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COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII

PETITION TO AMEND INTERIM
INSTREAM FLOW STANDARDS FOR
HONOPOU, HUELO (PUOLUA),
HANEHOI, WAIKAMOI, ALO,
WAHINEPEE, PUOHOKAMOA,
HAIPUAENA, PUNALAU/KOLEA,
HONOMANU, NUAAILUA, PIINAAU,
PALAUHULU, OHIA (WAIANU),
WAIOKAMILO, KUALANI, WAILUANUI,
WEST WAILUAIKI, EAST WAILUAIKI,
KOPILIULA, PUAKAA, WAIOHUE,
PAAKEA, WAIAAKA, KAPAULA,
HANAWI, AND MAKAPIPI STREAMS

Case No. CCH-MA13-01

HAWAIIAN COMMERCIAL & SUGAR COMPANY'S WITNESS LIST IN RE-OPENED EVIDENTIARY HEARING; CERTIFICATE OF SERVICE

HAWAIIAN COMMERCIAL & SUGAR COMPANY'S WITNESS LIST IN RE-OPENED EVIDENTIARY HEARING

No.	Name/Organization/Position	To Be Qualified as an Expert in:	Subject Matter	Requested Length of Direct
1.	Garret Hew, East Maui Irrigation Co., Ltd., President		Implementation of restoration of streams; operation of EMI water system	1 hour
2.	Rick W. Volner, Jr., HC&S, General Manager		HC&S' planned use of its lands and current and future water needs	1 hour

DATED: Honolulu, Hawaii, October 17, 2016.

CADES SCHUTTE LLP

DAVID SCHULMEISTER

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Attorneys for HAWAIIAN COMMERCIAL &

SUGAR COMPANY

COMMISSION ON WATER RESOURCE MANAGEMENT STATE OF HAWAII

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Case No. CCH-MA13-01

CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on this date, a true and correct copy of the foregoing document was duly served on the following parties as stated below:

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Hearings Officer State of Hawaii

Department of Land and Natural Resources Commission on Water Resource Management

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DATED: Honolulu, Hawaii, October 17, 2016.

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COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII

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Case No. CCH-MA13-01

DECLARATION OF ELIJAH YIP FOR REOPENED HEARING

DECLARATION OF ELIJAH YIP FOR REOPENED HEARING

I, ELIJAH YIP, hereby declare:

- 1. I am a partner with Cades Schutte LLP, counsel of record for Hawaiian Commercial & Sugar Company in the above-captioned matter. I make this declaration based upon my personal knowledge, unless otherwise stated.
- 2. Attached hereto as Exhibit C-152 is a copy of the Testimony of William J. Aila, Jr., Deputy to the Chairman of the Department of Hawaiian Home Lands to the Board of Land and Natural Resources on Item D-14, Annual Renewal of Revocable Permits on the Islands of Hawai'i, Maui, Molokai, Kauai, and Oahu dated December 11, 2015. The foregoing document is part of the Record on Appeal in Nā Moku Aupuni O Ko'olau Hui v. BLNR, et al., Civil No. 16-1-0052-01 JHC (1st Cir. Ct.), an agency appeal in which I, along with David Schulmeister, are counsel of record for Alexander & Baldwin, Inc. and East Maui Irrigation Co., Ltd.
- I, ELIJAH YIP, declare, verify, certify, and state under penalty of perjury that the foregoing is true and correct.

DATED: Honolulu, Hawai'i, October 17, 2016.

ELIJAHYIP)

COMMISSION ON WATER RESOURCE MANAGEMENT STATE OF HAWAII

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HANAWI, AND MAKAPIPI STREAMS

Case No. CCH-MA13-01

DECLARATION OF RICK W. VOLNER, JR. FOR REOPENED HEARING

DECLARATION OF RICK W. VOLNER, JR. FOR REOPENED HEARING

I, RICK W. VOLNER, JR., hereby declare:

1. I am General Manager of Hawaiian Commercial & Sugar ("HC&S"), and have served in that position since April 1, 2011. I have previously provided three written declarations in this matter and I testified orally on March 23, 2015 during the previously held hearing herein. My background and qualifications were set forth in my previous testimony.

Background related to this Reopened Hearing

- 2. Much of my prior testimony related to the operations of HC&S which at that time included the cultivation of approximately 35,000 acres of sugarcane and the operation of the Puunene mill and power plant and, more particularly the water used by HC&S in those operations. The evidentiary portion of the original hearing in this matter closed on April 2, 2015, and the written submissions were completed October 2, 2015.
- 3. On January 6, 2016, while the original hearing was awaiting the recommended findings and decision of the Hearings Officer, Alexander and Baldwin, Inc. ("A&B") issued a

press release announcing the transition of HC&S to a diversified farm model, a true and correct copy of which is attached hereto as Exhibit C-153 As explained in the press release, the economics of continuing to operate HC&S as a sugarcane plantation were recognized as being unsustainable and the decision was made to cease sugar cultivation upon completion of the 2016 harvest and transition to a diversified farm model, the goal of which is to retain as much of the plantation in agricultural use as possible with a mix of crops and agricultural activities that will be economically viable.

- 4. On January 15, 2016, the Hearings Officer issued Minute Order 16 to which was attached his Proposed Findings of Fact, Conclusions of Law, & Decision and Order (the "Proposed Decision").
- 5. On February 29, 2016, HC&S submitted its Exceptions to the Proposed Decision acknowledging the impact of its January 6, 2016 announcement on the anticipated future needs for irrigation water from East Maui for the sugarcane fields that were in the process of undergoing their final harvest stating, at pages 2-3:

The short-term impact of HC&S' decision to transition out of sugarcane cultivation will be a significant reduction in HC&S' use of East Maui surface water. HC&S will still need water to complete its final harvest in December 2016, maintain ground coverage on its acreage, and to start the transition to diversified agriculture. In the long-term, A&B's vision is to keep the former plantation lands in central Maui in agriculture through a patchwork of compatible diversified agricultural activities, some farmed by HC&S, some by others.

6. On March 10, 2016, Minute Order 18 was issued by the Commission on Water Resource Management ("CWRM") directing the Hearings Officer to "reopen the hearing to address A&B's decision of January 6, 2016 to change HC&S' business operations from farming sugar to a diversified agricultural model."

- 7. On April 1, 2016, the Hearings Officer issued Minute Order 19 in which he recommended that the scope of the re-opened hearing include the following areas:
 - a. HC&S/A&B's current and future use of surface waters and the impact on the groundwater sources for its central Maui fields of HC&S's cessation of sugar operations;
 - b. the impact of HC&S' cessation of sugar operations on MDWS' use of surface water; and
 - c. Maui County's position on the future use of the central Maui fields; and
 - d. how EMI is managing the decrease in diversions, how it would manage the interim restorations, and any issues concerning the integrity of the EMI ditch system with the current and any future changes in offstream diversions
- 8. On April 20, 2016, A&B announced that it had decided to fully and permanently restore the East Maui streams identified in 2001 by CWRM and the Native Hawaiian Legal Corporation on behalf of its clients. On April 22, 2016, A&B sent a letter to CWRM confirming this, a true and correct copy of which is attached as Exhibit C-154. These streams are: Honopou, Hanehoi (including Puolua), Waiokamilo, Kualani, P`ina`au, Palauhulu, and East and West Wailuanui.
- 9. On August 18, 2016, CWRM issued an Order Regarding the Scope of the Re-Opened Hearing to Address the Cessation of Sugar Operations by HC&S (the "Scope Order"). The Scope Order approved the listing of issues set forth in Minute Order 19.
- 10. This declaration is intended to address the first of the four issues listed above, which essentially relates to the status of HC&S' current water use and its forecasted future water needs to support its goal to put the approximately 30,000 acres that have historically depended on surface water collected by EMI from the EMI ditch system and delivered to HC&S into new agricultural ventures to be pursued by A&B and others.

HC&S' Current Water Use

11. HC&S has harvested all but approximately 2,500 acres of its remaining sugarcane, and is no longer irrigating any of its remaining sugarcane. While HC&S's goal is to put as much of the former cane lands into viable, sustainable diversified ag operations, at this time, HC&S' water use is limited to irrigation of diversified agricultural test crops, irrigation of cover crops to minimize soil erosion and miscellaneous uses such as industrial wash water, firefighting and dust control.

HC&S' Diversified Agricultural Plan

- 12. As noted in my December 30, 2014 declaration submitted in these proceedings, 22,254 acres of land irrigated with EMI water are designated as Important Agricultural Lands ("IAL") pursuant to HRS Chapter 205, Part III. The IAL designation "is a commitment to keep these lands in productive agriculture over the long term."
- 13. Consistent with the IAL designation, HC&S is committed to keeping the lands on which it formerly cultivated sugarcane, a substantial portion of which are designated IAL, in agriculture. As such, HC&S is actively engaged in furthering of a plan to transition the former sugarcane lands to the cultivation of diversified agriculture by A&B and others that would be sustainable and economically viable (the "Diversified Agricultural Plan").
- 14. As should be evident from the historical difficulties experienced by other Hawaiian plantations in transitioning large tracts of acreage freed up upon the cessation of sugar and pineapple cultivation, it is extremely challenging to immediately identify an economically viable plan to maintain the majority of the HC&S lands in an alternative agricultural use. This plan will evolve over time. Considerable effort has been invested by HC&S in utilizing its own farming experience, consulting with industry and government organizations, and conducting

research and field tests to come up with the best possible mix of uses for its Diversified Agricultural Plan.

15. Exhibit C-155 is a color coded map generated by HC&S that illustrates the mix of uses currently envisioned by HC&S' Diversified Agricultural Plan. The conceptual uses, and corresponding colors, are as follows:

Irrigated pastures for livestock Dark Green

Unirrigated pastures for livestock Light Yellow

Bioenergy crops Pink

Grain / Animal feed crops Dark Yellow

Agricultural Parks Red

Large Diversified Farm leases Beige

Mango / Avocado Orchards Light Blue

Pongamia Orchards Purple

Beverage crops (coffee/cacao) Light Green

Dairy operations Dark Blue

16. In siting the differing uses throughout the former sugar lands, HC&S considered, among other things, varying soil types, rainfall, solar radiation, and the relative tolerance of the different crops to irrigation with brackish water. Thus, in general, crops with a lower tolerance for irrigation with brackish water are sited in the higher elevations which do not have access to well water. On the other hand, grasses, bioenergy crops, and crops raised for animal feed, which have a suspected relatively higher tolerance for irrigation that is supplemented with brackish water, are sited in the lower elevations where HC&S has historically used its brackish water wells to supplement surface water imported from EMI, in the east, and the Na Wai Eha streams, in the west, to meet the irrigation needs of approximately 35,000 acres of sugar cultivation.

- 17. Excluding the Waihee Hopoi fields, which have never been served with water from the EMI ditch system, the Diversified Agricultural Plan envisions the use of 31,250 acres of former sugar fields that were previously irrigated with a combination of surface water delivered by EMI and brackish water pumped from HC&S' brackish water wells. Of these 31,250 acres, 4,650 acres are planned for unirrigated livestock pastures on the eastern edge of the plantation where there it is anticipated that there is sufficient rainfall to support this use. This leaves 26,600 acres that will need to be irrigated.
- 18. Exhibit C-156 is a table that summarizes HC&S' forecast of the irrigation requirements for the 26,600 acres, noting for each category of use the acreage that is located above the reach of HC&S' brackish water wells and thus can be irrigated with surface water only. The irrigation requirement for each crop was determined by applying the appropriate crop co-efficient to the average daily evapotranspiration rates for the fields in question, crediting average rainfall, and expressing the remaining requirement in gallons per acre per day ("GPAD"). The data used to make these calculations are shown on Exhibit C-157 attached.
- 19. The aggregate irrigation requirement for the 26,600 acres is 3,369 GPAD, which amounts to 37,709 million gallons per year, or an average daily requirement of 90 million gallons per day ("mgd"). To account for seepage, evaporation and other system losses, HC&S has used the same system loss percentage of 22.7% that HC&S estimated and presented in evidence previously in Exhibit C-137, which the Hearings Officer found to be reasonable in the Proposed Decision. The gross amount of water needed to yield the net irrigation requirement of 90 mgd, at a loss rate of 22.7%, is 116 mgd.
- 20. The gross irrigation requirement for acreage that is 100% dependent on surface water breaks down as follows:

Pasture- Irrigated	3440 acres @ 1992 GPAD	6.85 mgd
Agricultural Park	1025 acres @ 2566 GPAD	2.63 mgd
Diversified Ag	1950 acres @ 2630 GPAD	5.13 mgd
Orchard Crops	2250 acres @ 5279 GPAD	11.88 mgd
Beverage Crops	900 acres @ 5096 GPAD	4.59 mgd
Total irrigation requi	31.08 mgd	
Gross irrigation requi	40.21 mgd	

21. The gross irrigation requirement for acreage with access to well water breaks down as follows:

Pasture irrigated	1150 acres @ 1314 gad	1.51 mgd
Dairy irrigated	3950 acres @ 2272 gad	8.97 mgd
Orchard crops	815 acres @ 5387 gad	4.39 mgd
Pongamia	2500 acres @ 4478 gad	11.19 mgd
Bioenergy crops	8620 acres @ 3759 gad	32.40 mgd
Total irrigation requi	58.46 mgd	
Gross irrigation requi	75.64 mgd	

22. At first blush, it might appear that the irrigation requirement for these fields could be met almost entirely with well water, since HC&S has historically pumped an average of approximately 70 mgd when in full sugar cultivation to supplement the surface waters imported from EMI. However, the transition to diversified agriculture will bring with it several key changes that will impact the utility and reliability of this brackish water resource in the future—reduced recharge from lower levels of irrigation of the overlying lands, uncertain tolerance of diversified agriculture crops to heavy reliance on brackish water, and the higher costs associated with well water versus surface water, and the higher economic hurdles related to higher levels of

investment in new agricultural ventures versus ongoing sugar operations where the major investments were already made. HC&S and other farmers of HC&S lands cannot simply assume that it would be viable or prudent to rely principally on brackish well water to irrigate these fields.

- 23. It would be irresponsible to expect to utilize groundwater resources at historical levels while greatly reducing surface water importation into the central valley of Maui. It is unclear what the direct relationship of recharge from surface water importation to the underlying groundwater aquifer is, but historical groundwater pumping levels certainly were higher than published sustainable yields.
- 24. The crops conceptually planned for the area that can access groundwater are known to be tolerant to some levels of brackish water irrigation. What that level is and the impacts of prolonged uses of brackish water on these crops are unknown at this time. It is important to remember that when these fields were planted with sugarcane, well water was periodically being applied during dry periods to a crop with a twenty four month crop cycle. It is unknown just how well the crops currently planned for those acres will tolerate brackish water, but the mere fact that they will generally have much shorter crop cycles than sugarcane means that they will have less time to recover from sustained periods of reliance upon brackish water during dry periods, and will thus be generally more vulnerable to the negative impacts on crop growth associated with prolonged exposure to brackish water. As with sugarcane cultivation, the prolonged or primary use of brackish water could have additional negative impacts on soil health with the buildup of minerals and salts without adequate surface water to flush these constituents.
- 25. There are also increased costs associated with utilizing well water rather than surface water as has previously been established in these proceedings. It is unknown at this time

if the economics of the diversified agriculture uses envisioned for these lands can support the

increased costs associated with utilizing well water. Unlike sugar, where the major investments

necessary to support operations had previously been made, new diversified agriculture ventures

will require significant new investments in farming and processing equipment. The assurance of

the availability of an economically feasible source of water is necessary to justify such major

investments by A&B and others who will be farming on HC&S land. Additional operating costs,

such as the cost to pump groundwater, could cause the return on these investments to be less

attractive and difficult to justify.

I, RICK W. VOLNER, JR., declare, verify, certify, and state under penalty of perjury that

the foregoing is true and correct.

DATED: Maui, Hawaii, October 17, 2016.

RICK W. VOLNER, JR.

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COMMISSION ON WATER RESOURCE MANAGEMENT STATE OF HAWAII

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HANAWI, AND MAKAPIPI STREAMS

Case No. CCH-MA13-01

DECLARATION OF GARRET HEW FOR REOPENED HEARING

DECLARATION OF GARRET HEW FOR REOPENED HEARING

I, GARRET HEW, hereby declare:

- 1. I am the President of East Maui Irrigation Co., Ltd. ("EMT"), a subsidiary of Alexander & Baldwin, Inc. ("A&B"). I am also the Water Resources Manager for Hawaiian Commercial and Sugar Company ("HC&S"), which is the division of A&B that operates A&B's sugar operations on Maui. I have previously provided three written declarations in this matter and I testified orally on March 17 and 18, 2015 during the previously held hearing in this matter. My background and qualifications were set forth in my previous testimony.
- 2. This declaration is intended to address the issues identified in subparagraph 1 d. of the Hearings Officer's Minute Order 19, which are set forth below:
 - d. how EMI is managing the decrease in diversions, how it would manage the interim restorations, and any issues concerning the integrity of the EMI ditch system with the current and any future changes in offstream diversions

How EMI is managing the decrease in diversions

- There are primarily four ways to reduce the amount of water that is collected and transported in the EMI ditch system: 1) on streams that have controlled diversions, by closing or reducing the diversion intake gate openings; 2) on stream diversions that have sluice gates, by partially or completely opening the sluice gates; 3) on streams that have radial gates between the diversions and the ditch, by completely closing the radial gates; and 4) by partially or completely closing the gates on the main control points on the ditches themselves to limit the amount of water that can pass each control point, the effect of which is to redirect any excess water into the stream crossed by the ditch where the control point is located.
- 4. The streams that have controlled diversions are Hanawi, Kapaula, Paakea, Puakea, Waiohue, East Kopiliula, East Wailua-iki, West Wailua-iki, East Wailuanui, West Wailuanui, Haipuaena and Kolea. The intake gates are openings, which are typically constructed with wooden boards or metal plates, are used to regulate the size of the opening and thus how much water can flow from the stream into the diversion structure. The controlled diversions for the above streams are all at the Koolau Ditch level of the EMI ditch system with the exception of Haipuaena and Kolea, where the diversions are at the Spreckels Ditch, which at that point is located at a higher elevation than the Koolau Ditch.
- 5. The streams that have diversion structures with sluice gates are Makapipi, Hanawi, Kapaula, Paakea, Puakea, Waiohue, East and West Kopiliula, East Wailua-iki, West Wailua-iki, East Wailuanui, West Wailuanui, Palauhulu, Nuaailua, Honomanu, Kolea, Alo, Waikamoi, Kaaiea, Oopuola, Nailiilihaele, Kailua, Ohanui, Hoalua, Hanehoi, Waipio, Mokupapa, Hoolawa-liili, Hoolawa-nui, and Honopou. These include diversions located on the Koolau Ditch, the Wailoa Ditch, the Spreckels Ditch, the Center/Manuel Luis Ditch, the New

Hamakua Ditch, the Lowrie Ditch and the Haiku Ditch. Sluice gates are openings within the basin of the diversions that can be opened to discharge the water collected in the diversion back into the stream. Periodically opening sluice gates to flush out silt, gravel and other debris that collects in the diversion structures is one of the normal means of maintaining the proper functioning of the ditch system. The effect of opening a sluice gate is to return water to the stream after it has entered the diversion structure. It may not always cause 100% of the water that entered the diversion to be discharged back into the stream, however, because during periods of heavy rainfall, water may back up in the diversion faster than it can be discharged through the sluice gate, in which case some water will still enter the ditch. During most flow conditions, however, completely opening the sluice gate will return practically all of the water to the stream.

- 6. The streams that have radial gates between the diversions and the ditch are Puohokamoa, Alo, Waikamoi, Kaaiea, Oopuola, Nailiilihaele, Kailua, Ohanui, Hoalua, Hoolawaliili, Hoolawa-nui, and Honopou. These gates are located along the tunnel reaches of the ditch and were designed to automatically open or close in relation to the water level in the tunnel. The gates are controlled by a float located in a float chamber in the tunnel that is connected to a cable that lifts or lowers the radial gate depending on the water level in the tunnel. The operation of the gates can be adjusted by piping water to the float chamber and closing the drain valve on the chamber to raise the float to maintain the gate in the closed position.
- 7. The main ditch control points on the Koolau ditch are located near where the ditch crosses Waiaaka (the #3 gatehouse), Hanawi (Awaimakaino), Waiaaka sluice basin, Kopiliula, East Wailua-iki (# 6 gatehouse) and Piinaau Streams. The main ditch control points on the Spreckels ditch are located near where ditch crosses Uluini, Kolea, Haipuaena and Puohokamoa Streams. The main ditch control points on the Manuel Luis / Center ditch are located near where

ditch crosses Haipuaena, Puohokamoa and Waikamoi Streams. The main ditch control points on the Wailoa ditch / tunnel are located near where ditch crosses Kolea and Honopou Streams. The main ditch control points on the New Hamakua ditch are located near where ditch crosses Alo, Nailiilhaele, Hoolawa and Honopou Streams. The main ditch control point on the Lowrie ditch is located near where ditch crosses Kailua, Hoalua and Hoolawa Stream. The main ditch control points on the Haiku ditch are located near where ditch crosses Hoolawa and Honopou Streams.

- 8. EMI manages the reduction in diversions by implementing a combination of measures that involve adjusting the intake control gates on the streams with controlled diversions, opening the sluice gates at the diversion on streams that have sluice gates, adjusting the operation of radial gates on the streams that have radial gates, and partially or completely closing the gates on main ditch control points. The precise combination of measures implemented by EMI at any given point in time depends on the amount of water sought to be brought in to serve the needs of HC&S and the County of Maui, and the amount of rainfall that is occurring among the watershed areas that span the ditch system.
- 9. Currently, since HC&S is utilizing very little irrigation water and there has been a lot of rainfall throughout the East Maui area, EMI has closed the intakes on all of the streams with controlled diversions, has opened the sluice gates on the majority of diversions that have sluice gates, has closed the radial gates on a couple of streams with radial gates, and has closed the main ditch control points on the Koolau ditch where it crosses Waiaaka (the #3 gatehouse), Hanawi (Awaimakaino), Waiaaka sluice basin, Kopiliula, East Wailua-iki (# 6 gatehouse) and Piinaau Streams. All of the stream water that originates from the Nahiku and Keanae water license area is currently not diverted. The effect of these measures is to rely principally on water entering the ditch system west of Piinaau stream to meet the reduced needs of HC&S and the

County of Maui. With these measures in place, water flows in the Wailoa ditch at Maliko Gulch have been reduced to 20 to 25 mgd, which is enough to serve the County and HC&S' reduced water needs.

- 10. Under drought conditions, EMI would be implementing a different set of gate adjustments because it would not be possible to meet even the lowered needs of HC&S and the County without importing water from further east, in the Nahiku and Keanae area, where base flows are more reliable and there is a ground water contribution to the Koolau Ditch, in order to maintain a consistent flow in the Wailoa Ditch.
- 11. As irrigation requirements increase, EMI expects to implement a selective opening of board gates, readjusting the opening of sluice gates, resetting of radial gates, and readjusting of main ditch control gates to increase the amount of water brought into the ditch system and delivered to HC&S and the County. These measures will be dictated by the flow levels needed at Maliko Gulch and the rainfall patterns throughout the East Maui watersheds.

How EMI is managing the interim restorations

- 12. With regard to the interim implementation of the restoration of the streams that EMI has agree to fully and permanently restore, EMI has 1) closed the intakes and opened the sluice gates on the diversions on East and West Wailuanui Streams on the Koolau Ditch; 2) has opened the sluice gate on Palauhulu Stream on the Koolau Ditch; 3) has opened the sluice gates on the diversions on Hanehoi and Puolua on the Haiku Ditch; and 5) has opened the sluice gate and closed the radial gate on the Wailoa Ditch, made modifications to the intake on the New Hamakua Ditch, opened the sluice gate and closed the intake diversion on the Lowrie Ditch and modified the diversion on the Haiku Ditch on Honopou Stream.
 - 13. Further measures to achieve the full and permanent restoration of these streams

cannot be taken until EMI obtains all necessary permits and government approvals. Exhibit C-

158 is a table that summarizes by stream a work plan to fully and permanently abandon these

diversions. On September 16, 2016, EMI submitted to CWRM its applications to abandon the

following stream diversions: Honopou, Hanehoi (Puolua), Waiokamilo, Kualani, Pi'ina'au,

Palauhulu and Wailuanui (East and West).

14. Other pending approvals and concurrences will be needed from the County,

Office of Conservation and Coastal Lands and the United States Army Corps of Engineers.

The integrity of the EMI ditch system with changes in diversions

15. The reduction in diversion amounts does not by itself compromise the structural

integrity of the EMI ditch system so long as the complete system, including the open ditches and

roadways, continues to be maintained as a single, coordinated system. Consistently reduced

flows will increase the amount of maintenance required of the open ditches in the system,

because it will increase the surface areas that will need to be periodically cleared of vegetation.

I, GARRET HEW, declare, verify, certify, and state under penalty of perjury that the

foregoing is true and correct.

DATED: Maui, Hawaii, October 17, 2016.

GARRET HEW

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