

Larry Dill, Chief Engineer,
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April 3rd, 2014

Dear Mr. Dill,

Please accept this urgent request for your intervention and appropriate action with several serious problems associated with Hawaii Dairy Farms (HDF) plan to construct and operate a large dairy in Maha'ulepu Valley. HDF has begun major construction (moving large amounts of soil), despite their failure to secure the required State permits for their proposed dairy. On their printed "Fact Sheet" (page 2 of the attached) HDF claimed that their "NRCS permit-completed" justified their significant construction on the farm thus far. Also, at public meetings and on their website, HDF claimed approval of their 'Plan' by NRCS (Natural Resource Conservation Services). The "approval of their Conservation Plan", claimed now on their website, purportedly justifies all their construction activities even in the absence of State or County permits. In fact, however, on inquiry to the Kauai and State NRCS office, we learned that there is no such thing as a "NRCS permit". In addition, NRCS advised that they do not "approve" any plan as claimed by HDF. HDF's misrepresentations are compounded by the factual errors and omissions in their 'plan'. On review, their 'Plan' misstates and omits critical information to the permit and approval process. The State asked HDF to prepare a new CNMP (Comprehensive Nutrient Management Plan). The State is currently reviewing their revised CNMP. Clearly, their claimed "NRCS permit – Completed" is false. The rainfall readings relied on by HDF, the lack of soil type and drainage studies or plan for storm water drainage to avert liquefied waste runoff and/or effluent spills are just some of the areas in which the HDF Plan is clearly deficient. Having attended all of their public meetings, it seems that HDF is modifying their 'Plan' as they go. Publically, they herald the New Zealand Dairy Farm as their model. HDF, however, has never disclosed the fact that New Zealand Dairy farming has had a devastating nationwide environmental impact. Please consider the government publications and other New Zealand periodicals detailing the disastrous environmental consequences from the New Zealand model relied on by HDF in designing the dairy operation proposed for Maha'ulepu, on pages 4-5 of this letter.

Having been born and raised in Hawaii and having grown up on sugar plantations, I appreciate the need for agriculture and agriculture based businesses like a dairy. Those who have joined me in signing this letter want to assure you, and everyone who receives a copy of this letter, that we support having a dairy on Kauai. Our concern and request for your urgent assistance, however, is based on the misinformation that HDF has provided authorities and the limited acreage planned for the proposed herd size (1,880-2,000 dairy cows). As detailed below, the operation HDF plans is certain to expose Maha'ulepu and its pristine coastline to serious pollution. Based on the nutrient load (waste) that the cows will deposit on the grazing acreage and which will remain there, pollution cannot be prevented.

Based on the facts set forth in this letter, it is imperative that the County step in, reconsider any decision it has made and/or exemption granted based on the actions of West Kauai, S & WCD. As detailed herein, the severity of the HDF 'Plan' errors and omissions should clearly invalidate any approval/exemption extended to HDF. They did not include the information they should have. They understated or underreported facts that were easily accessible and which, when disclosed, makes it clear that there will be significant environmental damage done to Maha'ulepu Valley and the protected wildlife that live there. Is it credible for HDF to now admit publically that they under-reported the rainfall in the area, failed to do drainage studies, failed to disclose the true soil type (not "free draining" as claimed), all of which significantly impacts the runoff and likely damage to the environment? Can HDF be allowed to now disclose the fact that their cows will deposit more than 20 tons of waste/acre/year (manure and urine)? Should HDF be allowed to apologize for their misinformation and factual omissions, claiming that "they'll take care of everything," "they'll be the safest operating dairy the island has ever had" or should the authorities reconsidered the suitability of the HDF dairy operation at this location? Although HDF refers to its proposal as a 'sustainable dairy farm,' they acknowledge that at least 30% of the feed for the herd will be imported and that percentage increased if the highly invasive non-native kikuyu grass is not sufficient. Milk is also to be processed off island, hardly a 'sustainable' scenario. We, the undersigned, believe that HDF has amply demonstrated their disregard for the environment, willingness to play fast and

Larry Dill Letter, page 2, 4/3/14

loose with their facts, such that they cannot be entrusted with so precious an area. As the following demonstrates, your reconsideration of a dairy operation, as HDF proposes, is clearly warranted. For these reasons, we urge your reconsideration of the entire HDF project.

In summary, the above request for reconsideration is made on the following bases, because HDF:

- 1) Understated the rainfall records, thus indicating a lower risk of waste runoff and effluent spill than actually exists,
- 2) Incorrectly reported the soil type at the site giving a false impression of the soil's ability to handle the waste/nutrient load,
- 3) Failed to include hydrological or drainage studies which would confirm that drainage in the area runs directly to the ocean,
- 4) Failed to accurately inform authorities of the actual amounts of waste that will sit on the remain on the pastures and be subject to liquefaction and runoff, and
- 5) Last but not least, failed to disclose that the model they used to design their operation, was well known for its damage to the environment in New Zealand.

Based on these facts, and other omissions (e.g., actual nutrient load (cow waste) per acre compared to the reasonable uptake of the manure by kikuyu grass), our inquiry into the propriety of a dairy farm in Maha'ulepu, as HDF proposes, prompted contact with the NRCS offices. Surprisingly, we learned from Donna Hopwood on Oahu that the NRCS offices never issues a "permit" nor "approves" any conservation plan even one that includes sufficient information. The Kauai NRCS office explained that they offer advice but the landowner is not obligated to follow their advice. They also do not disclose what advice, if any, is offered to any client because they want to encourage landowners to "be good stewards of their land". In speaking with Donna Hopwood at the Oahu NRCS office, she clarified that Kauai NRCS gave neither a permit nor approval of the HDF plan. In fact, Ms. Hopwood stated that it was incorrect for HDF to claim on their fact sheet that they had an "NRCS permit- completed." The Oahu NRCS office referred us to the West Kaua'i S&WCD. In response to our concerns about the omissions and errors in the HDF 'Plan', Peter Tausend, Director, West Kauai S &WCD, explained that when HDF came before their five member board with the Kaua'i NRCS representative, they were given the impression that HDF's plan had been developed in accordance with USDA NRCS standards. Consequently, the West Kauai S&WCD heard a summary presentation by HDF GM, Jim Garmatz, and Grove Farm Executive, Mike Tressler. The HDF plan was not given a thorough review. Thus there was no appreciation of the lack of soil drainage studies, inconsistency in rainfall records relied upon, etc. as listed above and explored in greater detail below. When asked if they could reconsider the HDF plan in light of the inaccurate rainfall readings relied on, etc. we were told a letter could be directed to the West Kaua'i S&WCD offices. By copy of this letter, we are requesting reconsideration by the West Kauai S&WCD as well.

If they were good stewards of the land and truly concerned about the environment, why didn't HDF disclose the serious negative environmental impact and "plummeting water quality". HDF must have known that the New Zealand dairy farming, which they used for their model, has become notorious for causing serious pollution problems to include "plummeting water quality"? Would the S&WCD and the County have authorized even the initial phases in Maha'ulepu, had they known about the significant and well documented environmental damage caused by the very dairies HDF intends to emulate? Shouldn't they have disclosed this problem and obtained expert planning to keep it from happening here? HDF plans to create 10-15 new jobs on Kauai to run the dairy. There will be ancillary work for others. Are those jobs worth the probability of long term damage to Maha'ulepu, its wildlife and the endangered species found there?

Larry Dill Letter. Page 3, 4/3/14

Just last Thursday, at the LBA meeting (3/27/14), HDF acknowledged they are still working with the State on their CNMP. They state that "they are looking into soil drainage studies" and are now using revised rainfall numbers consistent with US Weather Service records (at least 10.4 inches/day/rain event). After "working on their 'Plan' for the past 5-6 years", how likely is it that the understated rainfall totals and other 'Plan' omissions or non-disclosures are the

result of inadvertence or oversight? Would someone investing \$17 million really need concerned citizens to contact the State and US Weather Service to assure that accurate soil and rainfall information was used? Should concerned citizens need to point out the lack of drainage studies or an adequate storm water drainage plan? HDF's assurance that they intend to be "good stewards of the land" is suspect. After all the years of preparation, it was in response to questions from the audience, that prompted HDF to say they are "looking into low voltage lighting" for early morning and late night milking, to protect the Shearwater Birds. That was not yet part of their 'Plan'. It may be more likely that the economic agenda drives HDF to give summary presentations, saying what they think people want to hear, rather than doing the self checking required of "good stewards" like having a firm plan to periodically check water quality to assure their operation is not polluting the environment.

The proposed dairy site has been designated "special agricultural land". It is clearly deserving of a careful review, no matter how much money has already been invested in the area. Many of us are very concerned and feel the County must be more involved, particularly after HDF admitted the numbers used in their 'Plan' were not all accurate. They could and should have used correct information, which was and is readily accessible.

- 1.) The 24 hour/25 year rain event was not reported accurately and the rainfall numbers used were inconsistent with the HDF Conservation Plan, ('Plan'). In their plan. HDF reported a 6.6 inch single day rain event when designing their roofs, but later, when discussing the risk of waste runoff, they used a rainfall of 1.89 inches. Having reviewed the HDF 'Plan' and after contacting the US Weather Service, we recognized much higher single day rain events than used by HDF. The change is significant because with each inch of rain, more than 27,000 gallons of water falls on every acre. The under-reporting by 8.5 inches obscures more than 217,000 gallons of water per acre per day. There were over 60 instances where the US Weather service records reported rainfall of more than the 1.89 inches figure used by HDF in their 'Plan,' clearly key to the issue of nutrient contamination.
- 2.) In the 'Plan', HDF described the farm's soil as "free draining volcanic soil." That was not accurate. In fact, at their first two public meetings, HDF acknowledged the soil at the site is actually clay and slow to percolate, leaving the waste on the surface longer. In follow up after hearing that statement, HDF was questioned about the potential for spill or waste runoff that would contaminate the streams, river or the ocean and its reefs.
- 3.) At their public meetings, having confirmed their failure to properly identify their soil type or conduct proper drainage studies, it was evident that HDF's storm water drainage plan (to prevent pollutants from contaminating their ground water and fresh water streams running right to the Maha'ulepu coastline) was clearly inadequate. When one considers the amount of waste to remain in the pastures, and factors in the storm water events, documented by the Maha'ulepu rain gauge (at least 10.4 inches in one day), it is obvious that HDF failed to develop a comprehensive storm drainage plan. HDF did not factor in the actual rainfall numbers with the waste that will be left on the pastures. In so doing they significantly underestimated the risk of pollution from waste runoff and/or effluent pond spills. They now say that rather than "keep the effluent ponds full as initially planned", instead they "will leave more freeboard". Concerned citizens had to alert authorities to the true rainfall records in Maha'ulepu. Leaving more freeboard is, no doubt, HDF's attempt to minimize the risk of spills. However, when it has been raining for days as it has recently, and when considering the clay soil that is slow to drain, the pooling of water on the farm will be collected by their drainage system, which all runs to the effluent ponds because of the waste on the ground. At periods of high rain, like the more than 60 times when multiple day rain events exceeded the 1.89 inches HDF relied on, where would they empty the effluent ponds? How would they maintain the 'freeboard'? Each inch of rain produces 27,154 gallons of water on each acre. By understating the actual

Larry Dill Letter, Page 4, 4/3/14

rainfall risk of 10.4 inches, (relying instead on using only 1.89 inches = shortfall of 8.4 in). That 8.4 inch discrepancy meant HDF overlooked and did not plan for 132,750,475 gallons of water that would have been deposited on their farm cite (8.4 in. X 27,154gal/in X 582 acres = 132,750,475 gallons of water) during that recorded storm. The US Weather Service records for Maha'ulepu date back 32 years. There are numerous days of 4", 5", 6", 7" and events over 8". This fact is evident by the lush vegetation one sees in the valley at this time of year. Those rainfall amounts occurred on multiple instances, and often during periods of regular rain where the ground would have been saturated. These numbers do not include the storm water running

from adjacent uphill areas. Will any manure or urine remain on the farm pastures with this type of deluge? Most, if not all, of the manure and urine will be swept to the sea, contaminating as it goes. HDF included an aerial map of the proposed farm site. On it, HDF marked 'Waikomo' stream, noting it was 2.5 miles from the farm site. In so doing, HDF's map was misleading because it failed to identify the two streams, underground aquifers and river running right through their farm. These sources of clean water are at greater risk of pollution than anything 2.5 miles away. Those sources will provide a speedy escape of pollutants to the ocean and coral reefs. During heavy rains, the river swells and even floods at Makauwahi cave.

- 4.) There were no specifics as to the volume of waste the herd would leave on each acre. There were no specifics as to how much water would be added to the site other than the Grove Farm lease term promising 3,000,000 gallons from the Waita Reservoir per month. It was not until the recent LBA meeting that HDF disclosed that, in response to a question, their cows would produce at least "110 lbs (urine and manure) per cow/day". The cows' waste will primarily remain on the grazing pastures. There is to be a total of less than 360 grazing acres ('Plan' calls for 119 fenced, 2-3 acre parcels which equals <360 total grazing acres where 300-330 cows will graze for 4-6 hour intervals). There will be more than 200 tons (manure & urine) per acre per year. The 104.5 tons of waste per acre per year was calculated using HDF's waste statistics, albeit less per cow than other dairy reports, ("110 lbs per cow per day" X 1,880 cows X 365 days = 75,482,000 lbs per year, divided by the total grazing acreage, < 360, = 209,672 lbs per acre). That constitutes more than 104 tons of manure and urine deposited on each acre per year. HDF reports that 8-10% of this will fall on hardscape which will be washed to the effluent ponds along with the water used to wash the cows and the milking area. The manure solids that settle in the pond will be liquefied every 90 days and pumped onto four separate 25 acre parcels (the manure sludge pads). The total waste, 104.5 tons per acre per year, even when reduced by the 8-10% that will go to the holding or effluent ponds, will still result in an incredible of 188,705 lbs or more than 90 tons per acre/year. As stated, the farms 582 acres will have 100 acres less for cows to graze on as a result of the sludge pads. The other reduction in acreage to a grazing area of less than 360 acres will be due to raceways, roads, sheds, milking area, troughs, irrigation, etc. The farm's sludge pads are closest to the ocean and fragile coral reefs, a little over one mile away. There are no sheds or barns to house the cows at night. The six groups of 300-330 each will be left in the six 2-3 acre fenced parcels on which they spent their third rotation of the day. They will have to rest or lay on the ground of the small parcels where the cows had also deposited urine and manure while grazing.
- 5.) The catastrophic harm to New Zealand's clean water was never mentioned in the HDF 'Plan' when describing the New Zealand dairy farm model used by HDF. This non-disclosure is only part of the picture. The other part is HDF's failure to have a clear plan to avoid the very same pollution that New Zealand is suffering from.

On review of a recent report from the independent Parliamentary Commissioner for the Environment (released in New Zealand November 2013), the Commissioner confirms that dairy farming in New Zealand has caused significant damage to their environment and has cost them water quality to the extent that swimming and fishing were characterized as something that may become "a thing of the past," absent an agreement to restrict all dairy farming from proximity to waterways (www.dairynz.co.nz/file/fileid/45931, www.forestandbird.org.nz/what-we-do/publications/media-release/one-conclusion-water-report-dairy-conversions-need-moderatin-0).

As one can deduce from the articles that follow below, dairy farms have caused horrific damage to the New Zealand environment, a fact well documented. Please see "Saving Trout Country," March 2014, *North and South* (a New Zealand Publication) pgs. 64-75. When discussing New Zealand's falling water quality, the author reports that "more than 60% of our rivers are no longer safe for swimming. In some places we now have nitrates building up to such high concentrations in ground water they threaten community drinking water supplies (pg 72)."

What will become of the existing Maha'ulepu Well water which is to provide 50,000 gallons of clean drinking water for the cows? According to HDF's website, the clean water will be used to water the herd and wash down the hard stand in and around the milking area. If the well becomes contaminated, as has happened to the ground water in New

Zealand, where will the fresh water come from? Although Grove Farm plans to furnish 3,000,000 gallons/month from Waita Reservoir, that water is not clean enough to wash or water their herd per HDF). The *North and South* article goes on to describe currently what fishermen experience when casting in rivers or streams: "At one point I was releasing a trout, still light headed and shaky from the action, when I heard Rushmer say 'Oh no! Not again!' I looked up, following his gaze along the creek. Something terrible was happening to the water upstream. It was turning dirty before our eyes, muddy grey and brown, with long tendrils of muck racing downstream like storm clouds obliterating clear sky. Within minutes the gin-clear spring creek, which never naturally discolors, ran like a river in spate, murky and thick. And the smell! Oh God almighty. It would make you retch and gag, if you haven't fainted long before that (page71)." The article goes on to describe that dairy people have had to get behind the effort to stop such pollution. The formation of a risk management agency, "The RMA represented a deliberate shift on the part of New Zealanders Shouldn't we learn from rather than replicate New Zealand's dilemma?"

As confirmed by US testing, "raw manure is up to 160 times more toxic than raw municipal sewage (<http://www.sustainable.or/267/water-quality>)." Rather than risk the proven and frightening consequences of such a large amount of waste (206,000lbs per day) from the 1880 head herd (110lbs/day X 1880), and on balance with the need to protect and preserve the environment, especially in one of Kauai's most treasured areas, shouldn't HDF be asked to meet or exceed the protocols adopted in New Zealand, home of the rotational dairy grazing model relied on by HDF. Larry Dill Letter, pg. 5, 4/3/14

Shouldn't all responsible governmental entities assure that HDF does not pursue their proposed 3.7 million gallons per year milk production, clearly an "economic advancement at any cost" (based on all their actions to date) but rather require that HDF reduce their pollution load and "move towards long term economic and environmental sustainability (pg .73)" *North and South*. Does it make any sense to subject Kauai and, its streams, river, the ocean and its coral reefs to the type of pollution that has rendered 60% of New Zealand's formerly clean waters to waters that are unsafe to swim in.

To address such problems, New Zealand recently formed the Dairy Environment Leadership Group (DELG), which has adopted a "Sustainable Dairying: Water Accord" that now prohibits any dairy farming near significant waterways and wetlands because of a serious decline in water quality (www.dairynz.co.nz/file/fileid/47273).

Please see additional recent articles in *The New Zealand Herald*, January 15, 2014, "Dairy Doing Dirty on Our Environment" http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11186378, & and another January 16, 2014 "Many Rivers to Cross to Fix Dairy Industry" <http://www.stuff.co.nz/the-press/news/9425346/Dairy-farming-harming-water>. Each of these articles confirms the alarming problems of New Zealand. Shouldn't we be careful and really do our homework before being entranced with the idea of maybe having some HDF milk return to Kauai. In times of hurricane, the sustainability concept is called in to question as there will be no power to process the milk, assuming a bottling operation eventually opens here. More importantly, there is an internationally recognized definition of "sustainable farming". One of its critical components is to "do no harm." Can that be said of an 1880 head dairy proposed to graze on less than 360 total acres?

Larry Dill Letter, Page 6, 4/3/14

Please see other pertinent references as follow:

<http://www.stuff.co.nz/the-press/news/9425346/Dairy-farming-harming-water>

<http://safe.org.nz/Campaigns/dairy-farming/> see under sub-heading entitled Dirty Dairy

<http://nzdairy.webs.com/environmentalissues.htm>

<http://online.wsj.com/news/articles/SB10001424127887324747104579021972535747490>

<http://nzic.org.nz/ChemProcesses/dairy/3J> Environmental Issues in Dairy Processing

Based on all of these facts, and the fact that the farm's greatest elevation is only 65 feet above sea level, we are urgently requesting your Reconsideration of the permit exemption extended to this project. There will be additional signatures from some who met but are now off island. A hard copy requesting your reconsideration and that of the West

Kauai Water and Soil Conservation District will follow. We need to act, before irreparable harm occurs. Thank you for your anticipated help in this regard.

Respectfully submitted,
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