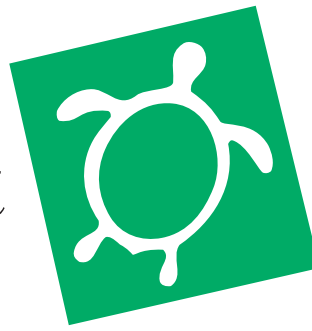


# Environment



# Hawai‘i

a monthly newsletter

## *Sugar's Bitter Aftertaste*

For decades, the extensive contamination of an O‘ahu Sugar chemical mixing site near the banks of Pearl Harbor has been well documented. But efforts to get the company or its parent to clean it up have been stymied by disputes over liability as well as a bankruptcy court proceeding that has only recently concluded.

With the filing in federal court of a proposed settlement, the various parties involved – a host of government agencies and private businesses – may finally have taken the first tentative steps on the road to remediation.

That's good, as far as it goes. But the many years of delay have resulted in potential – and lethal – exposure to who knows how many individuals who have used the abandoned area for recreation or even as a hang-out for the homeless. The nature and extent of the contamination are extraordinary, often thousands of times greater than levels of exposure established as acceptable for any type of human activity.

Any and all involved in the foot-dragging that led to this absolutely disgraceful delay should hang their heads in shame.

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## Feds Close In On \$7.5M In Compensation For Contamination at Waipi‘o Peninsula

On April 19, the U.S. Navy, Environmental Protection Agency, National Oceanic and Atmospheric Administration, and Department of the Interior proposed settling a lawsuit they filed the same day against O‘ahu Sugar Company, LLC, and its successor, Ka‘anapali Land, LLC, over high levels of chemical contamination on at least 3.5 acres along the coast of the Waipi‘o Peninsula. The site, on the West Loch of Pearl Harbor, is where the former sugarcane company mixed and loaded pesticides, fertilizers, and herbicides for decades.

In a proposed consent decree signed by all parties to the case, the federal government would receive \$5 million for the EPA's and Navy's response costs and \$2.5 million for natural resource damages. The money is expected to come from the companies' insurance proceeds.

Upon payment, the EPA would with-

draw its 2005 and 2009 orders requiring the companies to do a site assessment and remediation.

In addition to providing the funds, the companies would withdraw their Freedom of Information Act (FOIA) requests seeking information clarifying their liability. (An attorney for O‘ahu Sugar long maintained that the Navy, O‘ahu Sugar's lessor, held some liability for the contamination. The Navy argued that because of O‘ahu Sugar's exclusive use of the area for so long, it had the primary responsibility to at least take interim measures to address any imminent dangers the site posed. In 2008, attorneys for Ka‘anapali Land sent letters to the Navy's Office of the General Counsel expressing their disappointment with the Navy's response to their FOIA queries regarding this site and others in the Pearl Harbor area.)

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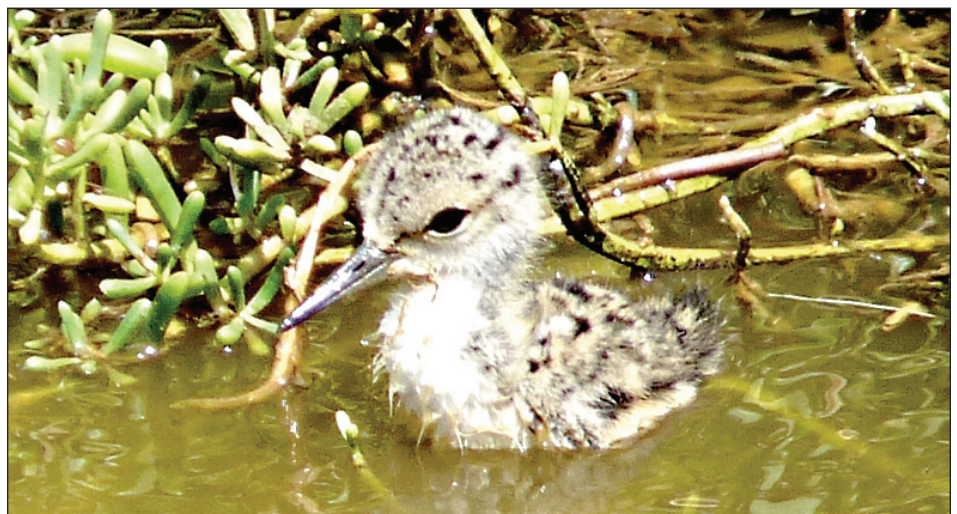
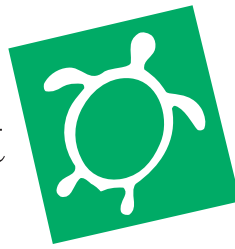


PHOTO: LAURA BEAUREGARD/USFWS

A Hawaiian stilt (ae‘o) chick at Pearl Harbor. The stilts are federally listed as endangered and use Walker Bay in the harbor's West Loch, which receives contaminated sediment from O‘ahu Sugar's former pesticide mixing site.

# Environment

Volume 31, No. 11



# Hawai'i

May 2021

## NEW AND NOTEWORTHY

**Sierra Club Loss:** Last month, 1st Circuit Judge Jeffrey Crabtree ruled against the Sierra Club's Hawai'i Chapter and in support of the Board of Land and Natural Resources' decisions in 2018 and 2019 to grant revocable permits for the continued diversion of East Maui stream water for domestic and agricultural uses in Central and Upcountry Maui.

The group had argued that the board's decisions failed to adequately protect 13 streams that were not included in a 2018 Commission on Water Resource Management decision on interim instream flow standards for about two dozen other diverted streams.

The Sierra Club had also argued that the board allowed Mahi Pono, which plans to expand diversified agriculture on Alexander & Baldwin's former sugarcane lands, to divert much more water than it actually needs.

Judge Crabtree, however, found the limits the Land Board set on total diversions to be reasonable, even though they were much higher than what Mahi Pono actually used.

"[T]his fact does not mean it was improper for the BLNR to rely on Mahi Pono's initial estimates in setting the 45 MGD limit. ... Mahi Pono was essentially starting from scratch, during a historic change, in a new market where the actual use of water depends on variables that Mahi Pono has little control over. Realistically, the court concludes that Mahi Pono deserves some time and mileage to gain experience and figure things out," he wrote.

The judge also noted that barring diversions from the 13 streams "could mean A&B would be forced to reopen diversions in the Ke'anae and Nahiku areas that were previously closed [in accordance with the CWRM decision]. On the other hand, continuing to allow the 13 streams to be diverted did not necessarily mean that native species would not be able to migrate in those streams if there was sufficient flow from freshets and storm events. This is a classic balancing and the court is persuaded and finds and concludes that applying the applicable law, it was not unreasonable for the BLNR to balance these considerations as it did."

**Rat-Free Lehua:** On April 21, the Department of Land and Natural Resources announced that Lehua Island off Kaua'i is free of invasive rats after an eradication effort that started in 2017.



PHOTO: DLNR

Red-footed boobies at Lehua Island.

The effort, which involved the dropping of pellets of the rodenticide diphacinone via helicopter, was the state's second attempt at ridding the island of rats.

"After extensive on-island monitoring, we're 99.99% certain there are no more rats on Lehua, which builds on the successful removal of invasive herbivorous rabbits, and secures a future for Hawai'i's wildlife and ecosystems," said Sheri S. Mann, the Kaua'i branch manager for the DLNR Division of Forestry and Wildlife (DOFAW) in a press release.

After the initial rodenticide application in 2017, a small number of rats persisted on the island. After additional baiting in small areas and trapping, however, rats have not been seen on the island for more than two years, according to Dr. Patty Baiao of the non-profit Island Conservation, which was the project's technical advisor.

The island supports one of the largest and most diverse seabird colonies in the Main Hawaiian Islands, including 17 species, the release states.

"During prime summer nesting season hundreds of thousands of birds may be on Lehua at any given time. In the winter, Red-Footed Boobies and Laysan Albatross are among the dominant birds on the island. The partners hope that Lehua might host the endangered Newell's Shearwater, which has been found attempting to nest on the island but was unsuccessful due to rat predation," it continues.

The eradication was a joint effort of the DLNR, Island Conservation, state Department of Agriculture, U.S. Fish and Wildlife Service, U.S. Department of Agriculture, U.S. Coast Guard, and the owners of Ni'ihau.

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### Quote of the Month

*"[Y]ou may be one of those who came to visit and forgot to go home. Thus, being the biggest contributor to the problems you are noting."*

*— Ron Agor, consultant for the proposed HoKua development on Kaua'i*



# LUC Considers Request to Allow 769-Lot Subdivision Near Kapa'a

The state Land Use Commission is holding hearings on a boundary amendment petition to place about 96 acres of former cane land near Kapa'a, Kaua'i, into the state Urban District to allow for one of the largest – if not *the* largest – new housing developments yet proposed for the island.

The landowner, HG Kaua'i Joint Venture, LLC (HGKJV), is proposing that 69 of those acres be developed into lots for 86 single-family homes, about 13 acres for 683 multi-family units, and about 13 acres for roadways, parks, and other open space. About 54 acres of the rest of the parcel is to be divided into 16 agriculture lots, in Phase I of the HoKua Place development. A solar farm producing about 1.18 megawatts of power occupies about four acres of the Agricultural land. Finally, about seven acres of the property that now lies under the Kapa'a Bypass road is to be transferred to the state.

The boundary amendment petition was first brought to the LUC in November 2011 by then-owner Three Stooges, LLC, which proposed calling the development Kapa'a Highlands. In 2013, HGKJV obtained the deed through foreclosure and subsequently was granted status by the LUC as Three Stooges' successor in the boundary amendment petition. HGKJV also changed the name of the project once more – to the oddly orthographic HoKua Place. (When the company's CEO, Jake Bracken, was questioned about the name, Bracken admitted he had no idea what it meant nor did he know if it had any connection to the place at all. "One of our original consultants suggested it was meaningful to the area," he said. He couldn't remember the consultant's name.)

In May 2015, former director of the state Department of Land and Natural Resources Peter Young prepared the first draft environmental impact statement (DEIS). But when the final EIS was filed in March 2018, the LUC staff "identified several issues with the filing and the petitioner voluntarily elected to withdraw the document, make corrections, do additional work, and resubmit in the future," according to the LUC's website.

In November 2018, a second DEIS prepared by Ron Agor of Agor Jehn Architects explained that the first DEIS was shelved, "due to the passage of time and intervening events," including an updated traffic impact analysis, an invertebrate survey, and an updated county General Plan." The second final EIS was published in November 2019, and a month later, the LUC accepted it as complete, albeit with many commissioners expressing reservations about the quality of the information in the document – and commissioner Gary Okuda voting to reject it.

In August 2020, HGKJV submitted an amended petition, which launched



PHOTO: TRAVIS THURSTON/WIKIPEDIA

The proposed HoKua development would sit on a plateau above Kapa'a, Kaua'i's largest town, with a population of about 11,000. The project would add 86 single-family homes and 683 multi-family units.

the latest chapter in efforts to put the subject acreage into the Urban land use district.

After preliminary hearings to take testimony and approve as an intervenor Liko Martin, the only party to formally file for intervenor status, substantive hearings on the petition were finally launched.



## Community Sentiment

On March 10, the LUC received testimony from more than 150 individuals, nearly all of whom were opposed to the project. Many of them had already made known their feelings about the project in comments on the second draft EIS.

Traffic was a paramount concern for many commenting on the draft EIS. In replying to their letters and emails, Agor

was often breezily dismissive.

"We can't use traffic, growth, infrastructure needing work, as an excuse to deny these families from 'having.' People can enjoy life on Kaua'i if they only can relax. Relax in traffic. It's an island where are you going?" he told one woman.

In response to another commenter who noted that "traffic is out of control!" Agor suggested that sitting in traffic "is a noble cause if 231 families have the opportunity to have a very affordable home." (The developer has said that, to satisfy Kaua'i County requirements, 231 of the multi-family units will be sold at prices considered affordable to families earning from 80 to 140 percent of the area median income, or priced between \$175,000 and \$275,000 at present.)

In another reply, Agor told the commenter that "you may be one of those who came to visit and forgot to go home. Thus, being the biggest contributor to the problems you are noting."

To a teacher who objected not only to traffic that would be created by the proposed development, but also the outdated wastewater treatment facility, Agor replied that she was "selfish and unreasonable." "You can certainly compromise with the those [sic] who want this project by staying home in peak traffic hours," he said.

In numerous replies, Agor praised the developer who, he said, had first planned to subdivide the entire parcel into small farm lots. But, being pressed by a former county planning director to build affordable houses, Agor said, the developer "walked away from the big bucks" and proposed what became known as HoKua Place instead. In response to comments from Rayne Regush, representing the Sierra Club Kaua'i Group, Agor identified the planning director as Ian Costa, who resigned in 2010. Given that time frame, the then-developer most likely would have been represented by Greg Allen, who now has an equity position in HGKJV.

Agor repeatedly referred to the 2018 update of the Kaua'i General Plan – "forged by the people of Kaua'i" – which identified the HoKua Place area as "neighborhood general." The designation is a new one, intended to apply to areas within "walksheds" (10-minute walks) of neighborhood centers, such as

*Continued on next page*

*HoKua from Page 3*

Kapa'a town. Agor does not mention, however, that the people of Kaua'i who engaged in the planning process were strongly divided over the inclusion of HoKua Place as an area designated for growth. "Community opinion remains divided," the General Plan narrative states, "with strong concerns about the perceived impacts of the proposed development on traffic."

As for walkability, the proposed development is on a plateau above Kapa'a town proper. The town may be a 10-minute walk from the planned intersections leading into the development, but that walk is along narrow roads with steep grades. So far, HGKJV has not committed to installing off-site improvements, such as sidewalks or bike lanes, that would make the trip safe for bicyclists or pedestrians.



## Complicated Ownership

Efforts to subdivide the parcel date back at least to the late 1990s, when the then-owner, Moishe Silagi, a California developer, proposed a subdivision called Kaua'i Highlands. Silagi then sold the land to Kapa'a 160, LLC, which proposed a large-lot development to be called Kulana Kai. Kapa'a 160's principals, William Hancock and James Lull, held a 70 percent interest in the land, while The Allen Family, LLC acquired 20 percent and Moloa'a Bay Ventures, LLC, acquired 10 percent.

Kapa'a 160 then sold a share of their interest to The Three Stooges – of which Lull was himself a member, along with Greg Allen Sr. and Greg Allen Jr. (Greg Allen Jr. later described all of the Three Stooges as family members.) Kulana Kai was renamed Kapa'a Highlands.

In early 2001, Kapa'a 160 had given a mortgage to Kaua'i lawyer Kurt Bosshard. (Bosshard is also the principal of the firm that owns the solar farm on the part of the HoKua lot that is to remain in Agriculture.) After a series of loan modifications, Bosshard ended up being owed approximately \$4 million. In early July 2012, he filed a foreclosure action against the landowners, which ultimately led to the property being sold at auction.

But Bosshard was not the only mortgage holder. In 2002, the Allen Family had filed at the Bureau of Conveyances a subordinate mortgage given it by Kapa'a 160 and Moloa'a Bay Ventures. The mortgage noted that the Allen Family had contributed \$1.51 million in return for its interest in the property, and that it was now placing a second mortgage on the property "to ensure that, in the event Kapa'a 160 defaults on the note," the company would have a lien on the property.

After the judgment in favor of Bosshard, the Allen Family asked the court to allow the holder of a second mortgage to file a credit bid when the property was auctioned. On March 6, 2013, the same day as the auction, the Allen Family assigned its mortgage to HG Kaua'i Joint Venture, thus allowing that company to submit a credit bid as the second mortgage holder. Placing the bid was Greg Allen Jr., who identified himself now as a member of HGKJV.

In testimony to the LUC, Jake Bracken, CEO of the company, said the actual price paid for the land was \$10.6 million; the company had acquired a "second position note," he said, which was used as a credit bid after Bosshard's claim had been satisfied.

When asked to identify the members of the LLC, Bracken said the ultimate owner is Robert Roche and his family. HGJKV "is owned mostly by an entity named HG Kaua'i, which is his, the Roche family, interest. And a little by an entity Steam Investments, where the Allen family has their interest," Bracken said. He added that he and another individual had "contingent interests" in the neighborhood of one or two percent.

HG Kaua'i Joint Venture is one of hundreds – if not thousands – of business entities across the globe whose ownership traces back to Roche. These involve not just real estate holdings or housing developments but also import-export businesses, media distribution, hotels, and much more.

On May 19, 2014, HGKJV gave a mortgage to HG Kaua'i, registered in Nevada, in return for a \$500,000 loan, at 10 percent annual interest. Both companies share the same address, in Hickory Hills, Illinois; the same email contact; and the same phone number. Signing for HGKJV was Theresa Roche (Robert

Roche's sister). When HG Kaua'i agreed to have that mortgage subordinated to a much larger mortgage that HGKJV gave to Goldman Sachs in 2020, Theresa Roche signed on behalf of HG Kaua'i as well.

That Goldman Sachs mortgage secures a loan agreement that provides funding of up to \$5 million – not to HGKJV alone, but also to an entity called Hurricane Hills Ranch Estates, LLC, registered in Utah. Once more, Theresa Roche signed the loan agreement as representative of Hurricane Hills as well as HGKJV.

According to records of the City of Hurricane, Utah, Hurricane Hills Ranch Estates has submitted a preliminary plat plan for a 216-lot single-family residential development to be known as the Estates at Sand Hollow. The city council gave conditional approval to the plan in February.

In a filing last November made in support of the company's financial ability to carry out the project, HGKJV listed the Goldman Sachs mortgage as well as a line of credit of \$15 million issued by Arboretum Holdings Corporation of Nevada (president, Robert Roche). The \$500,000 mortgage held by HG Kaua'i was not mentioned.

While the EIS and other filings are silent as to the cost of the project, engineering consultant William Bow provided in his testimony a back-of-the-envelope estimate of the cost of backbone infrastructure (roads, utility lines, and the like). His estimate for infrastructure alone was about \$82 million, while the total project costs he placed at more than \$300 million.

A longstanding concern of the LUC has been the use of the redistricting process as a means of adding value to land whose owners then flip the property, without developing it in accordance with the conditions of the redistricting.

Commissioner Gary Okuda asked Bracken about this: "Since Mr. Roche seems to be the person with the money controlling these entities, is he willing to personally guarantee all the representations and promises you are making?"

Bracken was noncommittal: "I need to address this with him. We haven't discussed that."

"What assurances do we have that

*Continued on next page*

*HoKua from Page 4*

these representations and promises are going to be made?" Okuda asked. Would, for example, HGKJV be willing to agree to the condition that the property will not be sold until all representations have been completed?

Bracken replied, "The concern I have is, putting my accounting hat on, often we will make a change in ownership internally, moving—capital gains versus ordinary income rule. I hesitate to answer right now, since that might conflict with future loan covenants or something else. ... Obviously, we've put millions into this property right now. I'm just a little hesitant that we might be in conflict with another loan contract, inadvertently. But we're willing to have some sort of discussion about how we could make these assurances."

In recent hearings on several LUC dockets, commissioner Dawn Chang has brought up the suggestion that the LUC could require the posting of a performance bond to ensure basic commitments are developed. When she asked Bracken if he would be willing to put up a bond, he hedged. "Before I make a commitment here today I would like to understand it better."

Chang then asked that following talks with counsel, "you come back and give us what you would suggest, ... what would be an appropriate performance bond."



## Climate Change

Under recently adopted rules, the Land Use Commission now requires petitioners to assess climate-change related threats to the proposed development as well as how to mitigate them. The analysis has to look at such things as the impact of sea-level rise, effects of climate change on infrastructure (including roads, sewer, and water lines), and a description of the overall carbon footprint of the project.

The HoKua Place petition is the first to come before the LUC under the new rules. To conduct the required assessments, HGKJV enlisted the help of G70 (the Honolulu firm formerly known as Group 70). The task fell to G70 employee Cody Winchester.

Winchester had conducted his assess-

ment by making certain assumptions about where future residents of the development would work and shop, then plugging them into the California Emissions Estimator Model (CalEEMod). When specific data were not available, default numbers provided in the model were plugged in.

Bottom line, as estimated by Winchester: over the 30-year expected life of the project, the annualized carbon-dioxide equivalent emissions attributable to HoKua Place are between 7,116 tons (if mitigated) and 7,928 tons (unmitigated). Factoring in the loss of carbon from vegetation that was removed and the addition of new plantings (300 trees, estimated), total annualized emissions came to 7,380 (using the mitigated carbon emission estimate). With a population of 2,408 individuals, Winchester put the annual per-capita emissions of CO<sub>2</sub> equivalent gases at 3.06 metric tons. He concluded that the proposed emissions would not interfere with the state's goal of reducing emissions below 1990 levels.

Okuda had a series of questions about the assumptions Winchester had made.

"Did you ever see any material prepared by the developer or anyone else that set forth or documented where the intended residents of this development would go for work?" he asked.

"I believe the intention of building the community where it is is because of its location and a town center, Kapa'a," Winchester replied. "And recognizing that Kapa'a is a more urbanized area, especially for Kaua'i, with employment opportunities, with schools, a hospital, that the intention was for folks to be using those amenities in Kapa'a and making most of their trips to Kapa'a town."

Did Winchester ever see anything in the record about where HoKua Place residents would work, Okuda asked.

"I'm not aware of a document like that," Winchester answered.

"Did you see any document or study or other materials in the record which documented where and what type of retail people who live in the develop-



The Kapa'a crawl: traffic heading toward Lihue approaching the roundabout at the intersection of Kapa'a Bypass and Olohena Road. The proposed HoKua Place property is on the right of the photo just beyond the roundabout.

ment would frequent or go to? My understanding is there's no Costco in Kapa'a town and other similar big-box locations are elsewhere, and Wilcox Hospital is not in Kapa'a either. Is there anything in the record that sets forth ... or provides data as far as what retail or other non-employment destinations the people who are expected to live in the development are going to?"

Winchester acknowledged he was not aware of any such document.

Had Winchester seen any evidence about actual employment opportunities in Kapa'a and how much they pay? Did he ever see anything in the record to support the idea that the residents would in fact do most of their retail shopping in Kapa'a and not Lihue?

No, Winchester said, he had not. "I can only speak to what the intentions of the project is, in determining its location," he said.

Under further questioning from Okuda, Winchester admitted he had not read the full environmental impact statement and had no opinion as to the adequacy of a traffic report. "Sorry, I don't have an opinion," he said. "I was just asked to do a very narrow task. Making judgments about the traffic study was outside what I was scoped to do."

Winchester's assessment assumed that the development would include multi-modal (or "multi-model," as the report puts it) transportation options—allowing residents to walk or bicycle when running errands, putting in bus stops, and the like.

*Continued on next page*



*HoKua from Page 5*

Commissioner Nancy Cabral asked him whether he thought it would be possible to walk or bicycle to Kapa'a.

Winchester said he thought so, though later he admitted he had not visited the area.

Commissioner Dan Giovanni, representing Kaua'i, pressed him on his assumptions about bicycling and walking options. "You said it would be easy to connect to Kapa'a town," Giovanni reminded Winchester. "What is an easy connection?"

"I suppose it would be easy for the user, the desired result, so users would easily be able to bicycle or walk from the development to town and back. Not necessarily easy to develop."

"What's an easy connection across the Bypass Road?" Giovanni inquired.

"I know complete streets is something that was – complete street practices would be implemented as part of the project. That's something the EIS states. I'm not a traffic engineer. It's outside my expertise," Winchester responded.

Giovanni: "My takeaway is you don't know how easy or un-easy it would be to get to town from HoKua Place."

Winchester: "We assume that a seamless bike lane going from Kapa'a town would be implemented and it would be easy for the users. That's the assumption made in the model."

Giovanni: "By seamless, do you mean it wouldn't stop traffic on the Bypass Road?"

"I don't know," Winchester said. "Sorry."

Does this project increase or decrease the options of coastal retreat for Kapa'a?

commission chair Jonathan Likeke Scheuer asked.

"Having homes available in the mauka area ... would allow residents in that zone to retreat upwards if desired," Winchester said.

Sea-level rise studies, however, show significant potential inundation not just for residences but for major infrastructure and the commercial core of Kapa'a, Scheuer said. "So will the use of this land primarily for residential development increase or decrease the possibility for coastal retreat options for the county?"

"I think designing this area outside the area of sea level rise is responsible," Winchester replied. "And it is an encouraged project, as far as not building it in a vulnerable area."



## Traffic

Jammed-up traffic in east Kaua'i is so notoriously bad it has earned its own name: the Kapa'a crawl. The main road, Kuhio Highway, is coned for most of the morning to facilitate travel in the southerly direction, toward Lihue.

The Traffic Impact Analysis Report – TIAR – included in the final environmental impact statement was based on traffic surveys done in March 2017. The author, Randall Okaneku of The Traffic Management Consultant, noted that in the four years between the first traffic study, done for the first EIS in the 2012-2013 time frame, and his study, traffic had increased by 12 percent in the morning peak hour and by 22 percent in the afternoon peak hour.

When Okaneku presented his study to the LUC in April, Chris Donohoe, representing the Kaua'i Planning Department, noted that the traffic might have increased even more in the four years since Okaneku's report.

In addition, of the seven traffic improvement measures that Okaneku's report said would be undertaken even without HoKua Place being developed, four of those should have been excluded, Donohoe said, "because they're either not achievable or will have no impact on traffic." One of those assumed improvements was the elimination of parking on Kuhio Highway as it passes through Kapa'a. This "would have severe economic consequences on commercial activity and have a severe impact on pedestrians," he said.

As proposed by HGKJV, the main road through the development – Road A – will join up with Olohena Road on the north, just mauka of the Kapa'a Middle School, by means of a T-intersection, with a stop sign on Road A. On the south, Road A would intersect with the Kapa'a Bypass by means of a roundabout.

While neither the county Planning Department nor the state Office of Planning, which is another party in the LUC hearings, has objected to the redistricting, both cite the need for an updated traffic analysis as a condition of LUC approval. The Office of Planning recommends as conditions of approval a number of offsite traffic improvements, including, among other things, the construction of a roundabout at the intersection of Kapa'a Bypass at Road A; the widening of the roundabout as the junction of the bypass and Olohena Road; and the widening the Bypass Road north of Olohena to accommodate traffic in both directions. Only the construction of the T-intersection at Olohena and the new roundabout at the intersection of Road A and the Kapa'a Bypass is anticipated in the backbone infrastructure budget prepared by Bow for HGKJV.



## Wetlands

Throughout the series of draft environmental impact statements, beginning in 2014, and up to the final

*Continued on next page*



The view from Olohena Road toward the HoKua Place parcel.

*HoKua from Page 6*

EIS in 2019, no mention is made of any wetlands on the HGKJV property that would require protection from future development.

However, as the Office of Planning noted in its position statement, in 2018, the U.S. Fish and Wildlife Service's National Wetlands Inventory identified 3.3 acres of wetlands on the property subject to the boundary amendment petition and another 5 acres on the part of the parcel that is intended to remain in the Agricultural land use district.

Bow, the consulting engineer for HGKJV, testified that he had been asked to prepare an analysis of water and wastewater issues after the final EIS was published, and that he had concerns about some of the analyses included in that document—specifically, the placement of a detention basin in the wetland area, the handling of storm water and the analysis of the contribution of stormwater attributable to the development.

"I didn't like that idea, so I redesigned it and pushed it [the basin] within our site," he said.

Commissioner Okuda asked whether the failure to include mention of wetlands in the EIS as well as Bow's updated drainage analysis might require publication of a supplemental EIS. The drainage report in the final EIS, Okuda noted, was dated July 2011. "Your drainage analysis was prepared in February 2021, which is almost 10 years after the drainage report made a part of the final EIS, correct?" Okuda asked Bow.

Bow agreed.

Okuda: "Was your drainage analysis at any time ever submitted as a supplement to the final environmental impact statement?"

Bow: "Not to my knowledge."

Okuda: Did anyone even discuss the possibility of submitting your analysis as a supplement to the final EIS?"

Bow: "I believe we talked about it, but we were so far along. I was told they were so far along with the EIS that the changes we were working on were not material to the EIS."

❖ ❖ ❖

## Agriculture

For more than a century, the land proposed for the HoKua Place development was profitably cultivated in sugar cane. The last harvest was in the 1990s, however, as sugar was in decline on all the islands.

David Rietow, owner of Agricon Hawai'i, Inc., was retained by the developer to assess the suitability of the land for agriculture. More than a decade ago, he had been hired by the then-owners to prepare an agricultural plan for a future large-lot agricultural condominium regime for the entire 163-acre parcel. His plan, developed to address the requirement that commercial agricultural activities be undertaken by owners of farm lots, anticipated the homeowners'

not flat, has some slopes and what have you in it. Right now, it's got a bigger problem—it's right next to the Kapa'a Middle School and residential subdivisions." Complaints from residents over dust and pesticide drift from crops would make farming in the area difficult, he contended.

Rietow went on to describe available lands elsewhere on the island: "About 140,000 acres of land are classified for agriculture. I think there's 63,000 acres in some sort of agriculture, most of it being livestock. A little over 2,000 acres that are in food production, primarily taro and tropical fruit, which leaves about 76,000 agricultural land on Kaua'i that's not being farmed."

The preferred area for farming, in Rietow's view, is on the western side of the island, where land is flatter and the area is not as populated.

Referring to the 96 acres proposed for HoKua Place, Rietow said, "if you take it out of agriculture and put it in residential, there's going to be absolutely a minimal impact on Kaua'i's ability to feed its population."

Donohoe, representing the county, challenged Rietow on several of his statements. "Doesn't the west side have issues regarding spraying, dust, chemicals near residences and in the vicinity of Waimea Canyon Middle School? Wouldn't those present the same issues" as Rietow identified with respect to HoKua Place?

Rietow acknowledged the point, but added that there's still more open land on the west side.

Bianca Isaki, one of the attorneys for intervenor Liko Martin, asked if Rietow were aware of what was now being farmed in the Kapa'a area. He answered in the negative. Given his concerns over salt spray, Isaki asked if Rietow was aware of a number of crops with a high salt tolerance, including beets, bell peppers, tomatoes, broccoli, cabbage, kale, and spinach. "Every crop has its own issues with salt spray. In many cases, it isn't a huge problem, but if you can farm on land that isn't hit with salt spray, you're better off," he replied.

*Continued on next page*



PHOTO: OFFICE OF PLANNING EXHIBIT

View of wetland on land proposed for HoKua Place development.

association raise goats. Each owner could have a few goats, with the association being responsible "for the rotation, care, and marketing of the animals. ... As an alternative, the association could hire an independent contractor to operate the project." That plan remained in the final EIS, along with Rietow's 2018 report on the agricultural suitability of the 96-acre fraction of the land now proposed for redistricting.

In questioning Rietow, HoKua Place attorney William Yuen limited his examination to that more recent document. Asked by Yuen for his conclusions about the suitability of the property for agriculture, Rietow cited "a wind problem, a salt-air problem. The land itself is



*HoKua from Page 7*

She listed even more crops that were resilient to wind.

Rietow replied by mentioning a study he had done on orchard crops, showing that trees did better with a windbreak than those without. The study, he added, was based on macadamia nut trees.

Isaki asked if he was aware of farming activities in the areas around Kapa'a. He said he was not.

Would growing food on parcels close to residential areas reduce transportation costs to consumer markets? she asked. "Sure," Rietow responded. "But you have much more flexibility with your farming if you don't have a school near you or residences around you. ... But you're limited in what you can do if you're around a school or residences."

Had Rietow ever been involved with goat farming? she asked. No, he hadn't, he replied.

Commissioner Chang followed up with her own questions about the limitations cited by Rietow. "When you refer to agricultural use, you assume herbicides, pesticides, spraying," she noted. "But can other crops be grown without use of those chemicals?"

Rietow agreed. "It's more costly, but I know people who do not use pesticides or any of that and do fine."

Couldn't you have small farmers interested in organic crops? she asked.

"You can do a lot of things with the land if you're willing to spend the money," Rietow replied.

Commissioner Okuda took his questioning of Rietow in a different direction.

"The landowner here has a portion of the property – which is larger than the petition area – designated as HoKua ag lots. Are you aware of that?" Okuda asked.

"Vaguely," Rietow answered.

"Are you aware that the Land Use Commission has long ruled that to have a dwelling on agricultural land, the dwelling must be a farm lot or a dwelling otherwise authorized essentially for ancillary or support of bona fide agriculture. Are you aware of that?"

"Vaguely," Rietow replied.

"Let me read just one paragraph from ... [Declaratory Ruling 83-08]," Okuda continued. "It deals with use of property

in the Agricultural district. It's a DR order that was signed September 8, 1983. And actually it was signed by Mr. Yuen, who at that time was the chairman of the Land Use Commission.

"Let me read the very last paragraph of that order, because it goes to my question regarding the proposed use of property by the petitioner here: 'Based on the above, the Land Use Commission rules that a single-family dwelling can be defined as a farm dwelling only if the dwelling is used in connection with a farm where agricultural activity provides income to the family occupying the dwelling and that a single-family dwelling whose use is accessory to an agricultural activity for personal consumption and use only is not permissible within the land use Agricultural district.'"

Rietow said he was aware of that.

Okuda: "More colloquially, it is not permissible simply to have a papaya tree if the fruit isn't sold commercially. ... So my question is basically this: Assuming that these ag lots are not going to involve people skirting the rules, putting up the bogus papaya tree and bogusly making representations that somewhere down the road there's gonna be an income crop – in other words, assuming the owners are going to strictly comply and in good faith comply with the 1983 order -- ... what kind of crops are going to be grown on those HoKua ag lots?"

"And my second question is, what evidence in the record is there that the crops that could be grown on the HoKua ag lots cannot also be grown on the land that's in the petition area?"

"You can grow something on any size of land you want to grow it on," Rietow said in response. "As long as you're earning quote income from it, then it becomes a farm."

Okuda: "I care whether or not there's compliance with the law. Looking at the plan that's being presented here, if we assume your testimony about the inability to really conduct agriculture on this property is the credible testimony, does your testimony in fact indicate that these ag lots are really a subterfuge undermining an order that Mr. Yuen himself signed in 1983?"

Rietow: "We're getting off the track a little bit here."

Okuda: "Oh, no. I think this is relevant to us determining the credibility

of the presentation."

Rietow: "You can do an awful lot of things with an awful lot of pieces of land. As a farmer, I go to the area that will give me the most income. Therefore I can create a profit."

Chair Scheuer asked if Rietow was aware of the farming done by the Waipa Foundation, in Halele'a, a district on Kauai's north shore.

"Vaguely."

What about the Common Ground Food Hub in Halele'a?

"Not really."

The Kilauea Agricultural Park?

"Um. No, I've heard these names but have had no contact with them."

Scheuer: "While certainly people from the west side might embrace your fondness for the west side, people from Halele'a might have some concerns about your dismissal of Halele'a as an important place for food on Kauai."

"Okay. I got it."



## Future Hearings

So far, the hearings have not included any of the witnesses that the county, the Office of Planning, or the intervenor have listed. In addition, HGKJV has yet to present its witnesses addressing such issues as water availability, cultural and archaeological concerns, and energy.

At the county level, a spokesperson for the mayor's office stated that the Planning Department had not received any request to subdivide the 163-acre parcel for the farm lots.

According to Jodi A. Higuchi Sayegusa, deputy director of planning, if the LUC approves the HoKua Place redistricting, "the 96 acres will need to be subdivided from the remaining areas... The property owners have the option to either further subdivide the agricultural lot at that time or they may choose to develop a condominium property regime that pertains to ownership within the agricultural lot."

"To date," she continued, "we have not received any communication or request to review any CPR at the areas ... not included in the proposed State Land Use District redistricting currently before the LUC."

— *Patricia Tummons*



### Waipi'o from Page 1

The public has until May 24 to comment on the proposed settlement. Comments may be emailed to [pubcommentees.enrd@usdoj.gov](mailto:pubcommentees.enrd@usdoj.gov).

### High Risk

More than 20 years ago, the state Department of Health determined that the site, located at the edge of Walker Bay, was heavily contaminated and required immediate remediation.

O'ahu Sugar went out of business around 1994, when sugar cultivation on the island ceased. The following year, the Navy assessed the suitability of the lands it had leased to the company since the 1940s for leasing in the future. A Navy consultant determined that O'ahu Sugar's pesticide mixing site was likely contaminated and should not be included in any lease.

In addition to pesticides, O'ahu Sugar stored, mixed, and loaded herbicides and fertilizers at the site for use on its fields. Also on site were several above-ground storage tanks, a Quonset hut, and an air strip for its crop-dusting aircraft.

Soil sampling by the Health Department in 1997 found dioxin/furan contamination as high as 1,530 parts per billion (ppb) for 2,3,7,8-tetrachlorodibenzo-para-dioxin (2,3,7,8-TCDD) toxicity equivalents (TEQ). (According to the EPA, TEQ is "a method to describe total toxicity for dioxin congeners as if it were the most toxic dioxin, 2,3,7,8-TCDD." 2,3,7,8-TCDD is the type of dioxin found in the defoliant Agent Orange.)

Dioxin is a toxin that can build up in food chains and is a known carcinogen. Under the Health Department's 2010 dioxin soil action levels, 0.24 ppb would be considered safe for residential use, and 1.5 ppb would be safe under commercial or industrial land use.

Pentachlorophenol, a probable human carcinogen that can also cause damage to the liver and immune system, was found at levels between 8.4 and 35 parts per million, far exceeding the federal maximum contaminant level of 1 ppb. That limit is for drinking water, not soils per se, but pentachlorophenol can be absorbed through the skin.

"The cancer risk estimates greatly exceed the upperbound acceptable risk level of  $1 \times 10^{-4}$  indicating a potential for imminent and substantial health

risks from exposure. A preliminary estimation of the excess cancer risk from chronic exposure to dioxins in the soil at the site, assuming industrial land use, is  $6 \times 10^{-2}$  (6 in one hundred or 60,000 in one million)," wrote Bryce Hataoka, acting manager for the Health Department's Hazard Evaluation and

Emergency Response (HEER) Office, in a January 9, 1998 letter to Melvin Waki of the Naval Facilities Engineering Command.

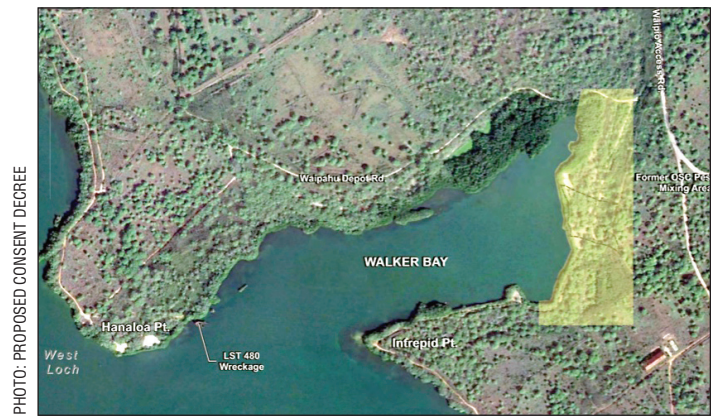
"With the serious threat posed by the dioxin contaminated soil at the former pesticide mixing area, the Department of Health is strongly recommending that the Navy, as the property owner, take immediate action to fully secure the dioxin contaminated area to prevent any human exposure to the highly toxic contaminant. The Department also recommends that warning/restriction signs be posted around the contaminated area to warn people of the hazard and keep them from entering," Hataoka wrote.

On January 27, the department issued O'ahu Sugar Company an administrative order requiring it to conduct a site assessment and respond appropriately.

The Navy quickly erected a 6-foot-tall chain link fence around the site and posted danger signs. O'ahu Sugar then hired BEI Environmental Services to conduct a remedial investigation of the site.

BEI's August 2002 report on its evaluation confirmed the Health Department's soil sampling results showing extremely high levels of dioxin and pentachlorophenol contamination. Dioxin/furan levels neared 1,000 ppb in some samples of both surface and sub-surface soils. BEI also found pentachlorophenol at concentrations ranging from 12,000 ppb to 140,000 ppb, "above the 11,000 ppb EPA preliminary restoration goal," the report stated.

Benzo(a)anthracene, Benzo(b)fluoranthene, and Benzo(a)pyrene were also found in amounts that exceeded action levels. So were pesticides 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT. At two sites, lead



The shaded area is where O'ahu Sugar Company's former pesticide and herbicide mixing site was located. Dioxin and pentachlorophenol were found in astronomically high concentrations in soil samples taken in 1997 and 2000.

levels exceeded action levels.

Dioxins/furans were also detected in all three groundwater wells sampled. "Pentachlorophenol was detected at a concentration of 1,900 ppb, above the 13 ppb Hawai'i State Contingency Plan regulatory level for saltwater in all three of the groundwater samples," the report stated. 4,4'-DDT levels also far exceeded what's allowed in the plan.

### Falling Short

Neither the Health Department nor the Navy were satisfied with BEI's work. Even before BEI started, O'ahu Sugar's attorney, Lisa Munger, and the Navy disagreed on the necessary scope of the investigation. Because the site fell within the Pearl Harbor Naval Complex Superfund site, the Navy felt the investigation needed to meet the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan and the Comprehensive Environmental Response, Compensation, and Liability Act. Munger felt it was sufficient for the work to comply with just the state's contingency plan.

Both the Navy and the Health Department stated in letters to O'ahu Sugar that they believed BEI failed to adequately determine the extent of the contamination. BEI's report suggests the dioxin contamination was limited to a little over an acre. Michael Miyasaka of the HEER office, however, argued in a March 2003 letter, "Our evaluation of the dioxin contamination levels ... clearly points to a high probability that dioxin contaminated soil has migrated into Walker Bay. This situation will require an ecological risk assessment."

*Continued on next page*

**Waipi'o from Page 9**

The Navy added in its own letter, "The topography indicates that surface water may be picking up contaminants before it gets to the last monitoring well and carrying it to the bay. The monitoring wells closest to the bay may also be tidally influenced and resulting in a dilution effect."

Even without knowing the full extent of the contamination, the EPA pressed both the Navy and O'ahu Sugar to take action.

"Because the OSCO [O'ahu Sugar Company] site is located adjacent to Pearl Harbor, surface runoff from this site presents a threat to the harbor ecosystem. Nevertheless, more than five years after the state of Hawai'i order to clean up the site, the OSCO site is still contaminated and no action has been taken by either the Department of Defense, Department of Navy, or OSCO to abate the dangers posed by the contamination other than fencing and posting of the area," wrote Keith Takata of the EPA's Superfund Division in September 2003.

In an October 14, 2003, letter, Munger noted that her client, O'ahu Sugar, "does not admit that its former facility poses an imminent and substantial endangerment to public health, welfare or the environment." However, she said it would investigate possible interim response measures.

A month passed without anything further from the company, so on November 25, the EPA offered a work plan framework that included the placement of some kind of temporary cover on the site to prevent runoff and exposure of trespassers and the environment. Depending on the type of cover, the EPA estimated costs could range between \$77,000 and about \$1 million.

By then, investigators had seen bicycle tire tracks inside the chain link fence that the Navy erected to keep people out of the site, and there was evidence the fence had been cut and repaired more than once.

The Waipi'o Peninsula Soccer Park lies less than 10 football fields away.

O'ahu Sugar replied two months later. Rather than agreeing to implement any interim protective measures, it suggested that more site characterization work be done. In response to the EPA's proposed work plan, the company had tasked BEI with preparing a plan for an interim remedy. However, it quickly became clear that the implementation costs would

"substantially exceed the partial cost estimates provided by EPA's contractor," wrote O'ahu Sugar vice president Tamara Edwards to the EPA's Keith Takata in a January 23, 2004, letter.

"Given that conclusion, O'ahu Sugar does not have the financial resources sufficient to conduct any of the alternative interim remedies [and] does not have the wherewithal to contribute meaningfully to the remediation of the site," she continued.

A work plan for BEI was never finalized, but sediment samples taken as part of a separate study of Pearl Harbor found that the highest concentrations of DDTs and dioxin/furans in Walker Bay sediments were from shallow water near the O'ahu Sugar facility, according to an EPA memo.

By August of 2004, the EPA felt it necessary to issue its own Administrative Order on Consent (AOC) to force O'ahu Sugar to take some kind of mitigative actions. O'ahu Sugar asked for more time to convince the Navy to be a party to the order. In response, the EPA withdrew its AOC and chose to issue a Unilateral Administrative Order. "Clearly, EPA's concerns are best addressed by immediate cleanup activities rather than long drawn-out negotiations," EPA assistant regional counsel Letitia Moore wrote Munger in an October 2004 letter.

The unilateral order, signed on March 28, 2005, required O'ahu Sugar to determine the full extent of contamination and prevent exposure to soil contaminants "until a final cleanup remedy is implemented," an EPA press release stated. Among other things, the company had to provide documentation that it had the financial ability to complete the work and had to submit monthly progress reports, prepare an acceptable Health and Safety Plan, and submit a final report upon completion.

Violations of the order or failures to comply could be subject to a penalty of up to \$32,500 a day per instance.

The EPA recommended that O'ahu Sugar place a geomembrane cover on the contaminated soil area, which would require the rerouting of a drainage ditch. The agency estimated the cover would cost \$247,000 in addition to the cost of further site characterization, moving contaminated soil to fit under the cover, and monitoring.

**Bankruptcy**

Within days of the order's signing, O'ahu Sugar sent the EPA documents from the bankruptcy proceedings of its parent company, Amfac Hawai'i, LLC, suggesting that O'ahu Sugar did not have the financial ability to comply with the EPA's order.

"The referenced claims against O'ahu Sugar ... were assigned to Ka'anapali Land, LLC, pursuant to the terms of the bankruptcy plan that was approved by the bankruptcy court and totaled at least \$160,000,000. As with any claims concerning Waipi'o, O'ahu Sugar is substantially without assets to satisfy the claims of Ka'anapali Land, LLC, if a bankruptcy filing should occur as there are other remaining non-debtor [Amfac Hawai'i] subsidiaries," Munger wrote in an April 4, 2005 letter to the EPA.

The EPA was not convinced. In an April 11 reply from assistant regional counsel Larry Bradfish, the agency noted that Amfac Hawai'i had merged with Northbrook Corporation in 1995, and that a financial statement for Northbrook stated that an insurance carrier for O'ahu Sugar had agreed to defend the company in certain cases. What's more, O'ahu Sugar had since become a subsidiary of Ka'anapali Land and Bradfish stated that the EPA would consider adding the latter company as a party to the order.

What happened after that is unclear, as the EPA's online archive for the site does not include any documents after April 2005. It is clear from a correspondence log provided in response to a 2014 FOIA request that the EPA and attorneys for Ka'anapali Land spent the next year or so debating the company's liability with regard to the site.

Eventually, on January 27, 2008, the DOH issued an administrative order, attempting to again spur some responsive action. The EPA followed up with a unilateral administrative order in September 2009 requiring Ka'anapali Land to complete an engineering evaluation and cost analysis for the site.

On October 30, Ka'anapali Land's attorneys John Hahn and Mayer Brown sent a letter to the EPA's Bradfish stating that the company would conduct the work required by the state's administrative order, but it still denied any liability and reserved its right to seek recovery of

*Continued on next page*



*Waipi'o from Page 10*

any costs expended.

The company hired ENVIRON International Corp. to conduct the site work and provide other deliverables of the unilateral order, including the health and safety plan.

ENVIRON began sampling in July 2011 and it appears that further sampling was recommended the following year.

**Future Costs**

To date, the site still has not been capped. ENVIRON attempted to delineate the extent of contamination. "However, the work was not completed for several reasons, including difficulty accessing the site due to its remote location and 'blast zone' restrictions, and the need for additional investigation," the EPA's Alejandro Diaz stated in an email.

He explained that the site is located within the Navy's Explosive Safety Quantity Distance Arc, where construction is restricted.

He added that the Navy will "continue to investigate the site and determine what if any response actions may be appropriate in accordance with laws and regulations."

Whether \$7.5 million, the settlement amount, will be enough to cover costs remains to be seen.

Several years ago, the state Department of Hawaiian Home Lands completed the capping of another former O'ahu Sugar pesticide mixing and loading site in East Kapolei, where the agency plans to build a residential subdivision.

The cost to install the geomembrane liner system covering the 0.6-acre site was nearly \$1.7 million.

Because the state bought the site from Campbell Estate "as is," O'ahu Sugar paid nothing toward remediation costs. The liner system was mostly paid through DHHL's trust fund. EPA brownfields grants and some state funding covered the rest.

The Waipi'o site is more than six times as large as the East Kapolei site, is much more contaminated, and would seem to require more work, considering additional vegetation that would have to be cleared and the drainage ditch that would need rerouting.

When or whether Ka'anapali Land's insurer, Fireman's Fund Insurance Company, will fork over the money may soon

be decided. According to a November 2020 filing with the U.S. Securities and Exchange Commission for the quarter ending September 30, Ka'anapali Land reported that it had sued the Fireman's Fund in February 2015 in 1st Circuit Court "for declaratory judgment, bad faith and damages ... in connection with costs and expenses it has incurred or may incur in connection with the Waipi'o site."

Ka'anapali seeks "a declaratory judgment of its rights under various Fireman's Fund policies and an order that Fireman's Fund defend and indemnify Ka'anapali Land from all past, present and future costs and expenses in connection with the site, including costs of investigation and defense incurred by Ka'anapali and the professionals it has engaged. In addition, Ka'anapali seeks general, special, and punitive damages, prejudgment and post judgment interest, and such other legal or equitable relief as the court deems just and proper.

"Fireman's Fund has filed a responsive pleading. There are no assurances of the amounts of insurance proceeds that may or may not be ultimately recovered," the filing states.

A trial has been delayed repeatedly over the years, most recently in October 2020. A trial was to have begun on February 8 and no new date has been set. A status conference was held on March 8, and another is scheduled for July 12.

— **Teresa Dawson**

*For Further Reading*

Our December 1991 issue reviewed contamination at the Navy's Pearl Harbor Superfund sites:

- "Rare Birds Seek Refuge Near Toxic Wastes,"
- "Oil Contamination is Pervasive,"
- "Officers' Club and School Among PCB Sites,"
- "The Navy's 'Superfund Six,'"
- "Editorial: Pearl Harbor Cleanup is a Fitting Tribute," and
- "In Memory of Pearl Harbor: The Losses Gone Unsung."

For more on contamination at O'ahu Sugar's East Kapolei site, see the following stories in our July 2001 issue:

- "\$31 Million Purchase Price only Start of State Expenses for O'ahu Sugar Land,"
- "Exceeding the Limit," and
- "Editorial: 'Ewa's Golden Triangle: Fool's Gold for the State.'"

Also see, "DHHL Edges Closer to Cleanup of Contaminated Soils in 'Ewa," from our September 2010 issue.

All and more are available for free at [environment-hawaii.org](http://environment-hawaii.org).

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## Exceeding the Limit, Redux

In July 2001, *Environment Hawai'i* reported on contamination at O'ahu Sugar's pesticide mixing and loading site in East Kapolei, detailing how each chemical with concentrations that exceeded acceptable limits might affect human health and other organisms.

At the company's chemical mixing site at the Waipi'o Peninsula, soil samples collected by the state Department of Health and BEI Environmental Services also had dioxin, pentachlorophenol and other toxins in concentrations that far exceeded levels that require some kind of action under state and/or federal guidelines:

**Dioxins/furans:** Dioxin, a byproduct of pesticide manufacturing, can persist in the environment for a long time. According to an EPA fact sheet, it's half-life in soil is on the order of five to ten years.

In 1997, the DOH found three soil samples from the Waipi'o site had dioxin levels of 98.9 parts per billion (ppb), 234 ppb, and 1,530 ppb, respectively. Sampling by BEI Environmental Services in 2000 found dioxin/furan levels as high as 10.55 ppb to 992 ppb.

The state Department of Health's screening level for dioxin is 10 ppb and the 2004 EPA Region 9 Industrial Preliminary Remediation Goal (PRG) is 0.016 ppb.

As we reported back in 2001, the EPA has found that short-term exposure to dioxin above allowable levels can cause liver damage, weight loss, and wasting of glands important to the body's immune system. Long-term exposure at amounts above allowable levels can cause cancer and a variety of reproductive effects, from impaired fertility to birth defects.

### **Pentachlorophenol (PCP):**

Dioxin is a common contaminant found in the pesticide pentachlorophenol or PCP. Two soil samples from the DOH's 1997 survey had PCP levels — 35 parts per million (ppm) and 8.4 ppm — that exceed the EPA's action level of 11,000 ppb. BEI's sampling found PCP in surface soils at levels between 37 ppb and 140,000 ppb. And at four locations, PCP levels exceeded the EPA's Industrial PRG of 9,000 ppb.

In comparison, PCP concentrations in soils at O'ahu Sugar's East Kapolei site ranged from 8,100 ppb to 17,000 ppb.

Pentachlorophenol is known to cause cancer and birth defects in lab animals, as well as chromosome abnormalities, blood disorders, and nerve damage in humans.

**Organochlorine Pesticides:** 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT were detected in nine of BEI's samples. The latter two chemicals were found in concentrations above the EPA's respective 1,800 ppb and 820 ppb PRGs. One sample had a 4,4'-DDD level of 2,900 ppb. Another sample had a 4,4'-DDT level of 1,500 ppb.

According to the Agency for Toxic Substances and Disease Registry, "The International Agency for Research on Cancer determined that DDT may pos-



PHOTO: BEI ENVIRONMENTAL SERVICES

An employee of BEI Environmental Services in protective gear at O'ahu Sugar Company's former pesticide and herbicide mixing plant on the Waipi'o Peninsula. The company collected soil and water samples in 2000.

sibly cause cancer in humans. The EPA determined that DDT, DDE, and DDD are probable human carcinogens."

**Hydrocarbons:** BEI found levels of benzo(b)fluoranthene, benzo(a)anthracene, and benzo(a)pyrene in soil samples that exceeded acceptable levels.

Benzo(b)fluoranthene is a probable carcinogen in humans and has been shown to cause lung, liver and skin cancer in animals. Benzo(a)anthracene has been found to be genotoxic and to cause tumors in the liver, skin and lungs of young mice. Benzo(a)pyrene is a carcinogen in humans.

**Lead:** BEI found excessive lead contamination in two soil samples. Depending on the concentration, "lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. Lead exposure also affects the oxygen carrying capacity of the blood," according to the EPA.

— T.D.