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070102-00001

February 19, 2020

Via Hand Delivery

Daniel Orodenker, Executive Officer
Land Use Commission
State of Hawaii
State Office Tower
Leiopapa A Kamehameha Building
235 South Beretania Street, Suite 406
Honolulu, Hawaii 96813

Re: Annual Report: Docket No. A97-721 (Makena Resort)

Dear Executive Officer Orodenker:

On behalf of the ATC Makena Entities (defined below), we hereby submit this Annual Report for Docket No. A97-721.

I. BACKGROUND

On February 19, 1998, the Land Use Commission of the State of Hawaii (the "**Commission**") filed its *Findings of Fact, Conclusions of Law, and Decision and Order* (the "**1998 D&O**"), which reclassified 145.943 acres of land in Makena, island of Maui, state of Hawaii from the State Land Use Agricultural District into the State Land Use Urban District (hereinafter, the "**LUC Reclassified Property**"). The LUC Reclassified Property consists of six non-contiguous areas of various sizes, adjacent to, and largely surrounded by, pre-existing Urban District land.

The ATC Entities, consisting of ATC Makena N Golf LLC, ATC Makena S Golf LLC, ATC Makena Land SF1 LLC, ATC Makena Land MF1 LLC, ATC Makena Land MF2 LLC, ATC Makena Land MF3 LLC, ATC Makena Land C1 LLC, ATC Makena Land U1 LLC, ATC Makena Land B1 LLC, ATC Makena Land MF4 LLC, ATC Makena Land SF2 LLC and ATC Makena Land AH1 LLC (collectively, the "**ATC Entities**", together with ATC Makena Hotel LLC, the "**ATC Makena Entities**"), acquired portions of the LUC Reclassified Property by three Commissioner's Deeds dated August 27, 2010.

One deed was recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 2010-125618 and applies to TMK No. (2) 2-1-005: 108. Another deed was recorded in the Bureau as Document No. 2010-125620 and applies to TMK No. (2) 2-1-008: 090. The third deed was recorded in the Bureau as Document No. 2010-125626 and applies to TMK Nos. (2) 2-1-005: 086 (portion of which is within the LUC Reclassified Property), and 125 (which is not within the LUC Reclassified Property).

H2R, LLC owns the remaining portion of the LUC Reclassified Property. Public records show that H2R, LLC acquired approximately 27.83 acres of the LUC Reclassified Property by deed recorded October 1, 2018. H2R, LLC is not affiliated with the ATC Makena Entities. The ATC Makena Entities never held title to that portion of the LUC Reclassified Property that is currently owned by H2R, LLC.

This Annual Report covers those portions of the LUC Reclassified Property that are owned by the ATC Makena Entities, identified by the following TMK Nos. (2) 2-1-005: 108 (por.), 2-1-008: 090 (por.), and 2-1-005: 086 (por.) (formerly TMK 2-1-007:004), referred to in the responses herein as the "**Petition Area**." This Annual Report does not address any properties owned by others, such as the property owned by H2R, LLC.

On August 27, 2012, the Commission filed an Order Granting With Modification Movant's Motion for Sixth Amendment to the Findings of Fact, Conclusions of Law, and Decision and Order, Filed on February 19, 1998, and for Release of Certain Conditions (the "**2012 Amendment**"). Pursuant to the 2012 Amendment, the Commission released the ATC Makena Entities from Conditions 4, 15 and 21, and amended Conditions 12 and 22 (thereafter renumbered to 11 and 19). An Amended and Restated Declaration of Conditions was recorded on September 7, 2012, in the Bureau as Doc. No. A-46330782.

II. STATUS OF COMPLIANCE WITH LUC CONDITIONS

The following 19 conditions (in italics) are the conditions set forth in the 1998 D&O, as amended by the 2012 Amendment. ATC Makena Entities' description of efforts made and underway to comply with each stated condition follows as a response after each condition.

1. *Petitioner shall provide affordable housing opportunities for low, low-moderate, and gap group income residents of the State of Hawai`i in accordance with applicable laws, rules, and regulations of the County of Maui. The location and distribution of the affordable housing or other provisions for affordable housing shall be under such terms as may be mutually agreeable between Petitioner and the County of Maui.*

   Response: The ATC Makena Entities acknowledge that the Petitioner is subject to the provisions of said condition and will comply.

2. *Petitioner shall coordinate with the County of Maui Board of Water Supply to incorporate the proposed project into the County Water Use and Development Plan for the area. Prior to the granting of the first discretionary permit for the single-family and multi-family residential development described in paragraph 20 of the Decision and Order or the hotel described in paragraph 21 of the Decision and Order and by or before one year from the issuance date of this Decision and Order, Petitioner shall furnish the Commission with a letter from the County of Maui Board of Water Supply confirming that (a) the potable water allocation that will be credited to Petitioner will be available to and sufficient for the proposed project as it is described in the Petition, (b) the availability of potable water will not be an obstacle or impediment to the development of the proposed project as described in the Petition and (c) the proposed project as it is described in the Petition has been incorporated into the County Water Use and Development Plan for the area and that this plan will prevent the continued overpumping of the sustainable yield of the Iao aquifer.*

Response: As provided in prior Annual Reports, this condition was complied with as set forth in a letter from David Craddick, Director of the Department of Water Supply, County of Maui, dated February 18, 1999.

Additional letters regarding compliance with this condition, dated October 1, 2003, from Petitioner to the Department of Water Supply, and the response from George Tengan, Director of Water Supply, dated October 7, 2003, were attached to prior Annual Report submitted in this Docket.

The ATC Makena Entities understand that this condition has been satisfied.

3. *Petitioner shall participate in the funding and construction of adequate water source, storage, and transmission facilities and improvements to accommodate the proposed project in accordance with the applicable laws, rules and regulations of the County of Maui, and consistent with the County of Maui water use and development plan.*

Response: The ATC Makena Entities acknowledge this condition. Furthermore, the ATC Makena Entities understand that in 1976 the Petitioner participated in the Central Maui Source Development Joint Venture and also the Central Maui Transmission Joint Venture, which developed water sources in Waiehu, Maui and a transmission line from the newly developed water sources down to the Wailea and Makena regions. Further, in 1985, Makena Resort constructed a 1.5-million-gallon water storage tank at the Makena Resort.

4. *Petitioner shall contribute to the development, funding, and/or construction of school facilities, on a pro rata basis for the residential developments in the proposed project, as determined by and to the satisfaction of the State Department of Education ("DOE"). Terms of the contribution shall be agreed upon by Petitioner and DOE prior to Petitioner acquiring county rezoning or prior to Petitioner applying for building permits if county zoning is not required.*

Response: ATC Makena Entities understand that this condition has been satisfied. Pursuant to an Educational Contribution Agreement for Makena Resort between Petitioner and the Department of Education dated August 17, 2000, the parties have agreed upon a cash contribution by Petitioner which shall represent a fair share payment for the development, funding and/or construction of school facilities by Petitioner.

5. *Petitioner shall participate in the pro rata funding and construction of adequate civil defense measures as determined by the State of Hawai`i and County of Maui civil defense agencies.*

Response: This condition has been satisfied. Initially, at the request of the State Department of Defense ("DOD"), the ATC Makena Entities agreed to allow two (2) emergency siren sites to be developed on land owned by the ATC Makena Entities. One at the Makena Wastewater Treatment Plant, and one near Makena Big Beach (Oneloa) (sirens 157 and 158, respectively). As reported in the 15th Annual Report, the ATC Makena Entities executed Rights of Entry/License Agreements with the DOD in 2012. However, in December 2016, DOD informed the ATC Makena Entities that it had decided to forgo the location near Makena Big Beach (Oneloa), and instead would be installing the second siren at Makena State Park. However, DOD still intended to use the site near the Makena Wastewater Treatment Plant. In 2017, DOD completed installation of the siren at the Makena Wastewater Treatment Plant.

6. *Should any human burials or any historic sites such as artifacts, charcoal deposits, stone platforms, pavings, or walls be found, Petitioner shall stop work in the immediate vicinity and contact SHPD. The significance of these finds shall then be determined and approved by SHPD, and an acceptable mitigation plan shall be approved by SHPD. SHPD must verify that the fieldwork portion of the mitigation plan has been successfully executed prior to work proceeding in the immediate vicinity of the find. Burials must be treated under specific provisions of Chapter 6E, Hawai`i Revised Statutes.*

Response: The ATC Makena Entities acknowledge that they are subject to the provisions of said condition and will comply.

7. *Petitioner shall follow the State DLNR recommendations for Petition Areas 1, 2 and 3, for archaeological data recovery and preservation. An archaeological data recovery plan (scope of work) must be approved by SHPD. That plan then must be successfully executed (to be verified in writing by the SHPD), prior to any grading, clearing, grubbing or other land alteration in these areas. In Petition Area 1, three significant historic sites (1969, 2563, 2569) are committed to preservation. A preservation plan must be approved by SHPD. This plan, or minimally its interim protection plan phase, must be successfully executed (to be verified in writing by the SHPD), prior to any grading, clearing, grubbing or other land alteration in these areas.*

Response: The ATC Makena Entities acknowledge that they are subject to the provisions of said condition and will comply prior to any grading, clearing, grubbing or other land alteration in these areas.

8. *Petitioner shall implement efficient soil erosion and dust control measures during and after the development process to the satisfaction of the State Department of Health and County of Maui.*

Response: The ATC Makena Entities acknowledge that they are subject to the provisions of said condition and will comply at the appropriate time prior to commencement of construction.

9. *Petitioner shall initiate and fund a nearshore water quality monitoring program. The monitoring program shall be approved by the State Department of Health in consultation with the U.S. Fish and Wildlife Service, the National Marine Fisheries Services, and the State Division of Aquatic Resources, DLNR. Petitioner shall coordinate this consultation process with the concurrence of the State Department of Health. Mitigation measures shall be implemented by Petitioner if the results of the monitoring program warrant them. Mitigation measures shall be approved by the State Department of Health in consultation with the above mentioned agencies.*

Response: The ATC Makena Entities continue to implement and fund a nearshore water quality monitoring program. This program initially collected base line water samples and analyzed the same to determine turbidity, chemical compound contents and biota sampling. This monitoring program continues with at least semi-annual sampling at four separate nearshore sites.

Enclosed herein as **Exhibits A** and **B** respectively, are the two most recent marine water quality monitoring reports dated June 18, 2019 and August 12, 2019, along

with copies of the transmittal to the State of Hawaii Department of Health dated July 29, 2019 and September 4, 2019.

The ATC Makena Entities acknowledge that they are subject to the provisions of said condition and will comply.

10. *Petitioner shall submit a Traffic Impact Analysis Report (TIAR) for review and approval by the State Department of Transportation and the County of Maui.*

Response: As described in prior Annual Reports, a TIAR was prepared and submitted for review by the State Department of Transportation (DOT) and the County of Maui as part of the change in zoning application. Following certain comments by DOT, revisions were made to the TIAR which DOT agreed with as set forth in a letter from Kazu Hayashida, Director of Transportation, dated May 2, 2000, a copy of which was provided to the Commission with a prior Annual Report in this Docket.

In addition, as set forth in prior Annual Reports, the Petitioner prepared and submitted a Makena Resort Master Traffic Study, dated June 6, 2003 (Revised September 14, 2003), which was submitted to the SDOT and County of Maui, and approved by the County on September 26, 2003.

ATC Makena Entities understand that this condition has been satisfied.

11. *Petitioner shall participate in the pro rata funding and construction of local and regional transportation improvements and programs including dedication of rights-of-way as determined by the State Department of Transportation ("DOT") and the County of Maui. Agreement between Petitioner and DOT as to the level of funding and participation shall be obtained within fourteen (14) years from June 1, 2000.*

Response: The ATC Makena Entities acknowledge that they are subject to provisions of said condition and will comply.

This condition has been partially satisfied, as detailed below. Moreover, as reported to the Commission at the status hearing last September, and in our letter of December 6, 2019, the ATC Makena Entities are in active communication with DOT on an agreement to address the ATC Makena Entities' pro rata share of funding and participation toward transportation improvements. The ATC Makena Entities submitted a draft memorandum of agreement to DOT in September of last year and have continued correspondence with DOT and met with DOT representatives last month to review the draft memorandum of agreement. At this

point, DOT has expressed a desire to delay entering into a formal agreement with the ATC Makena Entities regarding the obligations related to the Petition Area until the ATC Makena Entities have completed a traffic study that covers more than just the approximately 120-acre Petition Area (most of which was and continues to be in golf course use). The traffic study will cover some 1,000 acres in the Makena area. The ATC Makena Entities will be completing this traffic study in conjunction with its larger environmental review process for the Makena area properties. The ATC Makena Entities are working with DOT to establish and confirm the appropriate parameters of this traffic and will be meeting with their traffic engineer and DOT next month.

The current approach to satisfy this condition is different from the plan that was in effect for several years. Under the prior plan, which was coordinated with DOT, the condition was going to be satisfied through a joint effort between the ATC Makena Entities, Honua'ula Partners, LLC, A&B Wailea LLC, and Keaka LLC. Therefore, these parties jointly prepared a Final Environmental Assessment to assess the impacts of a widening of Piilani Highway. DOT accepted the FEA and issued a FONSI (OEQC in May 2012). These same parties intended to enter into an "Inter-Developer Agreement" to address the actual construction of improvements. However, after all of that effort it became apparent that the multi-party approach would not be feasible because the landowners were all at different stages of development and subject to different conditions of approval. The ATC Makena Entities understand that certain of the landowners have pursued individual agreements with DOT; ATC Makena Entities are likewise pursuing such an agreement with DOT.

Partial satisfaction of this condition was achieved through the "Agreement for Planning and Design of Piilani Highway Expansion" between Makena Resort Corp. (the original Petitioner), and DOT in 2001. Under this Agreement, Petitioner agreed to fund the planning and design of the restriping and other improvements to Piilani Highway from Mokulele Highway to Kilohana Drive, to increase it from two lanes to four lanes. This work has been completed.

12. *Petitioner shall fund the design and construction of drainage improvements required as a result of the development of the Property to the satisfaction of the appropriate State of Hawai`i and County of Maui agencies.*

Response: ATC Makena Entities acknowledge that they are subject to the provisions of said condition and will comply.

As reported in prior Annual Reports, Petitioner prepared a Drainage Master Plan, which was submitted to the County Department of Public Works and

Environmental Management and Planning Department on July 1, 2003, and approved by the County on August 20, 2003.

13. *The Petition Areas will be developed in accordance with the Kihei-Makena Community Plan.*

Response: The ATC Makena Entities acknowledge that development of the Petition Area is to be in accordance with the Kihei-Makena Community Plan.

14. *Petitioner shall fund, design and construct all necessary traffic improvements necessitated by development of the Petition Areas as required by the State Department of Transportation and the County of Maui Department of Public Works and Waste Management.*

Response: The ATC Makena Entities acknowledge that they are subject to the provisions of said condition and will comply. Traffic improvements required by DOT will be addressed pursuant to Condition 11.

15. *Petitioner shall develop the Property in substantial compliance with the representations made to the Commission. Failure to so develop the Property may result in a reversion of the Property to its former classification, a change to a more appropriate classification, or other reasonable remedy as determined by the Commission.*

Response: The ATC Makena Entities acknowledge that they are subject to the provisions of said condition and will comply.

16. *Petitioner shall give notice to the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interests in the Property, prior to development of the Property.*

Response: The ATC Makena Entities acknowledge that they are subject to the provisions of said condition and will comply.

17. *Petitioner shall timely provide without any prior notice, annual reports to the Commission, the Office of Planning, and the County of Maui Planning Department in connection with the status of the subject project and Petitioner's progress in complying with the conditions imposed herein. The annual report shall be submitted in a form prescribed by the Executive Officer of the Commission.*

Response: The ATC Makena Entities acknowledge that they are subject to the provisions of said condition and will comply. The submittal of this Annual Report by the ATC Makena Entities is in compliance with this condition.

18. *The commission may fully or partially release or amend the conditions provided herein as to all or any portion of the petition area upon timely motion and upon the provision of adequate assurance of satisfaction of these conditions by Petitioner.*

Response: The ATC Makena Entities acknowledge that they are subject to the provisions of said condition.

19. *Petitioner shall record the conditions imposed herein by the Commission and every amendment thereto with the Bureau of Conveyances pursuant to Section 15-15-92, Hawai`i Administrative Rules.*

Response: This condition has been satisfied and the ATC Makena Entities acknowledge that they are subject to the provisions of said condition in the event of any amendments. The ATC Makena Entities recorded an Amended and Restated Declaration of Conditions Applicable To An Amendment to District Boundary From Agricultural to Urban, in the Bureau on September 7, 2012 as Document Number A-46330782, a copy of which was provided to the Commission as part of a prior Annual Report transmittal.

If you have any questions or require any further information, please contact me or Mr. Ka'imi Judd at 808-640-6023.

Sincerely,

Jennifer A. Lim

JAL/ljah

cc: State of Hawaii, Office of Planning
County of Maui, Department of Planning

Encls. Exhibit A: Quarterly Water Quality Sampling Event report by AECOS, Inc., dated June 18, 2019, with transmittal to State of Hawaii Department of Health dated July 29, 2019.
Exhibit B: Quarterly Water Quality Sampling Event report by AECOS, Inc., dated August 12, 2019, with transmittal to State of Hawaii Department of Health dated September 4, 2019.

ATC Makena Hotel, LLC
c/o Makena Golf & Beach Club

July 29, 2019

Mr. Myron Honda
State of Hawaii, Department of Health
Clean Water Branch
2827 Waimano Home Road #225
Pearl City, HI 96782

RE: State Land Use District Boundary Amendment Docket A9-721 Condition No. 9, County of Maui Zoning Ordinance No. 3613 Condition No. 19, Marine Water Quality Monitoring.

Dear Mr. Honda,

ATC Makena Holdings, LLC, in compliance with the above referenced conditions, respectfully submits the enclosed Marine Water Quality Quarterly Monitoring Report prepared by AECOS Inc. dated June 18, 2019 for the quarterly tests performed in March of 2019.

Should you have any questions, require a hardcopy, or require additional information, please do not hesitate to contact me at (808) 640-6023, or by email at kjudd@makenagbc.com.

Sincerely,

Makena Golf & Beach Club,
For ATC Makena Hotel, LLC

Kaimi Judd
Vice President of Development

Enclosures (1):
a. PDF Copy of the March 2019 Quarterly Water Quality Sampling Report

Cc:
Mark Roy, Munekiyo Hiraga

EXHIBIT A

Mākena Golf & Beach Club
Quarterly water quality sampling event

March 2019

June 18, 2019 | ***Final Report*** | *AECOS* No. 1535D

Allen Cattell, Ph.D.
AECOS, Inc.
45-939 Kamehameha Highway, Suite 104
Kāneʻohe, Hawaiʻi 96744
Phone: (808) 234-7770 Email: Cattell@aecos.com

Introduction

This report is the quarterly report for the March 7, 2019 water quality sampling event for Mākena Golf & Beach Club (MG&BC); a program stipulated in Condition No. 10, Declaration of Conditions pertaining to the Amendment of the District Boundary dated April 17, 1998, as required by the State Land Use Commission. County of Maui, Zoning Ordinance 3613, Condition 19 includes a similar requirement. The primary goals of the monitoring program are: (1) assess degree that fertilizers, as well as other nutrient sources, used on land to enhance golf course turf growth and resort landscaping leach to groundwater and subsequently discharge into nearshore waters; (2) establish delivery of these nutrients into the nearshore zone; and (3) determine if subsequent water quality has any measurable impacts on biological community structure in the nearshore marine environment. Sampling locations are shown in Figure 1.

This quarterly report is mostly an informal presentation of sampling event results with comparison to our data from three quarterly sampling events between June and December 2018, emphasizing information that may be of particular interest to MG&BC personnel.

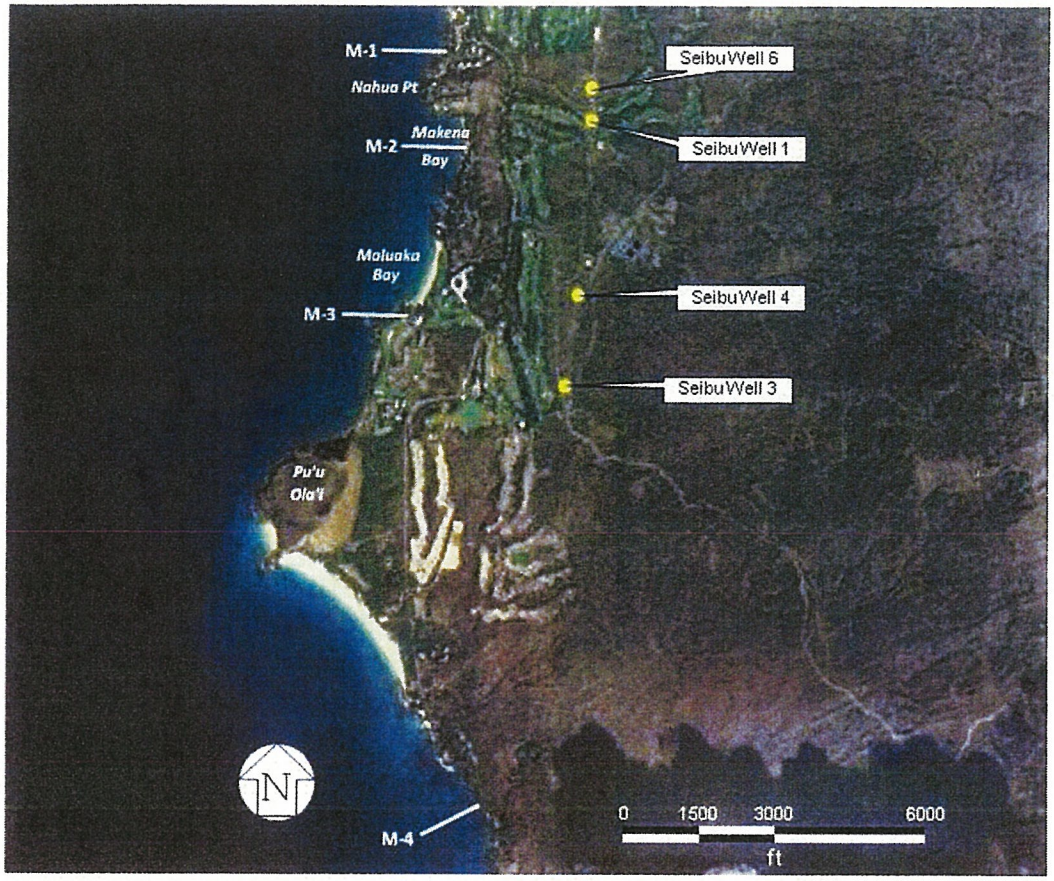

Figure 1.Location of quarterly water quality transects (M-1 through M-4) and irrigation wells.

Results

This quarterly report sampling event was conducted on March 7, 2019. Weather in the morning (0900 hours) was partly sunny, becoming mostly cloudy (~95% cloud cover) by 1300 hours. Light winds (0-5 mph) were from the NNW. Surf was 0-1 ft at all transects, except Transect 4. Surf was 2-4 ft at Transect 4 with 8 wave sets breaking just inside of Station T4-50m; whitewater persisting through to shore. Tide was falling during most of the marine waters sampling (0900-1145 hours) from a high of +1.7 ft at 0443 hours to a low of +0.12ft at 1036 hours (Mākena Station; NOAA, 2019).

Water quality data for three previous quarterly surveys made between June and December 2018 are summarized in Tables 1 and 2, and compared with results

of our March 7, 2019 sampling event. Water samples collected in March 2019 were characterized by higher than average nutrient, turbidity and chlorophyll α levels. Salinities, on the other hand, were somewhat lower than previous levels. The lower salinity levels indicate measureable intrusion of groundwater with higher nutrient levels (except ammonium) into nearshore

Table 1.Comparison of 2018 water quality means (*n = 3*) and results of March 7, 2019 monitoring event for nutrient levels

Transect	DFS† (m)	PO_4 (µgP/L)		NO_3+NO_2 (µgN/L)		NH_4 (µgN/L)		TP (µgP/L)		TN (µgN/L)	
		2018	Mar-19	2018	Mar-19	2018	Mar-19	2018	Mar-19	2018	Mar-19
M-1	2	1.4	8.0	27	185	10	25.0	11	8	157	302
	10	1.4	3.0	18	152	10	49	4	6	114	280
	50	1.4	7.0	18	157	10	35	6	20	126	309
	100	1.3	2.0	10	103	16	53	7	5	121	189
M-2	2	3.3	8.0	20	133	8	19	22	186	106	274
	10	3.5	7.0	24	107	9	18	8	11	131	253
	50	2.6	6.0	23	55	7	14	7	10	98	199
	100	1.7	7.0	26	44	12	14	7	14	113	36
M-3	2	3.7	10.0	39	145	13	11	5	15	173	218
	10	3.9	4.0	24	60	17	3	4	7	126	226
	50	2.2	6.0	20	57	15	22	13	7	117	130
	100	2.2	3.0	8	21	14	25	7	3	106	143
M-4	2	2.6	8.0	12	42	11	18	13	10	102	170
	10	4.5	8.0	12	30	17	23	7	11	117	104
	50	1.7	7.0	9	36	9	22	13	8	90	147
	100	1.8	4.0	8	21	9	34	4	7	87	161
Dry Criteria		**ns**		**≥3.5 µgN/L**		**≥2µgN/L**		**≥16µgP/L**		**≥110 µgN/L**	

† distance from shore ‡ geometric mean exceeds standard ns - no standard

waters. This intrusion, coupled with a falling tide during most of the sampling event, indicate nearshore waters were moving offshore, causing higher nutrient levels along all four transects. The higher than average turbidity and chlorophyll α levels were not associated with groundwater inputs, but more likely to disturbance of shallow bottom waters.

Table 2. Physical parameters and chlorophyll α: comparison of 2018 water quality means (*n = 3*) and resultsof March 7, 2019 monitoring event.

Transect	DFS† (m)	Salinity (ppt)		Temperature (° C)		pH		DO (% Sat.)		Turbidity (NTU)		Chl. α (µg/L)	
		2018	Mar-19	2018	Mar-19	2018	Mar-19	2018	Mar-19	2018	Mar-19	2018	Mar-19
M-1	2	34.59	32.81	27.4	23.8	8.12	8.18	105	108	2.02	1.19	0.56	1.61
	10	34.86	34.02	27.0	23.9	8.19	8.20	111	108	0.82	0.52	0.44	0.76
	50	34.82	34.01	27.0	23.8	8.16	8.17	107	101	1.15	0.43	0.34	0.58
	100	34.92	34.33	27.0	23.8	8.14	8.18	104	96	0.59	0.45	0.26	0.52
M-2	2	34.35	33.06	26.8	23.6	8.10	8.08	104	104	1.30	6.32	0.55	2.51
	10	34.42	33.31	26.7	23.9	8.17	8.18	104	98	1.14	2.71	0.28	1.80
	50	34.67	34.28	26.6	23.8	8.14	8.18	109	98	0.91	2.48	0.31	1.14
	100	35.01	34.41	26.6	23.9	8.13	8.17	103	97	0.82	1.45	0.24	0.45
M-3	2	34.55	34.62	26.6	24.2	8.09	8.17	112	110	0.83	1.01	0.42	1.74
	10	34.82	34.57	26.6	24.2	8.13	8.16	107	107	0.83	0.77	0.46	0.58
	50	35.02	34.72	26.6	24.1	8.14	8.14	103	106	0.62	0.56	0.24	0.47
	100	35.04	35.01	26.6	24.2	8.13	8.15	98	105	0.40	0.41	0.20	0.30
M-4	2	34.51	33.83	26.5	24.4	8.07	8.23	105	108	1.44	3.41	0.68	2.06
	10	34.52	34.05	26.6	24.5	8.16	8.20	106	106	1.11	2.85	0.38	1.40
	50	34.94	34.29	26.5	24.4	8.14	8.21	110	110	0.89	2.36	0.34	0.67
	100	34.86	34.39	26.6	24.3	8.12	8.21	104	107	0.78	0.94	0.31	0.37
Hawai'i Dry Criteria		+/- 10%		+/- 1C°		7.6–8.6		≥75%		≤0.20 NTU		≤0.15 µg/L	

† distance from shore ‡ geometric mean exceeds standard

Water Supply Wells - Analysis of nitrate+nitrite and ortho-phosphate dilutions between average well concentrations and stations along all four transects during the March 2019 sampling event are shown Figure 2. About 73 percent of changes in ortho-phosphate levels in nearshore waters can be attributed to changes in salinity during this sampling event (R^2 = 73.12 %), while nearly all of the changes in nitrate+nitrite levels are attributable to changes in salinity (R^2 = 98.04 %.)

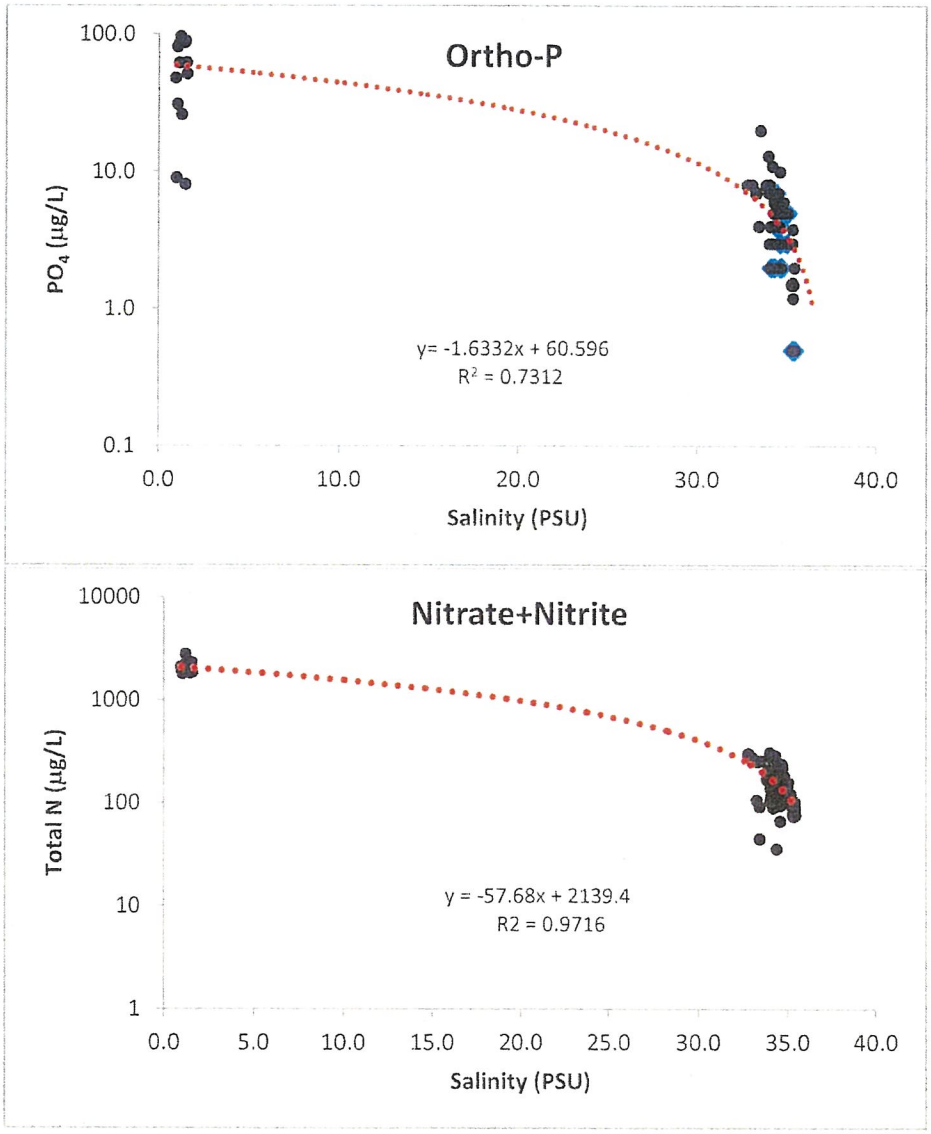

Figure 4. Relation between salinity and ortho-phosphate and nitrate+nitrite (R^2) for all *AECOS* sampling events between June 2018 and March 2019.

Potential groundwater subsidies (Table 3) for nitriate+nitrite were noted at all shore stations during the March 2019 sampling event, except at Station M4. Note: negative values indicate no subsidy. These results are expected considering that low seawater salinities, due to a falling tide and groundwater intrusion, were present at these stations on this sampling date.

Potential groundwater subsidies for ortho-phosphate (Table 4) were negative. These results are expected since fertilizers used for resort irrigation do not contain any phosphorus compounds.

Table 3. Estimated nitrate+nitrite subsidy at nearshore station (2 m) for March 2019 sampling event.

Well Transect	Mar-19 Measured NO_3+NO_2 (µgN/L)	Mar-19 Salinity (PSU)	Mar-19 Estimated NO_3+NO_2 (µgN/L)	Subsidy NO_3+NO_2 (µgN/L)
Seibu Wells	1598	1.27	---	---
M-1	185	32.81	41	144
M-2	133	33.06	40	93
M-3	145	34.62	38	107
M-4	42	33.83	39	-3

Table 3. Estimated ortho-phosphate subsidy at nearshore station (2 m) for March 2019 sampling event.

Well Transect	Mar-19 Measured PO_4 (µgP/L)	Mar-19 Salinity (PSU)	Mar-19 Calculated PO4 (µgP/L)	Surplus PO4 (µgP/L)
Seibu Wells	70	1.27	---	---
M-1	8.0	32.81	54	-46
M-2	8.0	33.06	53	-45
M-3	10.0	34.62	51	-41
M-4	8.0	33.83	52	46

We are also tracking monthly turf fertilization and irrigation rates (data provided by Jonathan Galicinao, MG&BC) together with nutrient concentrations in the irrigation supply wells (Table 5) to explore long-term trends of potential groundwater effects on Mākena nearshore waters. Estimated subsidies for all *AECOS* sampling events are shown in Table 5.

Table 5. Average irrigation per day with mean nutrient content for Seibu wells and fertilizer additions for March through August, 2018.

Month		Fertilizer	Calculated NO_3+NO_2 Subsidy			
Year	Irrigation	NO3+NO2	M-1	M-2	M-3	M-4
	Liters/day	(µgN/L)	(µgN/L)			
Mar-18	1,825,199	19,021	---	---	---	---
Apr-18	2,056,822	9,540	---	---	---	---
May-18	1,340,195	11,263	---	---	---	---
Jun-18	1,626,646	18,559	0	0	102	0
Jul-18	1,601,099	9,428	---	---	---	---
Aug-18	2,248,571	5,370	---	---	---	---
Sep-18	2,108,810	12,168	0	0	0	0
Oct-18	1,461,007	8,265	---	---	---	---
Nov-18	2,001,382	9,805	---	---	---	---
Dec-18	1,336,355	15,814	108	29	73	0
Jan-19	2,694,082	7,844	---	---	---	---
Feb-19	2,768,296	15,268	---	---	---	---
Mar-19	3,334,056	5,433	144	93	180	0

To date, sufficient data are not available to make any statistical inferences regarding potential effects of fertilizer nutrient loading on nearshore waters. Nevertheless, waters at Transect M-3 are quite near a former leg of the golf course (now maintained as a green area) which is a possible source for nitrate+nitrite subsidy in the nearshore waters at Transect 3. Transect M-1, on the other hand, is located somewhat north of the Makena golf course and may be influenced by nearby residential septic system seepage and/or other groundwater inputs.

References

National Oceanic and Atmospheric Administration (NOAA). 2018. Tide Predictions for gauge 1615202, Makena, HI. Available at URL: https://tidesandcurrents.noaa.com.

EXHIBIT B

ATC Makena Hotel, LLC
c/o Makena Golf & Beach Club

September 4, 2019

Mr. Myron Honda
State of Hawaii, Department of Health
Clean Water Branch
2827 Waimano Home Road #225
Pearl City, HI 96782

RE: State Land Use District Boundary Amendment Docket A9-721 Condition No. 9, County of Maui Zoning Ordinance No. 3613 Condition No. 19, Marine Water Quality Monitoring.

Dear Mr. Honda,

ATC Makena Holdings, LLC, in compliance with the above referenced conditions, respectfully submits the enclosed Marine Water Quality Quarterly Monitoring Report prepared by AECOS Inc. dated August 12, 2019 for the quarterly tests performed in May of 2019.

Should you have any questions, require a hardcopy, or require additional information, please do not hesitate to contact me at (808) 640-6023, or by email at kjudd@makenagbc.com.

Sincerely,

Makena Golf & Beach Club,
For ATC Makena Hotel, LLC

Kaimi Judd
Vice President of Development

Enclosures (1):
a. PDF Copy of the May 2019 Quarterly Water Quality Sampling Report

Cc:
Mark Roy, Munekiyo Hiraga

ENCLOSURES

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EXHIBIT B

Mākena Golf & Beach Club
Quarterly water quality sampling event

May 2019

August 12, 2019 | ***Final Report*** | *AECOS* No. 1535E

Allen Cattell, Ph.D.
AECOS, Inc.
45-939 Kamehameha Highway, Suite 104
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Introduction

This document is a quarterly report covering the May 2019 water quality sampling event for Mākena Golf & Beach Club (MG&BC) under a program stipulated in Condition No. 10, Declaration of Conditions pertaining to the Amendment of the District Boundary dated April 17, 1998, as required by the State Land Use Commission. County of Maui, Zoning Ordinance 3613, Condition 19 includes a similar requirement. The primary goals of the monitoring program are: (1) assess degree to which fertilizers, as well as other nutrient sources, used on land to enhance golf course turf growth and resort landscaping leach to groundwater and subsequently reach nearshore waters; (2) establish delivery of these nutrients into the nearshore zone; and (3) determine if consequent marine water quality has measurable impacts on biological community structure in the nearshore environment.

A quarterly report under the program presents results of a sampling event and makes comparison to previous data summarized from prior quarterly sampling events (four, between June 2018 and March 2019), as well as presenting longer-term supply well nutrient analyses of interest to MG&BC personnel.

Results

This quarterly report sampling event was conducted on May 23, 2019. Sampling locations are shown in Figure 1. Weather in the morning (0900

hours) was mostly sunny; ~5% cloud cover became about 60% by 1300 hours. Winds were variable throughout the day: 0–5 mph with occasional 10 mph gusts. NOAA forecast 3-4 ft waves for May 23, 2019. Surf was 1-3 ft along Transect M-1 breaking at about 160 ft from shore. Surf 1-3 ft along Transect M-2 breaking nearshore and creating a turbidity plume. Surf was 1-2 ft along Transect M-3 with a floating algal mass, possibly *Cladophora serica*, occurring from shore to about 160 ft offshore. This algal mass likely drifted south from north Kīhei waters where it is known to occur as a problem species. Surf at Transect M-4 was about 2-5 ft breaking near 300 ft from shore. The tide was falling during part of the sampling event (0900-1055 hours) from a predicted high of +0.77 ft at 0443 hours to a low of +0.12ft at 1055 hours (Mākena Station; NOAA, 2019).

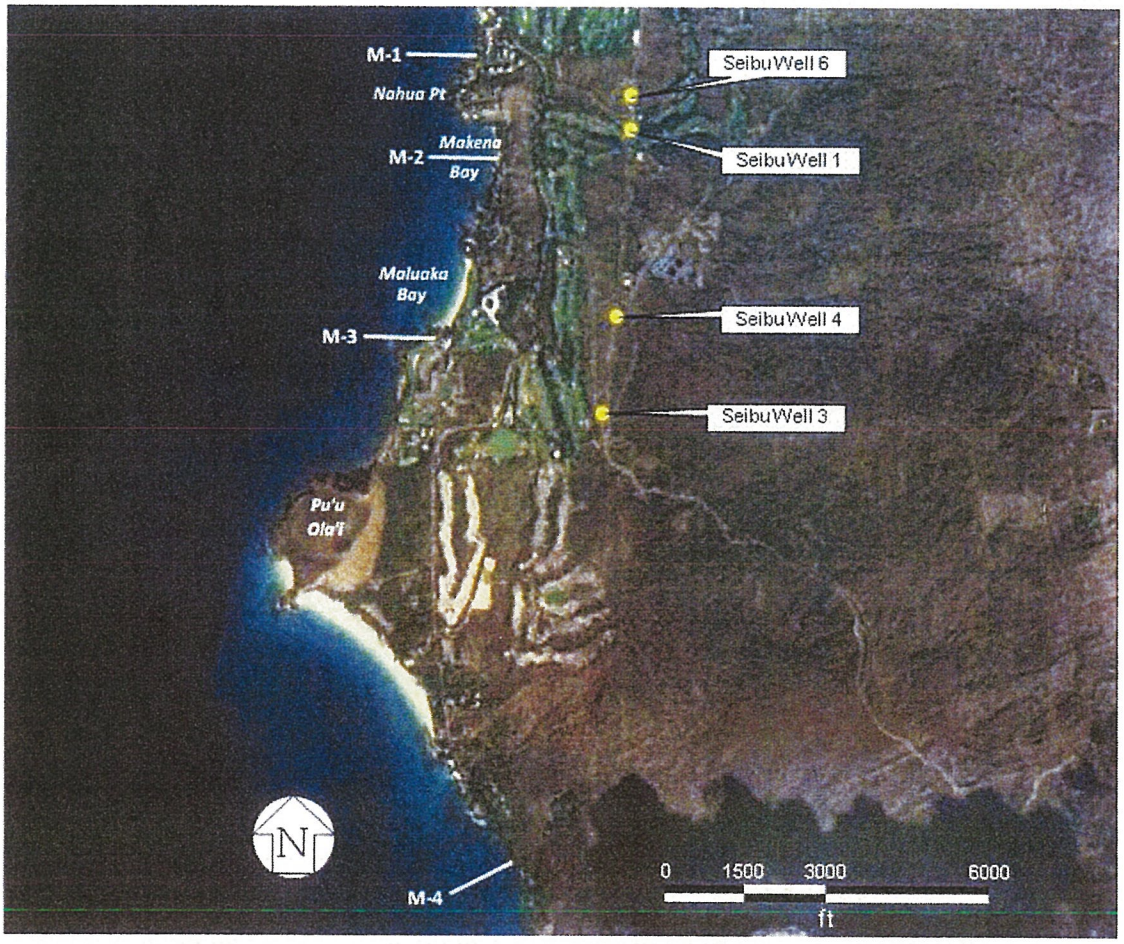

Figure 1. Location of quarterly water quality transects (M-1 through M-4) and irrigation supply wells at MG&BC.

Water quality data from four previous quarterly surveys made between June 2018 and March 2019 are summarized in Tables 1 and 2, and compared with results of our most recent sampling event. Water samples collected on May 23, 2019 were characterized by generally higher than average nutrient levels and temperatures. Salinities, on the other hand, were somewhat lower than the averages to date, indicating intrusion by groundwater. This intrusion,

Table 1.Comparison of previous water quality means ($n = 4$) and results of May 23, 2019 monitoring event for nutrient concentrations

Transect	DFS† (m)	PO_4 (µgP/L)		NO_3+NO_2 (µgN/L)		NH_4 (µgN/L)		TP (µgP/L)		TN (µgN/L)	
		Means ‡	May-19	Means ‡	May-19	Means ‡	May-19	Means ‡	May-19	Means ‡	May-19
M-1	2	2.9	8.0	47	63	15	29	10	9	191	219
	10	2.2	6.0	35	58	15	15	6	27	145	155
	50	2.7	7.0	36	68	16	30	8	9	166	202
	100	2.3	1.0	24	71	23	30	7	8	139	158
M-2	2	5.1	11.0	37	61	13	40	52	186	139	156
	10	4.7	8.0	38	48	14	40	10	19	155	160
	50	4.0	10.0	32	50	11	30	8	10	124	155
	100	3.1	8.0	32	43	15	35	10	8	127	112
M-3	2	5.0	6.0	61	104	16	41	7	9	206	259
	10	4.7	10.0	38	91	14	46	5	11	153	187
	50	3.1	4.0	33	85	18	32	9	11	127	160
	100	2.6	4.0	15	67	17	22	6	7	132	232
M-4	2	3.3	3.0	17	23	14	27	11	7	112	99
	10	5.2	5.0	17	24	23	57	8	7	107	84
	50	2.5	3.0	14	16	16	66	12	12	109	141
	100	2.4	3.0	12	23	15	27	5	7	101	99
Dry Criteria		ns		≥3.5 µgN/L		≥2µgN/L		≥16µgP/L		≥110 µgN/L	

† distance from shore ‡ geometric mean exceeds standard ns - no standard

coupled with a falling tide during most of the sampling event, indicates nearshore waters were moving offshore, producing slightly elevated nutrient levels along Transects M-1 through M-3.

Table 2. Physical parameters and chlorophyll α: comparison of previous quarterly water quality means ($n = 4$) and results of May 23, 2019 monitoring event.

Transect	DFS† (m)	Salinity (ppt)		Temperature (° C)		pH		DO (% Sat.)		Turbidity (NTU)		Chl. α (µg/L)	
		Means	May-19	Means	May-19	Means	May-19	Means	May-19	‡ Means	May-19	‡ Means	May-19
M-1	2	33.94	33.14	26.7	27.4	8.19	8.18	103	94	1.40	0.80	0.72	0.70
	10	34.24	33.59	26.4	27.0	8.21	8.20	109	104	0.79	1.15	0.51	0.74
	50	34.35	33.28	26.4	27.4	8.17	8.17	106	109	0.78	0.86	0.40	0.53
	100	34.52	33.51	26.4	27.5	8.15	8.18	103	106	0.57	0.72	0.33	0.36
M-2	2	34.07	33.21	26.5	27.2	8.15	8.08	99	98	2.53	3.40	0.63	0.48
	10	34.12	33.40	26.6	27.5	8.15	8.18	99	100	1.82	2.31	0.42	0.42
	50	34.29	33.16	26.5	27.5	8.18	8.18	99	102	1.26	2.14	0.34	0.30
	100	34.49	33.53	26.5	27.7	8.17	8.17	99	107	0.93	1.62	0.24	0.24
M-3	2	34.26	33.01	26.4	27.8	8.24	8.17	113	120	0.89	0.99	0.57	0.48
	10	34.46	33.24	26.3	27.7	8.22	8.16	110	121	0.86	1.08	0.54	0.79
	50	34.64	33.42	26.3	27.6	8.18	8.14	105	111	0.64	0.79	0.29	0.31
	100	34.80	33.85	26.4	27.7	8.18	8.15	101	107	0.49	1.10	0.23	0.27
M-4	2	34.19	33.55	26.1	26.6	8.12	8.23	103	91	1.72	1.47	0.79	0.47
	10	34.24	33.57	26.2	26.6	8.13	8.20	105	99	1.41	1.41	0.47	0.30
	50	34.63	34.00	26.2	26.9	8.13	8.21	108	99	1.02	0.66	0.37	0.29
	100	34.53	33.69	26.2	27.0	8.12	8.21	104	101	0.83	0.89	0.29	0.27
Hawai'i Dry Criteria		+/- 10%		+/- 1C°		7.6-8.6		≥75%		≤0.20 NTU		≤0.15 µg/L	

† distance from shore ‡ geometric mean exceeds standard

Assessment

Potential groundwater subsidies calculated for nitrate+nitrite at the "2 m" stations on transects M1 through M3 are provided in Table 3. These results are expected considering that below average seawater salinities were present at these stations for the May 2019 sampling event. Potential groundwater subsidies for ortho-phosphate were negative (essentially none; Table 4), also expected since fertilizers used for resort landscaping do not contain inorganic phosphorus compounds.

Table 3. Estimated nitrate+nitrite subsidy at nearshore station (2 m) for May 2019 sampling event.

Well Transect	Measured NO_3+NO_2 (µgN/L)	Salinity (PSU)	Estimated NO_3+NO_2 (µgN/L)	Subsidy NO_3+NO_2 (µgN/L)
Seibu Wells	1490	1.37	---	---
M-1	63	33.14	38	25
M-2	61	33.21	38	23
M-3	104	33.01	39	65
M-4	23	33.55	38	0

Table 4. Estimated ortho-phosphate subsidy at nearshore station (2 m) for May 2019 sampling event.

Well Transect	Measured PO_4 (µgP/L)	Salinity (PSU)	Calculated PO4 (µgP/L)	Surplus PO4 (µgP/L)
Seibu Wells	70	1.37	---	---
M-1	8.0	33.14	54	0
M-2	8.0	33.21	53	0
M-3	10.0	33.01	51	0
M-4	8.0	33.55	52	0

We are also tracking monthly turf fertilization and irrigation rates (data provided by Jonathan Galicinao, MG&BC) together with nutrient concentrations in the irrigation supply wells to better understand long-term groundwater impacts on Mākena nearshore waters. Estimated subsidies for nitrate-nitrite in recent sampling events are shown in Table 5.

Table 5. Average irrigation per day with mean nutrient content for Seibu wells and fertilizer subsidies for March 2018 through May 2019.

Month		Fertilizer	Calculated NO_3+NO_2 Subsidy			
Year	Irrigation	NO3+NO2	M-1	M-2	M-3	M-4
	Liters/day	(µgN/L)	(µgN/L)			
2018						
Mar-18	1,825,199	19,021	---	---	---	---
Apr-18	2,056,822	9,540	---	---	---	---
May-18	1,340,195	11,263	---	---	---	---
Jun-18	1,626,646	18,559	0	0	102	0
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Nov-18	2,001,382	9,805	---	---	---	---
Dec-18	1,336,355	15,814	108	29	73	0
2019						
Jan-19	2,694,082	7,844	---	---	---	---
Feb-19	2,768,296	15,268	---	---	---	---
Mar-19	3,334,056	5,433	144	93	180	0
Apr-19	2,528,584	5,373	---	---	---	---
May-19	2,614,132	5,197	25	23	65	0

--- =no nearshore samples collected.

To date, insufficient data are available to make statistical inferences regarding potential effects of fertilizer nutrient loading on nearshore waters. Nevertheless, waters at Transect M-3 are quite near a former leg of the golf course (now maintained as a green area) which is a possible source for nitrate+nitrite subsidy in the nearshore waters there. Transect M-1, on the other hand, is located somewhat north of the Mākena Golf Course and may be influenced by area residential septic system seepage and/or other groundwater inputs.

Results of regression and Student's t-test analyses of long-term nitrate+nitrite concentrations in MG&BC irrigation wells are shown graphically in Figure 2. No significant change has occurred over this 20-year period at Well 1 or Well 4 as indicated by the more-or-less flat best-fit lines and no significant differences at the 0.05 probability (*P*) level of the two sets of data points On the other hand, the best-fit lines for Well 6 and Well 3 slope downwards over this same time period and the difference between the older and newer data sets is significant (*P* = 0.01).

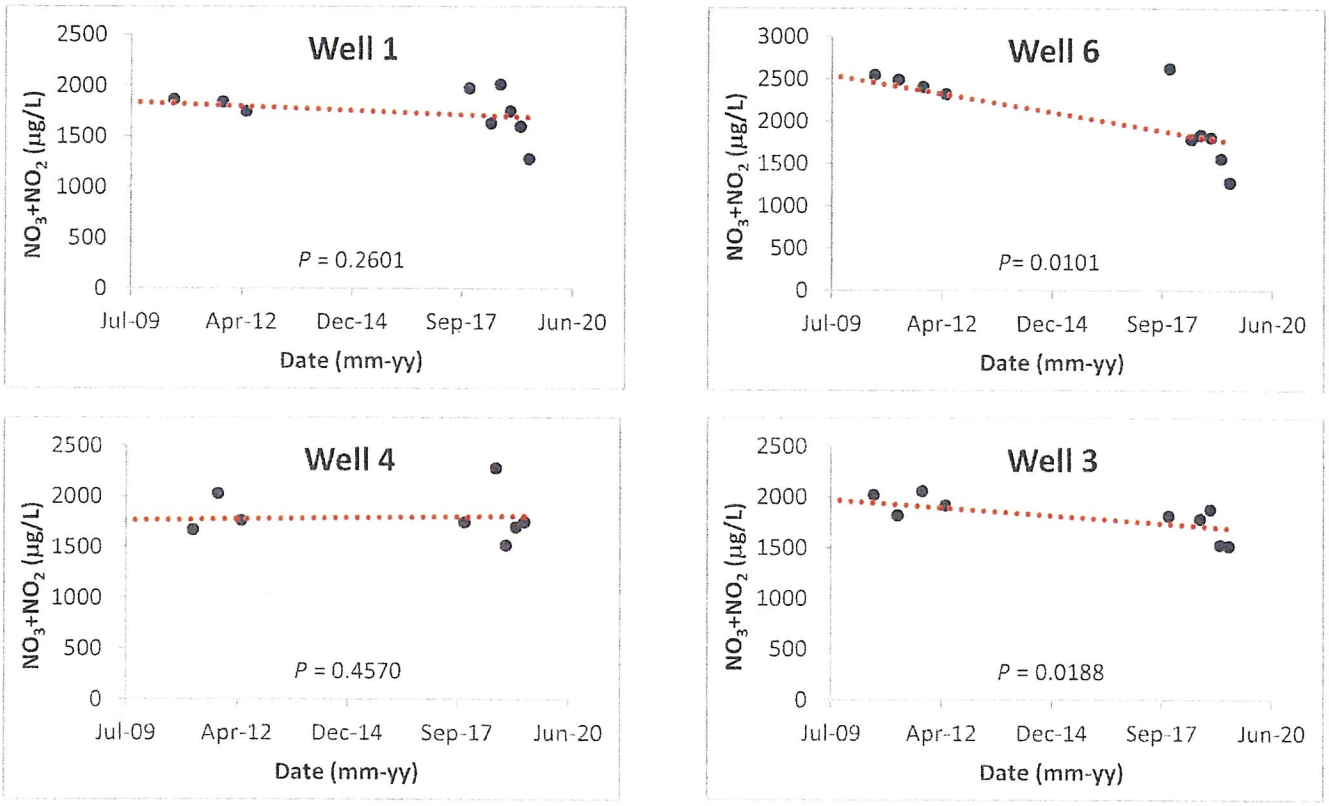

Figure 2. Nitrate+nitrite concentration in four irrigation wells measured between 2009 and 2019 (after MRCI, 2017; *AECOS*, 2019)

Conclusions

The essential plant nutrients (nitrogen and phosphorus) that we monitor each quarter determine to a large extent not only water quality in these coastal waters, but the nature of the benthic and pelagic biologic communities as well.

These nutrients are primarily supplied to Mākena coastal waters from two sources: (1) dissolved in groundwater seeping out near the shore; and (2) long-shore transport from other nearby coastal waters. Surface water runoff is a third potential source, but occurs only rarely along this coast. Excess nutrients and turbidity in the coastal waters of northern Kīhei and Ma'alaea Bay generally have resulted in degradation of coral reef communities and increases in episodic invasive algae.

For this quarterly report, we have reviewed the historic groundwater data available for changes in the most important nutrient for these coastal waters—nitrate+nitrite—as measured in four MG&BC irrigation wells between 2009 and 2019 (Fig. 6). This information may provide a useful baseline for comparison with nearshore nitrate+nitrite concentrations to evaluate any effects due to land management activities. It is important to note that groundwater in these wells represent conditions upslope of the golf course and other landscaping areas (see Fig. 1) and therefore, are not influenced by irrigation practices on resort property. Any residual irrigation water moving to groundwater and eventually entering the nearshore environment will be *makai* (downslope) of these supply wells and reflect groundwater nutrient concentrations enhanced or not by fertilizers.

References

AECOS Inc. 2019. Mākena Golf & Beach Club, quarterly water quality sampling event, March 2019. Prepared for Makena Golf & Beach Club. *AECOS*, 1535D: 8 pp.

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