

May 1, 2019
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James Parker
Board of Environmental Protection
17 State House Station
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Dear Mr. Draper,

Greetings. Enclosed you will find copies of newspaper columns written by me on Nordic Aquafarms, all but two of which (“One Toxic Stew” and “The Fredrikstad File”) were published in The (Belfast) Republican Journal. Three of the columns (“The Most Toxic Food in the World?,” “24 Hours in Denmark,” and “Two Hours with Bent Urup”) were based on a trip I made to Norway and Denmark last fall to look into Nordic Aquafarms' operations in those countries.

I am sending you these columns because I believe they speak directly to the character, integrity and credibility of Nordic Aquafarms, and I also believe these should be important considerations when evaluating Nordic's DEP/BEP permit application. I believe this is especially true if the BEP is relying to any degree on information provided by Nordic Aquafarms and or entities that are being paid by Nordic Aquafarms. As these columns clearly demonstrate, Nordic Aquafarms has serious and considerable credibility issues.

Please note that Nordic Aquafarms contacted Courier Publications, which owns The Republican Journal, and that after four years of writing a regular, biweekly column for The Republican Journal, and after winning three Maine Press Association awards in three years, I was fired by Courier Publications for my Nordic Aquafarms coverage. At no time has anyone demonstrated that any of my reporting on Nordic Aquafarms was inaccurate, and it seems clear to me that I was fired as a result of pressure from Nordic Aquafarms.

I believe this also speaks to the character of Nordic Aquafarms. Frankly, I believe Nordic Aquafarms uses strong-arm tactics to get what it wants and because of this, any information it provides to BEP – or to anyone - should be viewed with considerable skepticism.

Please note also that I am sending copies of these columns to all the members of the BEP, and please contact me if you have any questions.

Thank you for your time and attention,



Lawrence Reichard

This Stinks

Publication date: May 24, 2018

To the Mayor and City Council:

On behalf of many of my fellow Belfast citizens, I'm sorry that democracy is inconvenient for you. I apologize.

But you see, we live here. This is our home. And we think we should have a say in what happens here. We don't think big corporations should be able to do whatever they want while we're expected to roll over and play dead. We don't like being handed a done deal.

The decision to change zoning so Nordic Aquafarms can build one of the world's biggest land-based industrial salmon farms here in Belfast was clearly made well before the formal vote. Why else have the April 17 city council meeting in the tiny city council chamber, which everyone knew would overflow.

To be able to televise the meeting, we're told. But at least some of you knew it could be televised elsewhere. And why were accommodations not made so Director of Code and Planning Director Wayne Marshall's presentation materials could be seen by the public?

We implored you to wait until more questions were answered, but this was ignored. Mayor Paradis later told me the Planning Board is "much more poised to do a thorough investigation." But if Nordic passes the already established Planning Board criteria, the board is essentially obligated to permit the project. Thus you were the last chance to simply say no, we don't want a huge industrial fish farm in our small community.

In other words, you simply passed the buck to the Planning Board.

There remain many unanswered question, and statements made by Nordic raise serious questions about its credibility.

In promotional material, Nordic says the facility will have no "adverse environmental impacts." False. Fish produce feces, and Nordic would produce 66,000,000 pounds of fish per year - that's a lot of feces. Nordic says most of that might become fertilizer - might. But the rest will go into Belfast Bay, and that is an adverse environmental impact. Fish feces produces nitrogen and phosphorus, which cause algae blooms and oxygen deprivation for all marine life.

At a May 9 public meeting, Nordic CEO Erik Heim said salmon production is the most efficient way to produce protein. False. Heim indicated that Nordic's salmon would be fed primarily or exclusively fish meal and that one pound of fish meal produces one pound of salmon. But that's misleading. According to Anders Karlsson-Drangsholt, senior aquaculture adviser for the Bellon Foundation in Oslo, Norway, Marine Harvest, the world's biggest salmon producer, uses 100 pounds of fish meal protein to produce only 31 pounds of salmon protein - a protein loss of 69 percent.

According to Frida Bengsston of Greenpeace, it takes two pounds of unprocessed fish to produce one pound of fish meal. That's an overall protein loss of about 84 percent. Even within fish-based protein production, farm-grown salmon is not the most efficient protein production - not

even close. That prize would go to the original fish stock.

And that doesn't even count plant-based protein production, which is much more sustainable than any animal-based protein production. Farm-grown fish is not the best protein answer for a crowded planet - not even close.

At the May 9 public meeting, Nordic said it would extract 1,200 gallons of well water per minute. That's more than 630,000,000 gallons per year. That's more than 70 percent of all of Poland Springs' statewide extraction, which comes from several far-flung towns, and it's almost two percent of Maine's entire water consumption. It's not hard to see what that could do to local water supplies.

At the May 9 public meeting, Heim said no fish would escape the Nordic farm; but according to Anders Karlsson-Drangsholt, there is "a known problem" of fish escaping from indoor facilities. "No matter how secure they say the facility is, they don't know," Karlsson-Drangsholt told me by phone from Norway. "Even multiple barriers can't prevent escapes." According to Karlsson-Drangsholt, land-based fish are less hardy than open-water fish, and when they breed with open-water fish, the offspring are less hardy. Escaped land-based fish also compete for spawning grounds and destroy the eggs of open-water fish. In 2015, in just one incident, six thousand fish escaped from a land-based fish farm in Hopen, Norway.

According to Belfast Director of Code and Planning Wayne Marshall, the city will pay half of Nordic's dechlorination costs for six years. That's \$120,000. But Nordic is a for-profit corporation - why should taxpayers cover any of its costs? Marshall Wharf Brewing Company dechlorinates its water, but the city doesn't pay half of that.

At the May 9 public meeting, Nordic showed sketches of an attractive campus replete with a visitor center and modern, state-of-the-art buildings. Nordic hyped the attractive aspect of its proposed reflective buildings. But almost a billion birds are killed every year in this country by flying into buildings, and this problem is greatly exacerbated by this kind of architecture.

The Nordic facility would narrow part of the Little River Trail corridor to 250 feet. At a February 21 public meeting, Heim said he knew the trail was beautiful and important and that he appreciated that. But not enough to leave it alone. The trail is indeed beautiful and important, and it would be violated for the benefit of a for-profit corporation.

Nordic says it will invest \$450-500 million in its Belfast facility. Bath Iron Works is a \$500 million facility. Do we really want a Bath Iron Works in our community?

There has been much talk of due diligence, but you have failed to produce it. This whole thing has acquired the stench of a backroom, sweetheart deal. Rescind the zoning change, listen to your constituents and get more answers. Do your job.

Most sincerely,

Lawrence Reichard

Nordic's Credibility Chasm

Publication date: June 7, 2018

In my last column I wrote about plans by the Norwegian company Nordic Aquafarms to build one of the biggest salmon factories in the world in Belfast. In that column, I cited a number of misrepresentations made by Nordic. There are more.

At a February 21 public meeting, Nordic made a powerpoint presentation that showed one of its existing fish factories located in a residential area, and Nordic CEO Erik Heim said the factory's residential neighbors had no problem with the plant. Soothing, reassuring words. And misleading. Left unsaid is that Nordic's proposed Belfast factory would be more than five times as big as either of Nordic's existing fish factories.

In its Belfast promotional material, Nordic states that "The land in question has few neighbors." It's more than a few. There are 12 residential homes on Perkins Road alone, and that doesn't count homes on Route 1, Herrick Road, South Congress Street and elsewhere that may be directly affected by truck traffic and other factors associated with the construction and operation of a \$450-500 million facility.

And what about those "few" neighbors? Are we to understand that they should sacrifice their neighborhood for the sake of Boston and New York consumers, and for the sake of a for-profit corporation from 3,000 miles away?

Nordic's U.S. operations - which are so far only Belfast - are incorporated in Delaware. Why would a corporation doing U.S. business only in Maine incorporate in Delaware? Corporations register in Delaware because Delaware shields corporations from liability more than other states. Is Nordic expecting liability problems? At the February 21 public meeting, Erik Heim said Nordic wanted to be a good neighbor. Wouldn't a good neighbor incorporate here in Maine and follow Maine law, as local businesses do?

Nordic is not the only one aggressively pushing this fish factory. The mayor, the city council, city government, the Belfast Water District, Governor LePage and even Maine's congressional delegation have been there every step of the way. But don't take my word for it. A January 30 Nordic press release quotes Belfast Economic Development Director Thomas Kittredge as saying, "...we all worked hard to get an agreement completed on a rather accelerated timetable."

Exactly. An accelerated timetable, before key questions are answered - and before citizen cries for more time and real due diligence reach a level too high to ignore.

Nordic has signed a purchase and sale agreement to buy 26 acres from the Belfast Water District. The water district's website calls the District a "quasi-public" entity, and according to Belfast Code and Planning Director Wayne Marshall, the water district is controlled by, and answers only to, the state Public Utilities Commission.

But the water district is not a private corporation. All surplus ratepayer revenue goes toward future maintenance, not private profit. It is a de facto public entity, whether it's called that or not. It belongs to the people, and the people should decide whether its assets are sold to a private, for-profit corporation, with resultant degradation of public spaces such as the Little River Trail. There has been

no public discussion in this community about selling off a chunk of this treasured public recreation space known to some as the Belfast Woods. And as guardian of the public interest, the Public Utilities Commission leaves much to be desired, as exhibited by, among other things, the 2017 state solar bill debacle, in which the PUC kicked to the curb all public, environmental and even economic concerns in favor of thoroughly corporate, fossil-fuel interests.

The Nordic factory would shrink the Little River Trail corridor to a width of 250 feet, less than the length of a football field, and Code and Planning Director Marshall seems to think we should be grateful for the 250 feet. The trail is only 10 or 12 feet wide, Marshall said in conversation with me. Is this the due diligence we keep hearing about?

But Belfast city officials aren't the only ones who have discarded due diligence. Governor LePage and all of the second district's congressional delegation have piled on. In a January 30 press release, Nordic quotes LePage, Senators Angus King and Susan Collins, and Rep. Bruce Poliquin praising the fish factory. That was fully four months ago, and still unanswered are many questions that should be answered before our purported representatives weigh in on a \$450-500 million project that could profoundly transform our small community. And given the considerable environmental problems experienced by fish factories around the world, these statements, made with inadequate information, are nothing short of reckless and cavalier.

Praising a proposed fish factory they know next to nothing about. Easy for them to do - they don't live here.

Some cite Nordic's Norwegian roots and Norway's environmental record as reasons for supporting the Belfast fish factory. But Norway's factory fish industry is fraught with environmental problems, and Norway's general environmental record doesn't necessarily extend to its companies' overseas operations. To cite but one example, Norway's Marine Harvest, the world's biggest salmon producer and owner of Belfast's Ducktrap River seafood wholesaler, knowingly transferred to open-water pens salmon infected with piscine reovirus (PRV), a virus that started in Norwegian fish factories. The virus is associated with heart and muscle inflammation, and the transfer put at risk British Columbia's wild salmon population.

"They've been unable to control it (PRV)," said Canadian American marine biologist and researcher Alexandra Morton, who is suing the Canadian government for allowing the transfer. Environmental lawyer Margot Venton likened the actions of Marine Harvest to playing Russian roulette with wild salmon populations.

As this column goes to press, the city council will vote June 5 on an ordinance amendment that would allow Nordic to build structures taller than currently allowed. If only the mayor and city council represented this community as well as they do the executives and stockholders of less-than-forthcoming fish-factory corporations from 3,000 miles away.

Civility Starts with Truth

Publication date: July 20, 2018

There has been much talk of incivility plaguing the Nordic Aquafarms debate, but truth is the essence of civility, and here Nordic is coming up woefully short. In two recent columns I wrote about numerous misrepresentations made by Nordic regarding its proposed Belfast fish factory, such as the suggestion that fish can't escape from land-based fish factories — they can and they do.

But since the publication of those two columns, Nordic has migrated from mere misrepresentations squarely into the realm of outright lies.

At a June 12 public information meeting, a panel of purported experts fielded softball questions tossed out in soothing tones by Des Fitzgerald, founder of Belfast's Ducktrap River, now owned by Marine Harvest, the world's biggest salmon producer and a Norwegian corporation with a list of environmental problems as long as your arm.

After Fitzgerald's questions, the panel took questions from the audience, and in response to a question about Nordic's feed, a panelist said that humans don't eat the fish that comprise fishmeal. That's a lie.

Wikipedia lists 14 fish species that comprise fishmeal. Humans eat 13 of those 14 species, and consume the 14th as fish oil.

This is important because Nordic is selling its fish factory as the most efficient way to produce protein for a hungry world, and that's untrue. It would be much more efficient to consume the original fish stock — and that doesn't even count plant-based protein. It's also important because Nordic is asking to be trusted with a host of unanswered questions regarding issues such as discharge pollution and the composition of its fishmeal, which affects the composition of its discharge and profoundly affects forage fish stocks, which are vital to general fish populations.

It's disturbing enough that an alleged expert would mislead — or lie to — this small community, but what's worse, no other member of the panel corrected such an obvious misstatement — or lie. Getting one, two or even three of 14 fish species wrong might be a misstatement. Getting 13 or all 14 of 14 fish species wrong is a lie, as was the silence of the rest of the panel.

It's also troubling that one panel “expert” said it was fortunate that Nordic's fishmeal, sourced elsewhere, wouldn't pressure Gulf of Maine forage fish populations, apparently unconcerned that Nordic's fishmeal might pressure forage fish populations elsewhere. Indeed, Peru, a major forage fish supplier, has repeatedly had to close its anchoveta (anchovy) fisheries because of overfishing to supply foreign fish factories.

And for those seeking an honest discussion and debate going forward, one recent move by Nordic is discouraging. At the June meeting, Nordic announced the hiring of Marianne Naess, wife of Nordic CEO Erik Heim, to, among other things, “oversee public relations.” This is not reassuring. Naess' resume reads like a Who's Who of corporate irresponsibility and outright criminality.

Naess comes most recently from what Nordic calls a senior executive position at McKesson, the sixth-largest corporation in the country and a company up to its eyeballs in the opioid crisis.

McKesson recently shelled out \$150 million in fines for turning a blind eye to suspicious opioid orders — 5.8 million opioid pills to just one pharmacy in West Virginia, ground zero for the national opioid crisis and a state that suffered 670 opioid deaths in 2016, at a per capita rate 72 percent higher than Maine's, which is almost double the national rate.

And in 2016, McKesson lobbyists succeeded in getting Congress to kneecap Drug Enforcement Agency efforts to prosecute corporate opioid pushers such as, well, McKesson. A killer company to work for.

Before McKesson, Naess was at Aker Solutions, a Norwegian company that supplies offshore drilling equipment to oil companies. Aker works in dozens of countries around the world, including Nigeria, where corruption is wildly out of control, where Big Oil is destroying the environment of the great Niger Delta, and where the murder of environmental activists is almost routine.

Before Aker, Naess was at Ernst & Young (now rebranded as EY), a global financial services corporation that specializes in helping millionaires and billionaires hide their wealth, often illegally, in shady offshore banks where they can avoid paying their fair share of taxes.

According to Tax Justice Network, EY is one of the four biggest culprits in this giant global scam that rips off those of us who do pay our fair share of taxes.

Naess's Ernst & Young background fits squarely with Nordic's having incorporated its only U.S. operations — those of Belfast — not in Maine, but in Delaware, where untold numbers of corporations hide from the taxman in the loving confines of P.O. boxes.

And before EY, Naess was at Arthur Anderson, an ethically challenged global accounting firm that imploded in the wake of cooking the books and destroying records in the infamous Enron scandal, a veritable Ponzi scheme that nipped at the heels of the George W. Bush administration and became the then-biggest bankruptcy in U.S. history.

No one leaves a senior executive position at McKesson to work for Ma and Pa Kettle, and no one hires a tried-and-true veteran of big-boy criminal corporations to hand out candy at the corner of High Street and Main. This is the real deal. This is the big leagues.

As Nordic prepares to file for permits from the Belfast Planning Board, the Maine Department of Environmental Protection and the Army Corps of Engineers, the company is ramping up its PR campaign.

So far that ramp-up has meant hiring PR help from huge corporations well-honed in the art of deception. And it has meant wandering further and further from the truth. This bodes poorly for an honest discussion and debate about an issue that could profoundly affect the future of our small community.

The Deloitte Report

Publication date: August 16, 2018

On June 26 I made a Maine Freedom of Access Act request for all emails between the City of Belfast and Nordic Aquafarms CEO Erik Heim for January 1, 2017 through June 25, 2018, and on July 31, I requested all emails between the City and Deloitte, a global consulting company hired by the City to report on the financial viability and environmental sustainability of Nordic's plans to build one of the world's biggest salmon farms in Belfast.

The emails are mostly between Heim, City Manager Joseph Slocum and Economic Development Director Thomas Kittredge. Some of the emails discuss Belfast opposition to Nordic, but initially Heim and Slocum agree that opposition is minimal, and everything seems fine until March 26, 2018.

Then things start to heat up. In a March 26 email to Heim, Slocum, who seems to be feeling pressure from Nordic opponents, writes: "Perhaps it would be a good idea for the City to hire an independent consultant in Norway to attest to financial issues." Then there's nothing for four days.

Then on March 30 at 1:18 a.m. Norway time (7:18 p.m. March 29 in Belfast), Heim received an email from Kittredge requesting Nordic financial records and links to news articles on Nordic's "capital raises."

Fourteen hours later, March 30 at 9:21 a.m. Belfast time, Heim sends a long email with 15 bullet points to Slocum and Kittredge. The email expresses concern over requests for more financial information. "We are somewhat surprised by the fact that the city is asking for financial records and documentation of investment activity at this late stage, particularly with no good explanation of what is behind this. We have been told that resistance is limited to a few people, so why this move now?"

Bullet #1: "Why is this issue coming up now after signing of the land property agreements and our investment of several hundred thousand dollars so far?"

Bullet #14: "...we need to consider if proceeding in Belfast involves us being dragged into a public financial due diligence process...If local resistance is being turned against us as a company, then we are forced to do a new assessment of the Belfast track."

Bullet #15: "It is important to clarify expectations now, before we proceed with further investments in Belfast."

Nordic's suspicions were well founded. Opposition in Belfast was mounting. A budding opposition was raising the prospect of Nordic building the fish farm and then selling it. And in the face of requests for more financial information, Nordic was threatening to pull out of a possible \$500 million investment - a project the size of Bath Iron Works that would likely yield millions of dollars a year in tax revenue and perhaps relieve pressure from Belfast homeowners who have faced steady property tax increases.

At 12:16 p.m. Slocum replies. "I just got in the office, as I had to be elsewhere this morning.

We would like to talk with you today if possible. Can you call us sometime after 1:30pm our time today?"

At 12:33 Heim replies, "I can call you at 1:30. Let me know if this is OK." At 12:40 Slocum replies: "Yes 1:30 pm our time will be perfect." End of email thread.

At 2:14 p.m., 44 minutes after the agreed-upon time for the phone call, Heim sent Slocum and Kittredge contact information for Anders Gjendemsjo, whom Heim describes as "practice leader for Deloitte Seafood in Norway." Heim assures Slocum and Kittredge that "Deloitte is highly professional and will give an objective assessment of our company."

But there are problems.

On July 30, Slocum told me Nordic played no role in the hiring of Deloitte, which had previously done auditing work for Nordic's Denmark operations and had written positively about Nordic in at least two prior reports.

Then Slocum called me back hours later and said that Nordic CEO Erik Heim had in fact suggested Deloitte, and a particular person at Deloitte, but that was after he, Slocum, had already decided on Deloitte.

So, on March 26 Slocum raises with Heim the idea of hiring a consultant, and on March 30, Heim suggests Deloitte - after Slocum had, according to Slocum, already chosen Deloitte.

On July 30 and August 13, Slocum told me he looked around for a consulting company and found Deloitte. "And so I did ask Erik, because I saw him," Slocum told me August 13. "I said, 'Do you know anybody over there?' And he sent me the contact information. I called him, I saw him and said, 'I'm looking at these people; they look pretty good to me; do you have a contact there?'"

Well, we know Slocum didn't call Heim, because Slocum told me August 13 he couldn't make international calls, and the emails support that. And on August 13, Slocum twice said he saw Heim and asked him about Deloitte.

But the scores of emails have many references to various Heim visits to Maine - there are many exchanges about schedules, weather, delays and other travel-related issues. There are references to Heim visits to Maine in January and February. And there is an email exchange March 22, but there is no mention in any email of any visit between March 26 and March 30. So how did Slocum see Heim between March 26 and March 30? Was Heim in Maine between March 26 and March 30? There is no indication in the emails that he was. Phone calls placed to Slocum and Heim on the afternoon of August 13 were not returned by press time August 14.

But there are various emails, cited above, that refer to a phone call to be placed by Heim to Slocum at 1:30 p.m. on March 30, at a time when Nordic was essentially threatening to pull out of Belfast. And 44 minutes later Heim sent Slocum a Deloitte contact.

On May 4, Slocum sent Heim a copy of his April 11 introductory email to Deloitte, which outlined what Belfast wanted in the report it was seeking. Slocum sent this to the subject of the report

Belfast was seeking. In the email to Heim, Slocum writes: "I am confident we will get positive feedback from them." Heim suggested Deloitte. Deloitte had done work for Nordic. Deloitte had on at least two occasions written positively about Nordic. And Slocum gave Heim information on what Deloitte would be looking for. Yes, I too would be confident of getting positive feedback. Who wouldn't?

The Nordic Emails

Publication date: August 31, 2018

On March 26, 2018, Nordic Aquafarms CEO Erik Heim sent a long email to Belfast City Manager Joseph Slocum and Belfast Economic Development Director Thomas Kittredge. In the email Heim repeatedly expresses concern about the level of Belfast opposition to Nordic's plans to build in Belfast one of the biggest industrial salmon farms in the world. Heim hints that perhaps the level of that opposition has been downplayed to him.

"I would like an open and transparent communication on this with you," Heim writes. "...I want to make sure that there is still strong support in the community as we continue to increase our investment in this project."

In emails obtained under the Maine Freedom of Access Act (FOAA), Heim repeatedly expresses concern about opposition to Nordic's Belfast plans and about the accuracy of the city's portrayal of the opposition.

Were city officials misleading Heim about the extent of public opposition? Were they leading Nordic down a garden path? Would Nordic have already left Belfast if city officials had accurately portrayed opposition strength?

Slocum to Heim February 6: "People are generally positive." March 26, referring to opposition: "It is my opinion we are hearing from the minority and not the majority."

On April 17 there was a city council meeting at which the council made a zoning change necessary for Nordic's plans to proceed. But the meeting was contentious. Scores of project opponents packed council chambers and an adjoining anteroom and lined up by the dozen to urge the council to slow down. Project supporters were few.

Two days later, on April 19, Slocum emails Heim. Slocum touts the virtues of transparency, but two pages of a seven-page April 19 email exchange, which included Kittredge and the Belfast planning office's Wayne Marshall and Sadie Lloyd, were not released under the FOAA request. Two emails from Slocum contain no text except the words "Quoted text hidden," and an attached letter from Heim was withheld.

What's in the two pages?

Heim may have been getting an inaccurate picture of the opposition, but in the April 19 email exchange the tone starts to change from chummy-chummy to concern on both sides. And the email paints a picture of a city government contorting itself for Nordic.

Slocum: "We have committed huge amounts of staff time, incurred significant legal costs, intervened with critical partners and governmental agencies, made extended financial commitments and shouldered the daily burden of championing your proposal to our citizens..."

"The city, in less than 4 weeks, received 143 letters and numerous personal pleas calling for the zoning process to slow down...In the face of this outpouring of concern, the Council nevertheless again moved forward, at your request...I can not think of a community anywhere that has done so much, in so short a time, to advance a project..."

A community? It seems the community is opposed to the project but the City Council is barreling ahead anyway.

Later in the email: "Staff can be drafters and advocates of proposed changes in policy and regulation – even when the amendments are proposed to advance the interest of an individual developer."

The email begs the question: For whom is the city council working, Nordic or Belfast? And the last passage dovetails with the city council's April 17 decision to bypass the Belfast Planning Board on its way to changing zoning. It also meshes with the city council and city administration's vigorous efforts to permanently remove the planning board from such processes in the future, thus avoiding future lawsuits if and when the city council again decides to shunt aside the planning board and kick Belfast citizenry to the curb.

All of which makes a mockery of assurances made to me by Belfast Mayor Samantha Paradis that the planning board is the best venue for judging the merits of the Nordic proposal.

But the April 19 email does little to ease Heim's apprehension about public approval. The next day Heim emails Slocum.

"I have asked a number of times if this project is right for Belfast, and I have been assured it is. We have no wish to impose ourselves on a community – I hope that our communication has been clear here from the start...But if this overall project is likely to become entangled in local conflict and lots of new limitations all over the place then we need to have a good discussion on this...We must be confident that there is local majority support."

There is little basis for such confidence. A lawsuit has been filed challenging the city council's process – or lack thereof – in approving the April 17 zoning change, and at an August 22 city council meeting, citizen after citizen sharply criticized a \$14,000 report commissioned by the city to evaluate Nordic's plan. No one rose to defend the report or the Nordic project.

There is a palpable feeling that opposition to Nordic is gaining ground, and that an increasingly desperate Nordic, city government and city administration are scrambling to ram through the Nordic project before the opposition gains the upper hand. In her race for the legislature, candidate Jan Dodge has knocked on 1,765 Waldo County doors, and she says one in six or seven – or about 250 – prospective voters saw Nordic as an important or very important issue, and of those, 80% were against the project.

This begs another question: Has Nordic's Belfast investment now become so extensive that its

concerns about not being welcome by the citizenry have been shoved to the back seat?

I don't know, but there's a not-so-fine line between a city government working to attract new business, and a city government committing "huge amounts of staff time," incurring "significant legal costs," ignoring and downplaying widespread citizen opinion, racing through important decisions such as zoning changes despite citizen uproar, and running roughshod over carefully constructed and well established democratic processes. And clearly that line has been crossed.

The Most Toxic Food in the World?

Publication date: September 27, 2018

Fredrikstad, Norway — Kurt Oddekalv is a big, burly man. Oddekalv founded the Green Warriors, a Norwegian environmental group that is the bane of Norway's fish farm industry.

"I've been fighting them for 30 years," Oddekalv said as we drove through a rough, windswept North Atlantic landscape to a sea-based salmon farm in Rong, Norway, about an hour northwest of Bergen, Norway's second-biggest city.

"They fooled me for the first five years, but not since," Oddekalv said with a wry smile. Oddekalv fielded several calls as we rode. It was a busy day. Norway's big and politically powerful fish-farm industry was again using a chemical it had agreed to stop using after a relentless campaign spearheaded by Oddekalv.

In Rong's modest harbor, we boarded a small boat and rode in cold, driving rain past a breakwater to the multi-pen operation. It was hard to believe the pens held 100,000 fish each. In Belfast, Nordic would produce 33 million pounds of salmon a year. At eight pounds per fish — Nordic's figure — that's 4,125,000 fish, more than 41 of the Rong pens.

At the operation's small visitor center there were vials representing what makes up the facility's fishmeal, and it's heavy on soybeans. Seventy percent is the industry average. Oddekalv said the soy is laced with the insecticide Diflubenzuron, a carcinogen that kills crustaceans, and that a German study found the chemical in breast milk four hours after consumption of farm salmon.

According to Oddekalv, the European Union allows 10 times more mercury in salmon than in chicken, because of presumed lower salmon consumption and Norwegian pressure. Oddekalv also cited high levels of cadmium, another known carcinogen, in farm fish.

American scientist Dr. Claudette Bethune was fired from the Norwegian Institute for Nutrition and Seafood Safety (NIFES) in 2003 for her work on levels of dioxins and PCB's in Norwegian farmed salmon that exceed World Health Organization tolerable daily intakes. Bethune also came under fire for revealing a Russian ban on Norwegian farmed salmon based on high cadmium levels.

Back in his Bergen office, Oddekalv said the real problem is ethoxiquin, a Monsanto-invented fire retardant fed to the small forage fish that make up fishmeal to reduce fire risk in transit. As the forage fish climb the food chain their toxins concentrate, and the toxins metabolize slowly in farm salmon, which are even fattier than wild salmon. Oddekalv estimates that 70 percent of farm fish toxins originate in fish feed, "and they're always saying they're going to improve the feed."

"You take all of that together, and you have the most toxic food in the world," Oddekalv said.

Two days later I visited Professor Are Nyland in the cramped University of Bergen office he has occupied for 30 years. Bergen's seemingly endless rain pelted his office window. Nyland said there is always the possibility of bacteria, viruses and parasites in fish farms, even land-based farms. And if there is a power failure in a land-based farm, Nyland said, carbon dioxide levels will increase rapidly and all fish will die "within a few minutes...20 minutes, maybe less." Nyland went on to say insects bearing minute plastic particles can get into land-based fish farms and disrupt fish hormones.

Nyland said any fish farm, sea-based or land-based, should be located away from human populations. "If it is located near a beach or a popular fishing place, I would say no." I told Nyland that in Belfast, Nordic Aquafarms wanted to cut down 40 acres of woods through which runs a hiking trail. He smiled. "Well, then I would say no," he said.

From Bergen I traveled to Fredrikstad, where Nordic is building a land-based salmon operation in an existing industrial park that, according to Norwegian journalist and Nordic plant neighbor Haakon Strang, was decades ago foisted on a working-class neighborhood by a corrupt local government.

Having failed to reach Nordic CEO Erik Heim by phone, I tracked him down at his office across the street from the Nordic construction site. I asked Heim whether he had read my last column on Nordic, in which I presented evidence that a large majority of Belfast and Waldo County residents oppose Nordic's Belfast plans. Heim said he hadn't read the column.

This strains credulity. Heim personally replied in print to my first Nordic column, his wife responded in print to my third Nordic column, and Heim had an Aug. 27 Bangor Daily News op-ed that referred to an Aug. 16 Bangor Daily News op-ed by me.

I asked Heim whether Nordic was still committed to staying out of communities where it was not wanted by the citizenry. "In the end, we're going to have a permitting process, and people will have a chance to speak," Heim said. In other words, no.

Heim said it was "impossible for bacteria to get out" of Nordic's planned system, and then later said such things are always possible. This follows Nordic initially saying its operation wouldn't pollute and then saying it would pollute only a little. And Nordic saying fish couldn't escape from its facility, and then saying it's almost impossible. And Nordic saying its Belfast discharge pipe would be 1.5 miles long, then one mile, then one kilometer (.62 miles).

I asked Heim whether he suggested Deloitte, a global consulting firm, to Belfast City Manager Joe Slocum to write a \$14,000 report on Nordic designed to placate opponents of Nordic's Belfast plans.

Heim said there is a "whole range of consultants that do this kind of thing...I gave Joe a list of companies that do this kind of work." That directly contradicts Slocum's repeated assertions that he found Deloitte all by himself, before he ever spoke with Heim about Deloitte, and that there were few companies able to do such a report and thus it was no coincidence that he, Slocum, found one that had worked for Nordic.

The two accounts don't jibe. Something here is seriously amiss.

Lawrence Reichard is a first-place Maine Press Association winner, freelance writer and activist who lives in Belfast.

24 Hours in Denmark

Publication date: October 12, 2018

I was getting worried. I had been procrastinating about getting lodging in the far northwest corner of Denmark, where I was planning to look at the Denmark operations of Nordic Aquafarms, a Norwegian company that wants to build in Belfast one of the biggest industrial salmon farms in the world.

I didn't think it would be hard to get lodging in that remote area, the summer season being well over. I didn't know the area had become a surfing destination called "Cold Hawai'i." The first two or three places I tried were booked, and I was forced to start looking out of town, in the countryside, though I had no transportation.

I finally got a place, in the small village of Hordum. But I didn't know how I would get around.

Fortunately the Airbnb was only two kilometers from a flag train stop, and Bente, my hostess, picked me up. She was a jovial, wily woman with a wry smile. When we got to her old, charming farmhouse, she discovered I had no food and drove me right back to town to get some.

She asked me what I was doing there, and I told her. She said she knew a mechanic who might rent me a car, and that her nephew used to work at Nordic's Maximus fish farm. I said I'd love to talk with both of them.

To my considerable relief, I got the car. And I spoke with Bente's nephew by phone.

The next morning I set out to make a big circle, all on remote, lightly traveled roads. Perfect. West to the North Sea, and north through Denmark's first national park — a barren, windswept place — to Hanstholm, location of Nordic's Sashimi Royal fish farm and its Denmark offices.

Sashimi is located right in the working, industrial harbor of Hanstholm, right beneath the biggest windmills I had ever seen. Nordic CEO Erik Heim had told me the week before in his Fredrikstad, Norway, office that I was welcome to contact Claus Rom, Nordic's Denmark chief, but I received no response to multiple emails, and when I went to Rom's office, I was told to leave and not take any photos.

I drove on to Nordic's remote Maximus plant, where Nordic produces small fish, known as smolt, to feed the Sashimi Royal plant, where the smolt are raised to maturity. Maximus is small, nondescript and hard to find. I saw nothing particularly interesting, so I took a few photos and pushed on to the home of Bente's nephew.

Lars Hansen, not his real name, is an immediately likeable Danish 14-year-old. He is eager, enthusiastic and energetic, and his broad grin is infectious. He lives with his family in a modest, comfortable middle class home in a small village. Sitting at his dining room table, Lars told me he went to New York for six days, for a family wedding. He loved New York, and couldn't wait to go back. He took the Maximus job to save for a return trip.

Lars is like any other happy kid — only he may soon be the center of a Danish government inquiry and possible full-blown investigation into possible labor and child labor law violations at Nordic Aquafarms' Maximus fish plant.

Lars worked at the Maximus plant for six or seven months beginning in late 2017. His duties included cleaning out fish tanks, for which he used a DuPont chemical called Virkon S. Lars told me that when working with Virkon S, he was given gloves and a mask, but no protective eyewear.

Lars' duties also included suctioning up uneaten fish food from the bottom of fish tanks. To do this, he used a suction device. But the device wasn't fully automated. To initiate suction he sucked on a tube with his mouth, as one would to syphon gas from a gas tank — only this was into a fish tank that contained fish feces. Lars asked management about making this fully automated and was told it would disturb the fish.

Lars said that in his time at Maximus, the facility lost five to seven complete fish tanks to disease, and he said Maximus lost on average one of every 25 tanks. On Sept. 19 in his Norway office, Erik Heim told me Maximus had never had a problem with disease.

I thanked Lars for his time and drove my rental car back to my lodging in the next village. I emailed Claudette Bethune, an American scientist who was fired from her Norwegian government job for her work on high levels of toxins in fish-farm salmon. I asked her about Virkon S and she sent me copies of official DuPont disclosures. The document said Virkon S is dangerous to eyes.

So I called AT (Arbejdstilsynet), the Danish equivalent of the U.S. Occupational Safety and Health Administration (OSHA). I was told that under Danish law, workers must use protective eyewear when handling Virkon S, and it is illegal for a 14-year-old to handle Virkon S under any circumstances. As a result of my inquiry, AT is opening an official inquiry and possible full-blown investigation into Nordic Aquafarms for possible labor and child labor law violations.

It had been a long day. I was tired, and it was a relief to return the rental car and no longer worry about crashing it on unfamiliar turf. I walked back to my old, charming farmstead. I marveled at the constant wind and admired how the constant wind from the west had bent to the east what few trees there were about. I admired the big windmills that dotted the landscape everywhere I turned.

And when I got home, Bente's husband practically forced on me various cans of beer from the remote and wildly dramatic Faroe Islands, a Danish territory in the North Sea he had recently visited. I didn't protest, but I couldn't stop thinking about 14-year-old Lars.

Two Hours with Bent Urup

Publication date: October 26, 2018

On September 25, I awoke in Odense, Denmark, home of famed Danish storyteller Hans Christian Andersen. I walked to the train station and took a half-hour train to Fredericia, where I was picked up by a daughter of Bent Urup.

Bent Urup is a gregarious and energetic man, and he loves to talk about his work. He is perhaps the world's foremost expert on Recirculating Aquaculture Systems (RAS), which Nordic Aquafarms plans to use for its proposed Belfast industrial fish farm. Urup was the first to develop salt-water RAS, and he invented RAS 2020, which he says is the world's most efficient and cost-effective RAS System.

Urup designed and built Maximus, a Danish smolt farm he owned for eight years before selling it in October 2017 to a group of investors in which Nordic Aquafarms had a 50% share. Urup designed and developed Sashimi Royal, a Denmark fish farm he then sold to a group of investors in which Nordic Aquafarms had a 62.5% share. And in 2015-2017 Urup was CEO and Chief Technology Officer of Sashimi Royal, which uses Urup's RAS 2020 system.

Urup has designed more than 50 RAS systems, and has built RAS 2020 systems in Switzerland, Australia, and Denmark. Time Magazine named Urup's bluefin tuna project the second-best invention of 2009.

Meeting in his Fredericia office, Urup painted a picture of an RAS industry - and a Nordic Aquafarms - in disarray and suffering from poor management.

Urup believes Nordic's Maximus plant is running at only 10 percent of capacity. I asked him why. "Because of management," he said. "You need the right people....Maximus is complicated to operate." Urup said Maximus is Sashimi Royal's only source of smolt and that Maximus production woes are limiting Sashimi's production to half its capacity.

"When you don't really feel you're in control, the typical reaction is...'we need to make protocols.' But the thing is if you put 20 tanks up and you did exactly the same trick, they will all behave differently, because of biological factors...The day you turn into working on a routine, on a fixed protocol, you're lost...As soon as you see something go wrong, it's too late - you can do nothing. You have to anticipate problems. It's about getting the right qualified people."

Like a former Maximus worker I interviewed in Denmark the next day, Urup said that Maximus has had problems with fish disease, something Nordic CEO Erik Heim denied to me in his Norway office September 19, and which Nordic Director of Operations Marianne Naess denied in an October 18 Republican Journal op-ed. Naess's op-ed did not address allegations that a 14-year-old Maximus employee worked with Virkon S, a chemical children that young are not allowed to handle under Danish law. Those allegations appear consistent with Urup's concerns about Maximus management.

"The management (operation) of Maximus is very difficult," Urup told me, "and if you don't do

"The management (operation) of Maximus is very difficult," Urup told me, "and if you don't do it right, you will have bacteria growing." Urup said Maximus has in the past treated its fish disease problem with antibiotics.

But Nordic's problems in Belfast may go far beyond poor management and fish disease.

Bent Urup obtained a patent for his RAS 2020 system, and in 2015 he sold it to Veolia, a French company. But while Urup's RAS 2020 patent was still pending, Inter Aqua, a Danish company, built a fish farm in Australia that infringed on Urup's pending patent. Veolia sued Inter Aqua and won its suit in June 2018. The next month Inter Aqua went bankrupt.

And now Urup believes Nordic may do in Belfast what Inter Aqua did in Australia.

"They (Nordic Aquafarms) have never built anything....They were never involved in the construction (of Sashimi Royal)," Urup said. "They were just investors. They came to board meetings. That's the only involvement they had. But they (Nordic Aquafarms) are building one (Belfast) and again it's the same story. You see history repeating itself. People have a half-understanding, then they become dangerous, because then they think they know enough. Now they are trying to develop their own system, which is a modification (of RAS 2020), but I don't think they can do it, because it's compromising the patent, as I see it."

Indeed Nordic Aquafarms had intended to get its RAS technology from Inter Aqua, and when Inter Aqua went bankrupt, Nordic promptly hired six former Inter Aqua employees.

"What I have been told is that they (Nordic Aquafarms) try to build it longer," Bent Urup said of Nordic's Belfast design. "It's an oval, and that's the way they try to move around Veolia...but...the RAS 2020 patent is not about whether it's oval. It's the flow-setting device, and if you don't have that, you can't make the salmon grow efficiently."

At this point, Urup launched into a story, as he loves to do. "In 2014 there came an Irish delegation to Danish Salmon, where I for a period of time was CEO. I showed them around...I explained to them about the new RAS 2020, which was coming up, and they were interested.

"And the guy who was showing these people around was a guy called Ivar Warrer-Hansen, and I didn't know that he was part of Inter Aqua; but the people were very interested and I said, well, go and talk with Veolia, they are the one you need for supplying it.

"But in May he (Warrer-Hansen) put an article in Fish Farmer (magazine), in May 2015, around a new concept they, Inter Aqua, were developing, and that was clearly a copy of what I had showed him...so clearly the reason why they came was a kind of sales trip; he was trying to sell a system, a conventional system, but the client he brought was clearly so interested in the RAS 2020, so they want something similar, so they tried to copy it..."

According to Warrer-Hansen's LinkedIn profile, he has been a senior Nordic Aquafarms RAS advisor since September 2018.

Looking ahead to Nordic's Belfast plans, I asked Urup whether Veolia's lawyers were sharpening their pencils, in anticipation of a patent-infringement fight against Nordic. "I believe so, yes," Urup said.

When we were done talking, we had a big lunch of typical Danish smorrebrod, and Urup's wife took me back to the train station for my four-hour ride to Thisted. And so ended a memorable two hours.

One Very Toxic Stew

Publication date: December 17, 2018

On October 26, 2018, I published a Bricks and Mortars column about Norwegian farm salmon entitled "The Most Toxic Food in the World?" The column was based on my conversations and interviews with Norwegian environmental activists, scientists and professors during my two weeks in Norway from September 11, 2018 to September 25, 2018.

That column's title may be alarming, but the problem may be even worse than I thought.

On September 25, 2018, on my way from Fredrikstad, Norway to Odense, Denmark, I stopped off in Copenhagen, Denmark, where, between buses, I had a beer with a Danish friend. I had lived in Denmark for a year as an exchange student and had learned Danish, and I hadn't been in Denmark in 20 years. It was great to be back and to order a beer in Danish.

I asked my friend whether he could get a sample of the yellowtail kingfish produced by the Nordic Aquafarms land-based Sashimi Royal fish farm in Hanstholm, Denmark, and whether he could have it tested for toxins. He said he knew someone who owned a food business and could probably get the fish directly from Nordic Aquafarms, and he said he had a friend who worked in a laboratory that could probably test the fish for toxins. He said he would find out whether it could be done and would let me know.

I gave my friend funds for the laboratory test and told him I would give him more funds if he needed them, and I continued on my way to the charming 13th-century city of Odense for the night. The next day I continued on to Fredericia, Denmark, where I interviewed perhaps the world's foremost expert on land-based fish farms, and then on to Thisted, where I interviewed a former Nordic Aquafarms employee who told me about alleged Nordic violations of Danish labor law and child labor law, all of which I wrote about in other Bricks and Mortars columns.

After I returned home to Belfast October 4, my Danish friend emailed me. He could get the yellowtail kingfish directly from Nordic Aquafarms and his friend's laboratory could run the toxins tests - we were all set.

I waited patiently, and sometimes not so patiently, as the project was delayed by a need to establish exactly what we wanted to test for, and by my friend's business travels.

On December 10, I finally got the laboratory test results and I forwarded them by email to Dr. Claudette Bethune, Associate Director of Clinical Development for Ionis Pharmaceuticals in Carlsbad, California. Dr. Bethune was a senior scientist at the Norwegian Institute for Nutrition and Seafood Safety from 2003 to 2006 and was pressured out of that position by Norway's powerful fish-farm industry after she wrote about high levels of toxins in farm fish.

The message sent by Bethune's experience at the hands of Norway's fish farm industry was not lost on the rest of Norway's scientific community. When I was in Norway, scientists were very reluctant to talk with me, and journalists told me scientists feared losing crucial research grants if they challenged industrial aquaculture, Norway's second-biggest industry after oil and gas.

Bethune's analysis of the test results paints a troubling picture of a yellowtail kingfish rife with

toxins.

According to Bethune, one official U.S. government serving of eight ounces of Nordic's yellowtail kingfish exceeds the European Union maximum mercury allowance for two days - for all food intake, for two days. According to the World Health Organization, mercury is "toxic to the central and peripheral nervous system."

For PCBs it's even worse. According to Bethune, one eight-ounce serving of yellowtail kingfish from Nordic's Sashimi Royal fish farm exceeds the European Union's maximum PCB allowance for a week - for all food intake for a week. According to the Mayo Clinic, "PCBs have been shown to cause adverse health effects, including potential cancers, and negative effects on the immune, nervous and endocrine systems."

And for pregnant women it's even worse than that. According to the Mayo Clinic, mercury "could harm your baby's developing nervous system" and PCBs "can be transferred from a mother to her unborn baby, increasing the risk of preterm delivery and low birthweight."

These test results portend even more problems for the salmon that would be produced in Nordic Aquafarms' proposed land-based fish farm in Belfast. Fat retains toxins more than other body parts - a higher fat content means higher toxin retention - and salmon is considerably fattier than yellowtail kingfish. According to livestrong.com, yellowtail has a fat content of 7%. And according to Kurt Oddekalv, Norway's most prominent environmental activist, wild salmon has a fat content of 7-14% and farm salmon's fat content runs 14-24%. Oddekalv estimates that 70% of the toxins found in farm fish come directly from their feed, which is largely pesticide-laced soy from Brazil.

And the problems don't end there. Fish with high toxin content produce fish feces with high toxin content. And even with its elaborate effluent discharge processing system, fish-feces residue from Nordic's proposed Belfast operation would make its way into Belfast Bay and surrounding waters, where pollution has already closed thousands of acres to shellfish harvesting, and where dredging for Nordic's effluent discharge pipe would churn up and disperse even more mercury.

According to Are Nylund, an aquaculture expert and 30-year professor of marine science at Norway's University of Bergen - and according to Nordic itself - Nordic's multi-layered discharge treatment system will not filter out all contaminants, and if Nordic's industrial fish-farm operation is approved and built, don't expect shellfish harvesting to resume in Belfast Bay anytime soon.

The Fredrikstad File

Publication date: March 3, 2019

On February 11, Nordic Aquafarms, a Norwegian company, announced plans to build a large land-based industrial fish farm in northern California. In announcing the move, Nordic issued a press release that rekindled the kind of credibility issues that have dogged Nordic's plans to build another big industrial salmon farm in Belfast, Maine.

The press release states: "Nordic Aquafarms is one of the premier investors and developers in land-based aquaculture internationally, with production facilities in Norway (Fredrikstad Seafood) and Denmark (Sashimi Royal and Maximus)..."

In reporting Nordic's announcement, local Humboldt County media repeated that Nordic Aquafarms has "active" facilities in Norway and Denmark.

But Nordic Aquafarms doesn't have an active production facility in Norway. As of March 3, the company's Fredrikstad, Norway plant is still under construction. It seems that Nordic may be trying to stave off one of the key arguments against its Belfast plans: that the company is too inexperienced to pull off such an ambitious project.

But there's more to the Fredrikstad story, and it's not flattering for Nordic. It raises more questions about Nordic's credibility and experience.

From September 18 to September 25 of last year, I was in Fredrikstad, Norway, where Nordic Aquafarms is building a land-based industrial salmon farm that, when completed, will be one fifth the size of the land-based salmon farm Nordic has proposed for Belfast.

Upon arriving in Fredrikstad and speaking with some locals, I was told that Nordic's Fredrikstad facility had experienced significant construction delays and was, like Nordic's Belfast project, well behind schedule. On September 19, I interviewed Nordic CEO Erik Heim in his Fredrikstad office, and I asked him about that.

Heim said construction of the Fredrikstad facility was on schedule and had not experienced any construction delays.

But I have since obtained copies of emails in which Heim discusses just such delays in the Fredrikstad construction project - which begs the question: Why did Heim tell me there had been no delays?

According to a Norwegian source, the delays may have been caused by one or more of Nordic's buildings sinking into the earth from their sheer weight. Indeed one of the Heim emails hints at geological problems. That email lays blame for the problem on Graakjaer, a Danish company contracted by Nordic to build the Fredrikstad plant.

But such a problem should have been anticipated by Nordic Aquafarms, according to a source in the Swedish firm Skanska, the world's fifth-largest construction company. The Skanska source said it would be incumbent on the builder, Nordic Aquafarms, and not the contractor, Graakjaer, to know about any possible problems with the project's subsurface.

It seems that Nordic may have relied excessively on geological information provided by the City of Fredrikstad, which, like the City of Belfast, may have cut corners in its eagerness to move the Nordic project forward. In Belfast, the city council illegally shunted aside the city's planning board in its haste to ram through zoning changes necessary for the Nordic project to proceed. The council was forced to go back and start again after a lawsuit was filed by Belfast residents living next to the proposed project.

And the City of Fredrikstad, like the City of Belfast and the Norwegian national government, has given Nordic sizable financial incentives. Such financial incentives have recently come under fire in the United States in the wake of Amazon's abrupt decision to walk away from more than \$2 billion in incentives in New York and Foxconn's curtailment and possible abandonment of a \$10 billion Wisconsin project after receiving \$3 billion in incentives.

But the Heim emails I obtained do little more than hint at the reasons for the months-long construction delays in Fredrikstad, so I again asked Nordic CEO Erik Heim about the delays, and the reason for them, in emails dated September 22 and December 20. In a September 23 email, Heim completely sidestepped my questions, and I have received no response to the December 20 email.

In one of the emails I obtained, Heim says the Fredrikstad contractor had spent "several months" on "omprosjektere," which can be translated to "redesigns." The emails hint at substantial difficulties with Graakjaer, the project's contractor, and one email pins blame for the delays squarely on Graakjaer. The emails seem to indicate that the conflict with Graakjaer stopped just short of the courthouse door. "The parties will not meet in court," states one Heim email. "The matter will be resolved by mediation, which will finish in a couple of weeks."

In another email Heim writes - according to Google Translate - that "the fundamentals on the buildings have been reprocessed." He goes on to say, "We do not want writings about the contractor, as we will deal professionally with the matter. Neither can anything end up in the media, as there have been some annoying writings earlier this year."

In another email the same day, Heim says Demokraten, a local Fredrikstad newspaper, "doesn't have the world's high star with us and the only thing it got right was the existence of the construction delay."

Soon after announcing its Belfast plans in February of last year, Nordic Aquafarms and the City of Belfast came under intense criticism for negotiating for months in secret and sealing a deal before there was any public input - and now similar concerns are being raised in California.

On February 11 of this year Nordic's California plans were announced at a meeting of the Humboldt Bay Harbor District, and according to Noah Oppenheim, executive director of the Pacific Coast Federation of Fishermen's Associations, "many attendees expressed concerns about the impacts of the proposal and the lack of transparency in the leasing approval process."

For more than a year Nordic Aquafarms has been telling Mainers it wants to be transparent, but the silence surrounding its construction delays in Fredrikstad and its closed-door dealings in Maine and California suggest the company is falling well short of that goal.

March 28, 2019

Senator Dill, Representative Hickman, Honorable Members of the Joint Standing Committee on Agriculture, Conservation and Forestry:

Greetings. As you know, on February 28, the Agriculture, Conservation and Forestry Committee held a public hearing on LD 620. At that hearing, I testified that I had, as a journalist, spoken with aquaculture experts who said that fish can escape from land-based fish farms and by doing so wreak havoc with wild-fish populations. I also said that Nordic Aquafarms, which wants to build a large land-based fish farm in Belfast, had itself said that such escapes were possible.

After I testified, Marianne Naess of Nordic Aquafarms testified, and when she finished her prepared remarks, Rep. Hickman asked Ms. Naess whether fish could escape from land-based fish farms. Naess said, unequivocally, "No."

As this answer by Ms. Naess directly contradicts what I said in my testimony, I think it's important to set the record straight, which I have done below in four parts.

1. The first part is a video of a Nordic Aquafarms public information meeting held May 9, 2018 at the University of Maine Hutchinson Center in Belfast. In the video I ask Nordic Aquafarms about the potential for fish escape, and Nordic Aquafarms CEO Erik Heim answers by saying, in part, that fish escape is indeed possible. The entire exchange takes less than two minutes and it can be found at 1:26:30 of the video. Here is the link:

<https://belfastme.swagit.com/play/05102018-530>

2. The second part is a statement, quoted below and made by Nordic Aquafarms in a Question and Answer section of the company's website. While Nordic's statement suggests that the risk of fish escape is unlikely, it nonetheless establishes that escape is possible, which conflicts with what Nordic's Marianne Naess stated in her testimony at the February 28 public hearing. From the Nordic Aquafarms website:

What is the risk of fish escape?

There is virtually no risk. We are farming Atlantic Salmon, in safe indoor systems. Land-based salmon farming is widely recognized as a solution to the problem of fish escape, due to its location on land. Bad weather and storms will not result in escape. A number of mechanical barriers in the indoor production modules prevents escape. For this reason, land-based operators internationally are allowed to work with a range of species that are not native to their location, as is the case with our Danish facility Sashimi Royal working with Yellowtail Kingfish. These species would normally be forbidden for ocean farming in many locations.

The Question and Answer part of the website can be found at:

http://www.nordicaquafarms.com/portfolio_page/belfast-questions-and-answers/

3. The following link is to a video of a February 21, 2018 Nordic Aquafarms public information meeting, also held at the University of Maine's Hutchinson Center in Belfast. At 12:00 minutes into the video, Nordic Aquafarms CEO Erik Heim states that it would be hard for fish to escape from

Nordic's proposed Belfast fish farm - but he does not rule out the possibility. (The segment in question lasts less than 30 seconds.)

<https://belfastme.swagit.com/play/02212018-1358>

4. The fourth part is the below excerpt from an email I received from Anders Karlsson-Drangsholt, an aquaculture expert with the Bellona Foundation in Oslo, Norway. This statement also suggests that fish escape may be unlikely, but it too establishes that fish escape is nonetheless possible.

“Fish can escape from land based facilities. Human errors and technical issues can happen, despite implemented security measures and automated systems. The advantage of land based systems are less potential for mechanical damage from operations in the net pens and easier installation of secondary barriers to escape. However, the statistics from Norway clearly show that fish also escape from land-based facilities. Land based facilities are the norm for producing small salmon for ongoing in the sea, and escape events occur from time to time in those facilities in Norway.

“Caveat: The Nordic Aquafarms technology may be different from the normal land based facilities used in Norway. If they don't have any substantial water outlet to a water body, the effect of any escape events will be negligible as escapees will simply die after exiting the facility.”

Given all this, the evidence is clear and unequivocal: fish can escape from land-based fish farms, and even Nordic Aquafarms admits this. Thus I urge you to not take at face value the statement made by Marianne Naees of Nordic Aquafarms at the February 28 public hearing on LD 620 to the effect that fish cannot escape from land-based fish farms.

And to recap my testimony, this is important because fish that escape from land-based fish farms can and in all likelihood will breed with wild fish and create offspring that are weaker and less able to survive the rigors of open water. They will also compete with wild fish for prime spawning grounds; they will in all likelihood destroy wild-fish eggs; and they can spread to wild fish disease that are unknown to wild fish and for which wild fish have little or no resistance.

Thank you very much for your time and attention. Please contact me if you have any questions.

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