages will use resources at different rates, depending on the type of crop, stage of crop, area of the farm, etc. Accordingly, it is incorrect to assert that system losses can never exceed 22.7%, particularly where Mahi Pono's farm plan is still in a transition period and not yet at full buildout.

EAST MAUI IRRIGATION COMPANY, LLC

P.O. BOX 1104, PU'UNĒNĒ, MAUI, HAWAI'I 96784 • (808) 579-9516

Conclusion

We have provided additional information as the basis for a more equitable way to calculate system losses attributable to the permittees' use of the E. Maui stream water. We believe the County's contractual water amount, which is made available on a daily basis by EMI, should be excluded from any system loss calculation used to assess the Permittees' use of water. Using the most recent available data for a six-month period, EMI's system losses are calculated to be 14.02%.

We are fully cognizant of the need to manage system losses and to use water efficiently and keep these goals at the forefront as we proceed to build out the farm. However, the 22.7% system loss figure referenced in the staff submittal is not being used in the proper context with which it was developed. It should not be, and never was, used as the limit for system losses for a farm in transition, not yet fully built out.

Please do not hesitate to contact us should you have any questions on the information provided in this report.

Sincerely,

Meredith J. Ching, A&B

Mark Vaught, EMI

cc: Ian Hirokawa, DLNR Land Division (via email)

THIS INDENTURE, made this 18th day of March, 1938, by and between the TERRITORY OF HAWAII, acting by and through L. M. Whitehouse, Commissioner of Public Lands for the Territory of Hawaii, with the consent and approval of the Governor and of the Land Board of said Territory, hereinafter called the "Territory", and the EAST MAUI IRRIGATION COMPANY, LIMITED, an Hawaiian corporation, hereinafter called the "Company",

W I T N E S S E T H T H A T :

WHEREAS it is the desire of the Territory to have competitive bidding on licenses to divert water from government lands situated in East Maui; and

WHEREAS the joint use by any future Licensees of the Territory and by the Company of the aqueduct system on East Maui, Territory of Hawaii, extending from Nahiku to Honopou inclusive, which system is partly on government land and partly on Company land, will make competitive bidding possible,

NOW THEREFORE:

I.

THE TERRITORY, in consideration of the easements hereinafter granted to it by the Company and of the covenants and agreements herein contained to be observed and performed by the Company, does hereby grant to the Company a perpetual (except as to cancellation as hereinafter provided) right and easement:

(1) To convey all water now or hereafter owned by the Company and all water covered by any water license now held by the Company or which in the future may be granted to it, jointly with the Territory, without charge, through any or all aqueducts now or hereafter crossing government lands situated in East Maui

EXHIBIT F

extending from Nahiku to Honopou inclusive; and

(2) To divert such water thus conveyed, after due allowance has been made for evaporation, leakage and seepage losses at a point or points designated by the Company, which have been or will be equipped at the Company's expense with suitable turnout and water measuring devices, provided however, that such right and easement to convey and divert such water shall be subject to the following restrictions, to-wit:

(a) During times when the total water contributory to these jointly used aqueducts does not exceed the capacity thereof, that portion of the flow therein, which shall be considered the Company's water, is to equal the quantity of water contributed thereto from sources owned in fee and from those held under license by the Company, and the remaining water shall be considered the Territory's water;

(b) During times when the total water contributory to these jointly used aqueducts exceeds the capacity thereof, that portion of the flow therein which shall be considered the Company's water shall bear the same ratio to the total capacity thereof as the long term average water yield (as hereinafter defined) contributory thereto from sources owned in fee and held under license by the Company bears to the total long term average water yield contributory to these jointly used aqueducts, and the remaining water shall be considered the Territory's water.

II.

THE COMPANY, in consideration of the foregoing grant and of the covenants and agreements to be observed and performed by the Territory, herein contained, does hereby grant to the Territory a perpetual (except as to cancellation as hereinafter provided) right and easement:

(1) To convey water jointly with the Company, without charge, through aqueducts crossing the Company's lands situated in East Maui extending from Nahiku to Honopou inclusive; and

(2) To divert water thus conveyed - after due allowance has been made for evaporation, leakage and seepage losses at points in said area designated by the Territory which have been equipped or will be equipped at the Territory's expense with suitable turn-outs and water measuring devices; the portion of the flow which shall be considered the Territory's water to be that specified above;

(3) To use reservoirs which are owned by the Company and are situated East of Honopou on East Maui, jointly with the Company, without charge, to the end that:

(a) Water in excess of the maximum capacity of, and otherwise contributory to, that portion of the aqueduct system crossing the drainage areas on which these reservoirs are situated, is to be conveyed jointly by the Territory and the Company into these reservoirs, in so far as this can be done by gravity using the existing aqueduct system (natural and artificial);

(b) Water in these reservoirs shall be drawn therefrom and put into that portion of the aqueduct system, which can thus be served by gravity, at a maximum rate limited either by the capacity of the reservoir outlets or the capacity of that portion of the aqueduct system into which the reservoir water is being put, so as to keep the aqueduct system flowing as nearly full as possible; the portion of the water thus drawn from the reservoirs which shall be considered the Territory's water shall bear the same ratio to the total water drawn therefrom as the long term average water yield (as hereinafter defined) contributory to that portion of the aqueduct system located on the drainage areas on

which these reservoirs are situated and derived from sources owned by the government not then under license to the Company, bears to the total long term average water yield contributory to said portion of the aqueduct system, and the remaining portion thus drawn from the reservoirs shall be considered the Company's water.

III.

THE COMPANY, for the consideration aforesaid, does hereby agree that, in order to supplement the stream flows, it will endeavor to develop existing ground water on the Government and Company lands at Nahiku and Keanae above the existing aqueduct system by means of tunneling if in its opinion there are locations where it is feasible to develop water economically.

IV.

IT IS MUTUALLY COVENANTED AND AGREED by and between the parties hereto that:

(1) Each of the existing five licenses now held by the Company to use and convey water from government lands on East Maui shall be cancelled, and/or extended, as the case may be, so that they shall terminate on that June thirtieth nearest to the date stipulated in each respective license as the otherwise normal expiration date; and the final rental on each of these licenses shall be adjusted according to the resulting proportionate curtailment or extension of time, as the case may be;

(2) Licenses 267-B and 974 (two of the said five licenses) which overlap and have no definite line separating them shall be combined and considered under one license on and after the day following the above agreed termination by cancellation, namely on and after the first day of July, 1938.

V.

IT IS FURTHER AGREED that if the Territory, after due legal notice thereof, shall put up at public auction at least sixty days previous to its termination by the above agreed cancellation, and

thereafter at least sixty (60) days previous to its stipulated expiration, each of the aforementioned licenses (reduced to four in number) for a term of thirty (30) years, the Company agrees to bid on such licenses and offer to purchase the right to the water to be granted by any given license, providing the annual sums required to be paid by the licensee thereunder (i.e. the upset price) do not exceed the annual sums which would be required to be paid if the upset price were determined in the manner hereinafter set forth in subsections (a), (b) and (c) hereof and further providing such licenses contain provisions substantially similar to the provisions of subsections (d), (e), (f) and (g) hereof:

(a) When the average price per pound of raw sugar for a given annual payment period, July 1st to the following June 30th, inclusive, is three cents (3¢) or less, the price per million gallons of water diverted from the licensed area under consideration during the given payment period shall be that given in the price list hereinafter set forth;

(b) When the average price per pound of raw sugar for a given annual payment period, July 1st to the following June 30th, inclusive, is greater than three cents (3¢) and not more than four cents (4¢) the price per million gallons of water diverted from the licensed area under consideration during such given payment period shall be that resulting from the price given in the said price list being increased at a rate of three per cent. (3%) for every one-tenth (1/10th) of a cent the said average price of raw sugar exceeds three cents (3¢) per pound;

(c) When the average price per pound of raw sugar for a given annual payment period, July 1st to the following June 30th, inclusive, is greater than four cents (4¢) the price per million gallons of water diverted from the licensed area under consideration during the given payment period shall be that determined as above

for an average price per pound of raw sugar of four cents (4¢).

PRICE LIST FOR WATER DIVERTED FROM EAST MAUI LICENSED AREAS

LICENSE	AREA COVERED	PRICE PER MILLION GALLONS WHEN RAW SUGAR IS THREE CENTS OR LESS PER POUND
Nahiku	From Hana-Koolau boundary to Waiaaka Stream	$ .9539
Keanae	From and including Waiaaka Stream to Nuaailua Stream	1.5009
Honomanu	From and including Nuaailua Stream to Puohakumoa Stream	2.1043
Huelo	From and including Puohakumoa Stream to and including Honopou Stream	2.0980

(d) In the event the Company is the successful bidder on any license it shall, from March to November inclusive of each year, take all of the available East Maui water to which it has acquired a right by license and by ownership in fee, up to that portion of the capacity of the aqueduct system to which it has a right under this agreement; provided, however, if the sugar cane area irrigated by the Company's water is reduced by governmental restrictions this required minimum quantity of water to be taken by the Company may, if the Company desires, be reduced proportionately. During January, February and December of each year the Company shall take only such water as it desires. The curtailed quantity of water, resulting from either of the two foregoing reductions of water, shall be considered as having been taken proportionately from drainage areas, irrespective of whether owned by the Territory or by the Company, according to the long term average yield of each such area and such curtailed quantity of water deemed to be taken from a licensed area shall be the quantity

constructively (according to the above proportionate plan) diverted from that area.

(e) The rental payments required to be made for each of said licenses, in the event the Company is the successful bidder therefor, shall be made semi-annually in advance on or before July 10th and January 10th of each license year, and the amount thereof shall be determined as follows:

(f) The estimated rental shall be determined for the ensuing six months on the basis of the successful bid and upon the assumption that the average price of raw sugar for said six months will be three and one-half cents (3½¢) per pound, and that the quantity of water diverted from the licensed area under consideration will be the long term average quantity for six (6) months diverted therefrom;

(g) Adjustment of rental shall be made within six (6) months after the expiration of the license year, June 30th, so that the resulting rental paid by the Licensee to the Territory will conform to the successful bid, average price of raw sugar for the license year under consideration and the quantity of water actually and constructively diverted during this license year from the licensed area under consideration; refunds or additional payments as the case may be will be made accordingly.

VI.

IT IS ALSO AGREED that:

(1) Failure to bid, by the Company, on any of the said licenses under the specified conditions shall not automatically operate as a cancellation of this agreement but such failure shall give the Territory the option of cancelling the same;

(2) Failure to put up at auction any of the said licenses at the specified time, or failure to fix the upset price in the manner herein required shall not automatically operate as a cancella-

tion of this agreement but such failure shall give the Territory the option of cancelling the same.

VII.

The cost of operation and maintenance of said aqueduct system shall be borne by the Territory and the Company in direct proportion to the use made thereof; that is to say, so long as the Territory has not granted a license to any one other than the Company to take and use water from any of said land or otherwise made use of any of said water, the Company shall be deemed to be the sole user of said aqueduct system and the total cost of operation and maintenance of said aqueduct system shall be borne by the Company. If, however, one other than the Company should become the purchaser of one or more of the licenses, or otherwise become the user of any of said water, then, and in that event the cost of operation and maintenance shall be borne by the Territory and the Company in direct proportion to the product of the water conveyed, and the distance through which it is conveyed through the artificial channels of said aqueduct system by each party respectively.

VIII.

WORDS AND PHRASES appearing herein shall have the following additional special meanings in so far as they apply:

(1) "Territory" shall include its duly appointed representatives, successors, assigns, licensees and lessees;

(2) "Company" shall include its duly appointed representatives, successors and assigns;

(3) "Aqueduct" or "aqueduct system" shall include open ditches, tunnels, flumes, pipe lines, natural and artificial channels, reservoirs, diverting dams, gravel and sand traps, intake structures, together with regulating gates, spillway structures and water measuring devices, and shall also include roads, trails, bridges, etc., used in connection therewith;

(4) "Long term average water yield" shall be the arithmetical average annual water yield which would have been diverted from any given drainage area under consideration had the aqueduct system, at the time of the determination, been in existence during the entire period in which water records are available for such area, and shall be determined jointly by the Territory's and the Company's hydrographers based on all available applicable water measurements and long term rainfall records;

(5) "Average price per pound of raw sugar" shall mean the average of the daily full New York market price, Hawaiian basis, of ninety-six degree (96°) centrifugal raw sugar (at present officially reported from time to time by the Hawaiian Sugar Planters' Association) or its equivalent. In case there is more than one quotation of such market price during any day the arithmetical average of the quotations shall be the market price for such day. In case there is no quotation of such market price for any day then the market price for the last previous day shall be taken as the market price of any such day for which there is no quotation. The average market price for the license year, July 1st to June 30th inclusive, shall be determined by taking the arithmetical average of the daily market prices for each and every day, including Sundays and holidays, for said license year.

IX.

All matters of disagreement that may arise under this agreement which cannot be adjusted by the parties hereto to their mutual satisfaction, as well as any matter herein left to future mutual agreement at the option of either the Territory or Company, shall be submitted to and determined by three arbitrators in the manner prescribed in Chapter 116 of the Revised Laws of Hawaii 1935, as amended from time to time. In any such case either

party may give to the other written notice of the desire to so arbitrate the matter in difference and shall appoint one arbitrator in such notice, whereupon the other party shall, within ten (10) days after receipt of such notice, appoint a second arbitrator, and in case of failure so to do, the arbitrator first named shall appoint such second arbitrator, and the two arbitrators so appointed (in either manner) shall select and appoint a third arbitrator; in the event that the two arbitrators so appointed shall fail to select and appoint a third arbitrator within ten (10) days after the appointment of the second arbitrator, either party may request the appointment of such third arbitrator by the person then holding the position of First Judge of the Circuit Court of the First Judicial Circuit in the Territory of Hawaii at that time; the three arbitrators so appointed shall thereupon proceed to determine the matter in question, difference or disagreement to be determined, and the decision of any two of them, including the disposition of the costs of arbitration, shall be final, conclusive and binding upon both parties unless vacated, set aside or modified as provided by the statutes aforesaid. The arbitrators shall have the powers and duties prescribed by said statutes and judgment may be entered upon such award by said Circuit Court of the First Judicial Circuit.

X.

Nothing herein contained shall be construed to in any way affect any easement or right of way heretofore granted by the Territory to the Company.

IN WITNESS WHEREOF the parties hereto have duly executed

this instrument, in duplicate, the day and year first above written.

TERRITORY OF HAWAII,

By _____
Commissioner of Public Lands.

EAST MAUI IRRIGATION COMPANY, LIMITED,

By _____
Its Vice-President

By _____
Its Treasurer.

APPROVED:

_____
Governor of the Territory of Hawaii.

APPROVED:

_____
Member of the Land Board, Territory of Hawaii.

APPROVED AS TO FORM:

_____
W. B. Kemp, Attorney General, Territory of Hawaii.

STANLEY, VITOUSEK, PRATT & WINN
ATTORNEYS AT LAW
HONOLULU, HAWAII

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CORPORATION

TERRITORY OF HAWAII, }
City and County of Honolulu } ss.

On this ...18th. *day of* .....March....., *A. D. 1938, before me appeared*

.....J.Whitehouse and Jas.F.Morgan.....

to me personally known, who, being by me duly sworn, did say that they are the

.....Vice-President and Treasurer.....

respectively of ....East Maui Irrigation Company, Limited.....

.....

and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and the said .....

.....Jas. F. Morgan..... *acknowledged said instrument to be the free act and deed of said corporation.*

.....
Notary Public, First Judicial Circuit, Territory of Hawaii.

-TERRITORY OF HAWAII-)
: Ss
-CITY AND COUNTY OF HONOLULU-)

On this 21st day of March, A.D. 1938, before me personally appeared L. M. WHITEHOUSE, Commissioner of Public Lands of the Territory of Hawaii, to me known to be the person who executed the foregoing instrument, under his official seal, and acknowledged that he executed the same as his free act and deed as such Commissioner of Public Lands, on behalf of the Territory of Hawaii.

Abbie C. Servat
Notary Public, First Judicial Circuit, Territory of Hawaii.

-TERRITORY OF HAWAII-)
: Ss
-CITY AND COUNTY OF HONOLULU-)

On this 21st day of March, A.D. 1938, before me personally appeared J. B. POINDEXTER, Governor of Hawaii, to me known to be the person who executed the same as his free act and deed as such Governor, on behalf of the Territory of Hawaii.

Abbie C. Servat
Notary Public, First Judicial Circuit, Territory of Hawaii.

Entered of Record this 22nd day of March A. D. 1938 at 9:28 o'clock A.M. and compared. Mark N. Huckestein, Registrar of Conveyances.

By [redacted] Clerk.