



Submission

Submitter:	Pat Moran
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Application

Applicant:	SSE Generation Ireland Limited
Reg. No.:	P0606-04

See below for Submission details.

Attachments are displayed on the following page(s).

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Pat Moran

County Waterford

11/11/20

Ref- Licensing Staff E-mail sent 02/11/20 - Licence application P 0606-04

Dear Sir or Madam

Yes I would like to have my letter dated 09/09/20 on the Aquafact and Modelling reports submitted to the Licensing Section. As part of my submission to the Licence Review Application that is looking to continue the discharge of 1,000 tonnes of Sodium Hypochlorite from the power plant at Great Island

With more questions than answers around the Waters of Waterford estuary, has **MILK** given us at least part of the answer as to what has been causing the catastrophic and disastrous situation in Waterford Estuary for the SAC. NATURA Site, Shellfish Designated Waters and Shellfish Producers with all their losses?

Chlorine originated compounds e.g. Chlorine produce oxidants and Bromoform / Bromamines and their effect on Marine Life mainly Phytoplankton and Shellfish.

In MILK, compounds have been picked up long after Sodium Hypochlorite was used day's after and these compounds have the potential to cause serious health problems, hence the ceasing of all usage of Sodium Hypochlorite in the cleaning down of Milking Parlours.

The information is a very small amount of Sodium Hypochlorite used in cleaning down results in compounds being picked up days after it was used potentially very dangerous to human health where does that leave the use of 1.000 tonnes mixed with salt water and discharged into the environment? It was plain to see there was something seriously wrong in the Waterford Estuary and that this was being missed by the scientific community. Foam going around the estuary in streaks, strokes and big patches when the EPA were saying the only reason for the foam was the discharge being churned up when leaving the outfall, and is localized and not harmful, but the Foam **was** and **is** self, generating all around- the estuary during wind periods and when ships are travelling at speed. The residue from the Power Plant combined with Sodium Hypochlorite residue from other discharges has the estuary overloaded and is causing havoc long after Sodium Hypochlorite has been discharged in the case of Waterford Estuary producing deadly havoc as Shellfish producers are well aware.

Whereas the discharge from the Power Plant is not the cause of all Waterford Estuary's problems it is potentially part of the problem the EPA should adopt the precautionary principle as it cannot be shown there is no scientific doubt that the proposed continued discharge of 1,000 tonnes annually at the plant did not or will not have a negative impact on the conservation objectives of the SAC. NATURA Site and Shellfish Designated Waters.

I expect the Department of Agriculture, Food and the Marine made the DHPLG aware on the 12th August this year of the dangers of cleaning MILK production equipment with Sodium Hypochlorite. I also expect the Marine Institute, SFPA, BIM, Inland Fisheries Ireland and Irish Water have also been made aware and will they have concerns that are reflected within their submissions to this Licence?

The rest of my submission should all be irrelevant at this stage but maybe the EPA would like to grant the licence for the discharge and disregard the consequences for Ireland's Green image and the impact on the Irish economy?

1/ Foam – Plume. The theory appears to have come from somewhere (scientific?) that when the Foam (visual signs of massive Sodium Hypochlorite use) is done away with there is no Plume and no water problem in the Marine environment, shocking theory as we see now

2/ The Barnacle settlement, along with the small Mussel settlements in the lower harbour, this year. Is this the result of there being virtually no Sodium Hypochlorite used or discharged by the Power Plant from November – April? See the following pictures of Mussels on buoy at Woodstown.



3/ The previous Power Plant operated on 5 tonnes of Sodium Hypochlorite annually for its life time. How come with this so called modern plant being put forward as generating clean energy that it cannot operate on anything less than 1,000 tonnes of Sodium Hypochlorite a year? Clean Energy I Think Not!!!!

4/ Can the EIA or any part thereof that was used for the Planning Permission – EPA Licence at that time be used as part of the current Licence application. I would say not as the application and envisaged use at that time was 5 tonnes or less annually not the 1,000 tonnes envisaged now - **995 tonnes extra**.

5/ As regards 1,000 tonnes- previously mass emissions what did that mean and what was the strength previously? If the Power Plant say Sodium Hypochlorite use will stop when water temperature is below 10 degrees, will there then be a mass or mass emissions during the other months with no way of knowing when and how often? Just like before.

6/ From the documents I am unable to see where the In-combination with other Licences- discharges rule applies and at what forum it is discussed. As this Licence review application is basically looking for a Licence to continue what has been happening over the last 5 years where no In-combination rule – law applied I fail to see how a legal Licence can be given for 1,000 tonnes discharge a year when the legacy issues of the last 5 years to go with this Licence have not been addressed and there is no up to date EIA and no In-combination law adhered to.

7/ As regards water usage as with the rest around this Licence, from day one this does not add up? When water use does not add up potentially the Sodium Hypochlorite use of 1,000 tonnes does not add up 2,000 just like the last time 5 tonnes=1,300 tonnes. An EPA Licence is a marvellous piece of paper. A Licence to do anything.

Yours sincerely

Pat Moran

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Please find attached :

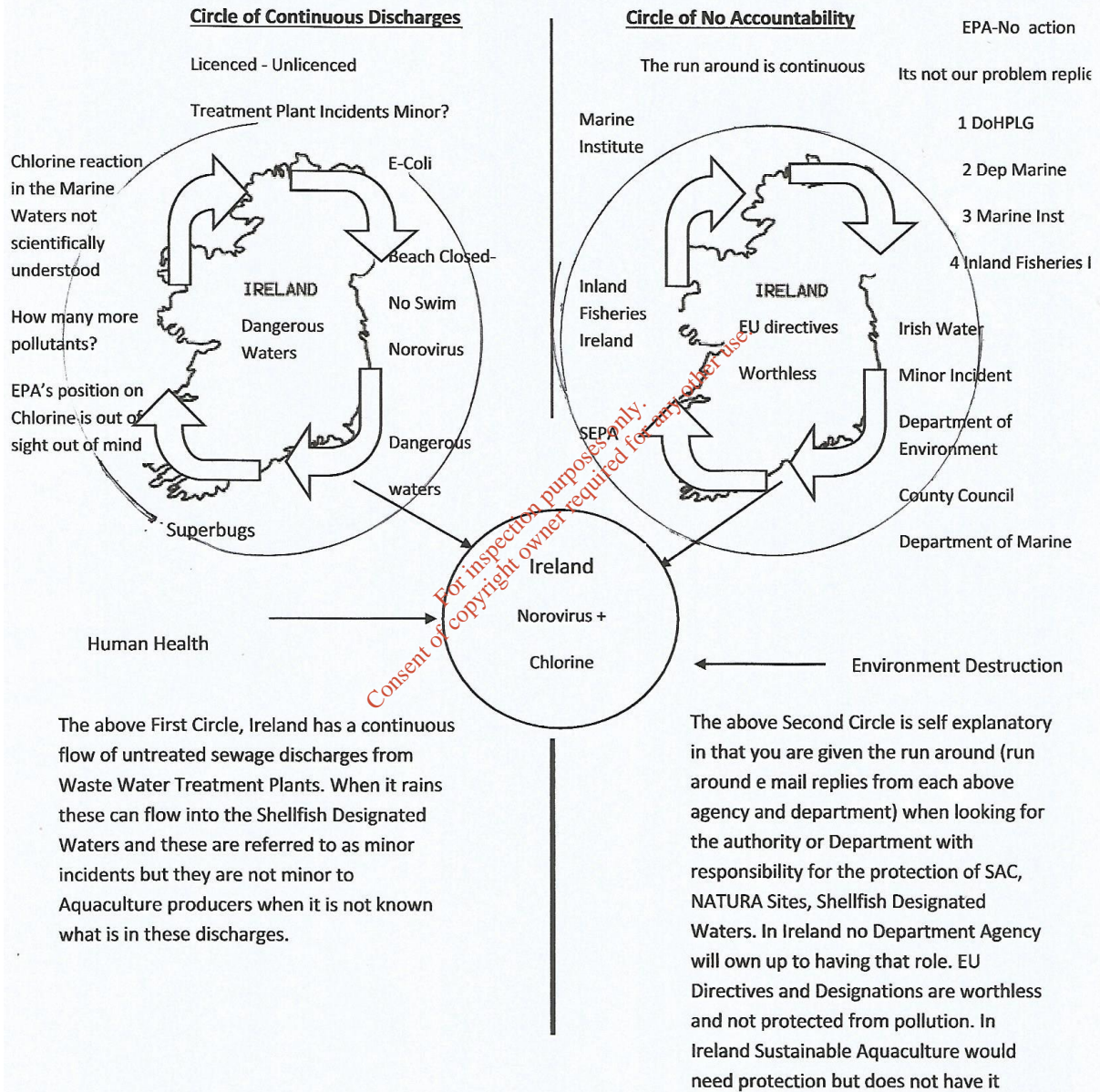
Fig1 Pollution Diagram sent to European Parliament sent 28/10/20

Fig 2 A letter sent to the Taoiseach, Members of Government and MEP's in Europe.

Regarding the pollution status in Waterford Estuary and the country in 2019.

Pollution - Continuous Circle of No Accountability= No Sustainable Aquaculture

When Pollution is not controlled and Eu directives are not complied with there is no hope of sustainable Aquaculture. An Irish solution to an Irish problem is a Circle that goes round and round and round with no accountability and no answers = No problem.



The EU has now a big problem when a Member State has no respect or regard for EU directives and when the EU cannot compel compliance then there can be no sustainable Aquaculture in Ireland along with no protection for EU designations, SAC, NATURA Sites and Shellfish Designated Waters

Fig1

Fig2

Pat Moran
County Waterford
Ireland

29/11/19

Dear Sir / Madam

Water in Ireland 2019 –“A National Emergency that no one is talking about. “

Norovirus-Superbugs-Cryptosporidium-E-Coli-Boil Notices-Warning Notices at beaches-Treatment Plants constantly overflowing sewage-Disinfectants-Sterilization Chemicals. Untreated Sewage discharges all the time-Pipes out to Sea-Sludge Hubs.

The use, abuse and treatment of Water in Ireland is “A Ticking Time Bomb”

The consequences of Ireland not implementing the Water Framework directive for the Special Areas of Conservation (SAC) and the shellfish designated waters in Waterford estuary are catastrophic with shellfish mortalities wild and farmed at shockingly sky high levels in 2019. The combined effect of all the residue from disinfectant, sterilization chemicals discharged into the river estuary has upset the natural balance.

Treatment Plants Do Not Work

At present with Ireland’s Treatment System if you could call it that. No Norovirus-Superbugs- E-Coli means there is a lot of disinfectant-sterilization chemicals being used in the treatment of sewage. This residue from sewage treatment combined with the residue from industry big and small has exposed and added to the existing problems for the estuary environment. The cure is worse than the disease, as regards Oyster farmers in Woodstown. Is the residue the cause of Oysters being poor in health for over 18 months or more in the designated growing waters and then they die in massive numbers like in 2019 when there is a bloom or virus?

This has resulted in no Mussels on the shore, Cockles on both sides of the estuary dead. There is foam going around the estuary, all the time. Seaweeds went from the shore above Duncannon 2018 all within the SAC. The frightening thing about Mussels is they either cannot spawn before they die, or the spawn cannot develop in the water and is **killed by the water.**

Sludge Hubs and discharge pipes from Treatment Plants put further out to sea? Are these steps solving the problem or are they masking a bigger problem and building up a disastrous problem for future generations? Discharge pipes from Treatment Plants put further out to sea? Is this another dangerous proposal? If Treatment Plants were working the water would be good exiting the pipes and there would be no reason to put the pipes far out to sea. The same applies to Sludge Hubs, Sludge Hubs are a result of mounting evidence that sewage either from Treatment Plants or directly discharged that has to be Disinfected-Sterilized by chemicals because of the danger to human health. Tests show the residue is having a serious impact on rivers, streams and estuaries and cannot be discharged.

What agencies were involved in the "Solution"- Sludge Hubs and Discharge Pipes far out to sea? The EPA, Marine Institute, Inland Fisheries Ireland, departments?

If ever there was a time to evoke the precautionary principle in Waterford estuary that is in the Shellfish designated waters Natura 2000 sites in Waterford estuary and a degree of uncertainty around how bad things are for all species and their habitat in the estuary along with uncertainty around upsetting the balance of the sea, the precautionary principle should apply to all discharges with residue until the facts are known.

Ireland did sign into the Water Framework directive SAC shellfish designated waters Natura 2000 along with precautionary principle for their protection.

It would be a poor reflection on the powers that be, and state agencies if it requires a court case or Europe to force Ireland to do the right thing. A severe lack of integrity and morals within government.

In Waterford estuary Ireland is in breach of all the precautionary principle needs to be evoked for all discharges.

The water environment battle started off 25 years ago "Up the rivers" Salmon and Eels and their habitats were sacrificed. The battle has now moved to the lower river estuaries and coastal bays- Shellfish-Aquaculture and the environment SAC are losing, sacrificed again. The final battle has now moved to the sea, the way things are going the sea will lose too. Pipes from treatment plants kilometres off the coast- human viruses out to sea, and as Oysters show, viruses can survive in a host in the sea. With disinfectant- sterilization residue discharged out to sea does this exacerbate problems? The game is up for Green Ireland (No Credibility).

Moral leadership is needed now, or did Ireland just sign up in Europe for the money?

The decision now for politicians is "An Ireland with water that is safe for our children and our grandchildren. I do not see this happening at present.

"Clean Water for our future"

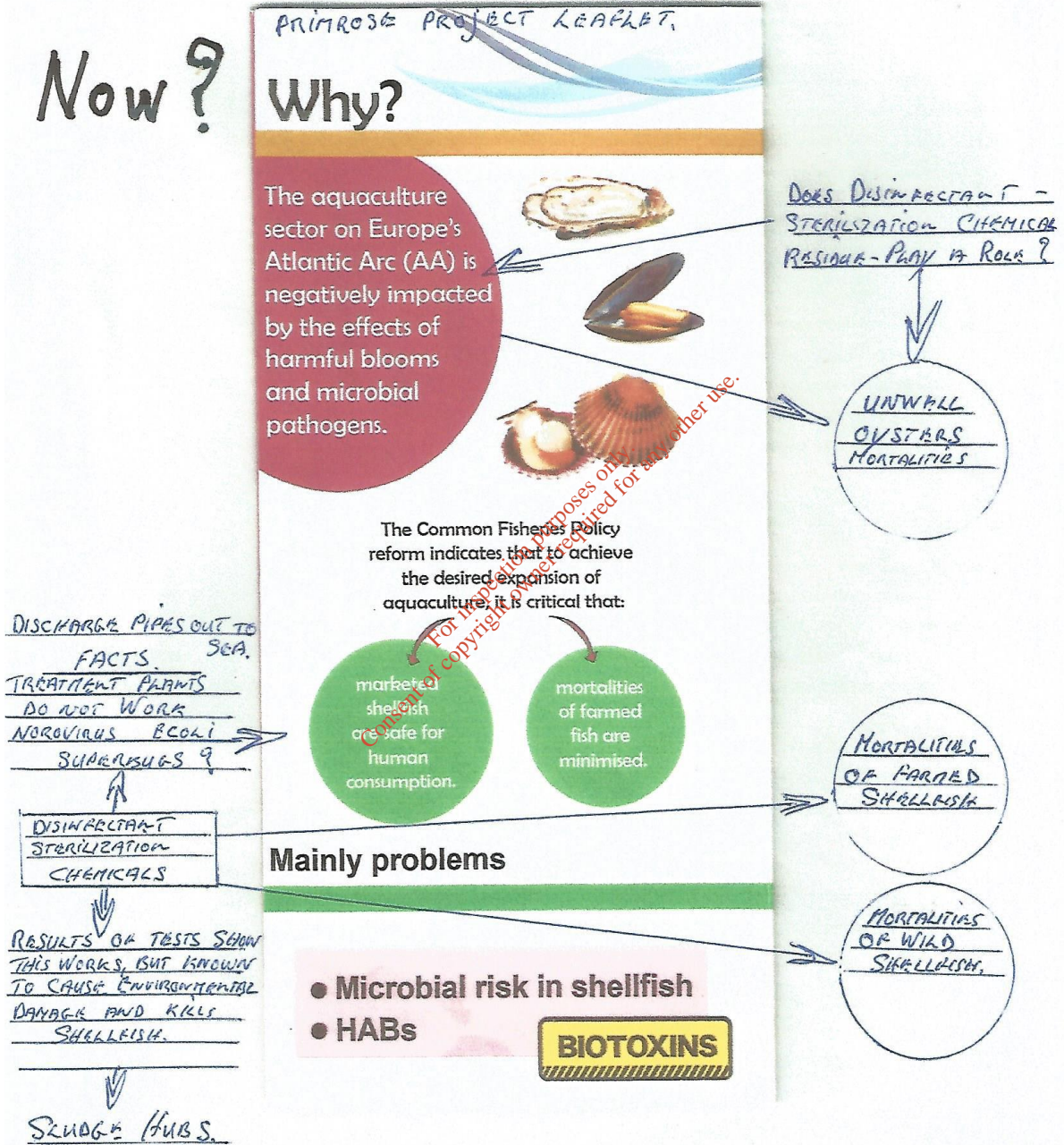
WATERFORD ESTUARY

THE PRECAUTIONARY PRINCIPLE SHOULD BE EVOKED FOR ALL DISCHARGES THAT COULD BE THE CAUSE OF ENVIRONMENTAL DAMAGE, TO THE S.P.C. - SHELLFISH DESIGNATED WATERS - NATURA SITES.

EPA - MARINA INSTITUTE - INLAND FISHERIES IRELAND - SHOULD ALL BE IN AGREEMENT

Now?

Why?



Q WHAT IS THE AMOUNT OF DISINFECTANT-STERILIZATION CHEMICALS USED IN IRELAND WATERFORD ESTUARY - DOWNGRADED - VALUELESS FOR SHELLFISH

10/09/20

REF- From a Stakeholder in Waterford Estuary

Response to the Aquafact Report and the Modelling Report compiled for the Great Island Power Plant-and also the in combination question as regards Duncannon Water Quality

Dear Sir or Madam

As regards the main findings of the survey and its conclusion, Aquafact having found little evidence of Mussels at its survey sites. Mussels are one of the species connected to Waterford estuary whose numbers are no longer able to support reproduction and sustain a healthy stock. Without a more detailed survey of the estuary which would include the in-combination factor and a baseline, the main findings and conclusion cannot stand. The only conclusion is the Precautionary Principle.

Mussels are well documented in the Waterford estuary, at least since the nineties when the Mussel Co-op started. When the South East Shellfish Co-op was going 700-1,000 tonnes were harvested annually from the Cheekpoint and Barrow beds, how many are alive on these beds now? How could this have been overlooked by the competent authorities, the scale and magnitude for the Natura site is massive. See map of beds (Fig 1) and potential bed areas identified at the time in the Cheekpoint and Barrow Bridge area. There are also beds below Athurstown and above, Duncannon. Before the Co-op, Mussels would have been fished by small boats and picked from the rocks, pillars and jetty (Power Station), and all along the intertidal area from half way down to low water rocks would have looked like the photograph of the Mark by Cheekpoint in 2015.

See the accompanying photos (Fig 2) of Mussels at the Mark by Cheekpoint in 2015 and again at the same place in 2020. What has happened during that time?

“Shellfish Designated Waters where Shellfish can longer live?”

The Modelling Report refers to Plume Travel and Coverage which is estimated to be 2 to 4.5km on Neap tides and the pictures in the report are of the Plume on the Eastern shore, I expect the 4.5km will at least double during Spring tides- Please find photographs (Fig 3) of the Plume on a calm day in August 2020 on the Flood tide as it heads out across the estuary and joins with the Plume that went down river on the Ebb tide coming back up. The conclusion should be drawn from the Modelling of a, continuous discharge and the photos showing that the travel and coverage is of the

entire estuary, 100% coverage of the estuary 100% of the time. What goes up must go down and what goes around comes around. No escape in Waterford estuary for any species from the Plume. The assumption that some fish can detect and swim around the Plume, does not stack up here in the estuary when the Plume coverage is 100%.

“What is in the Plume and how long does it last?”

There appears to be a grey area around Free Chlorine, Mass Emissions, 0.3mg/l the word Continuous and Tonnage all of which dictates the makeup of the Plume and its duration.

It appears that there can be a difference in the Chlorine compound and this can dictate the life span of whatever substance is formed during the mixing and discharge, Also is there a different chemical reaction when the compound is mixed with salt water as opposed to fresh water? Is free Chlorine concentration in the Cooling Water discharge and in the estuary the only substance after mixing or is there more substances formed that should be tested for at the discharge sites and in the estuary? Sometimes the foam at the discharge point is an Orangey-Brown colour and there is also an unnatural amount of Foam circulating around the river reformed by ships and the weather. What is the top layer?

Page 28-5.3- “As such the decay of the Chlorine compound in water is highly variable (example- T90 can vary from a few hours to a couple of days) and is dependent upon a range of factors”

A supplier’s website – “We will create customized formulas for specific requirements.”

Previous usage as per SSE information

2016 – 196 tonnes, 2017 – 140 tonnes, 2018 – 280 tonnes, 2019 – 1128 tonnes, 2020 – predicted 800 tonnes. No mention of 5 tonnes?

0.3mg/l and continuous can mean a lot of different things to the Environmental Protection Agency (EPA). 0.3mg/l meant 5 tonnes or less annually. I wonder what continuous means to the EPA?

5.2 refers to periods when the concentrations did reach 0.3mg/l but it does not say or could it say if this limit was breached as there was three discharge points- the Modelling is only referencing two and using one.

Mass emissions no mention in the Modelling.

It is hard to figure out what continuous means and how the 0.3mg/l was reached. Also how often the 0.3mg/l was reached. What does continuous and 0.3mg/l mean at 800 tonne usage at the present time.

The Modelling would have been run at the required tonnage amount? To have the discharge at 0.3mg/l continuously for the duration of the Modelling, but what was the mix and strength of the compound this would dictate the tonnage used to reach 0.3mg/l continuously this tonnage then would dictate the makeup of the Plume which would dictate the travel and duration of the Plume.

The Plume remains buoyant and close to the surface. Some species are more susceptible than others depending on the tonnage and mix of the compound the travel duration with estuary coverage of 100% all of the time if the in-combination Law was applied what then is the result for the top layer? The susceptible species have no chance spawn and spat that are in the top layer along with juvenile fish would be in trouble. Other species are looking at a slow extinction or at least their numbers are dropping and remaining low. Sound familiar? It sounds familiar, to me with Oysters. Is it foolishness to believe Oysters can be grown in Waterford estuary when Mussels can no longer re-produce, stay alive and grow? Who are the biggest fools the people who say and tell people that Shellfish can be grown in Waterford estuary or the people who try to grow them?

How many species are in that category of slow death that live in and pass through the estuary.

. It also should be noted the Aquafact survey was carried out during a break in discharge of Chlorine and the Ph was measured in January during the break.

Barnacles were removed from the survey data set.

Mussel beds not mentioned in the Aquafact report.

Page 52

Indirect effects on Benthic communities may accrue through a decrease in the abundance and diversity of planktonic prey species. No baseline.

Salmonids – in areas receiving continuously Chlorinated waste, free Chlorine concentrations should not exceed 0.1mg/l for a period of 30 minutes per day for Salmonids.

Can a conclusion be drawn without the in-combination inclusion, potentially there appears to be two connections to the discharge:

- 1/ The date of the Mussels photo in 2015
- 2/ There was a big Barnacle spat settlement this year 2020 like what used to happen with an odd Mussel spat see photos, was this as a result of virtually NO chlorine discharge from 12/11/19 to 07/04/20 when spawning and spat formation would be in the water (Fig 4).

It is no use in taking the discharge from the Power Plant in isolation as there are many other factors at play both in and around the estuary, sea and rivers please find attached a little list and snap shot of pollution incidences from Treatment Plants- List attached (Pollution Incidents Fig5).

There is also the question around the water quality at Duncannon?

From 2014 – 2020 the water quality at Duncannon was referred to as excellent by the EPA, from 2014 with no Treatment Plant in place, there will not be one for another few years. The discharges were very good; no E.coli this year after the EPA gave a licence to discharge. The E.coli results have been regularly high with no swimming notices at the beaches in the area. The E.coli levels have spiked in Woodstown at dangerously high levels on at least two occasions.

My question is over the years that the water quality around Duncannon was excellent was there some substance added to kill the E.coli to give an excellent water quality result?

The Aquafact Report makes reference to two installations on the Shannon Moneypoint and another with a Thermal Plume, is the Shannon in the same disastrous position as Waterford estuary, if there are no Mussels or heavy Barnacle spat fall? The Aquafact findings and conclusions cannot stand and the Shannon also requires an in depth in-combination survey.

Conclusion - An estuary in serious trouble

At this late stage there can be only one conclusion the Precautionary Principle given the scale and magnitude of the disaster for Bivalves and all species connected to Waterford estuary.

The estuary is the one connection that links species over vast distances. The estuary's importance for a vast number of species is incalculable but there is a good job being done around destroying it.

Mussels are one of the species connected to Waterford estuary whose numbers are no longer able to support reproduction and sustain a healthy stock.

Without an in depth survey- investigation with a baseline and the inclusion of the in-combination LAW, the Natura site, Shellfish Designated Waters, SAC designation should be removed from Waterford estuary, at the moment it is only a fraud on the Irish people and the EU to leave it in place. At the moment it is everyone's fault but it is nobody's fault. The problems in the estuary at the moment are disastrous this is what the Precautionary Principle is for and it should be evoked for all discharges immediately

“Elements of the project, alone or in combination with others, where the impacts are likely to be significant or where the scale and magnitude of impacts is not known. “

The LAW could not be made any plainer than that. Where are Ireland’s competent authorities now?

Department of Marine

Department of Environment

EPA

Marine Institute

Inland Fisheries Ireland

SFPA

Not to evoke the precautionary principle in the Waterford estuary should be seen as Gross Negligence – Cover Up bordering on Fraud by the Irish State against the Irish people and EU agreed directives and human rights.

If Ireland does not act now can they be trusted any more than Britain to honour any agreement signed up to in Europe?

Yours sincerely

Pat Moran - Stakeholder, Fisherman and Shellfish Grower (Oysters) in the polluted Shellfish Designated Waters of Waterford estuary.



2015

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2020

FIG 2

FIG 3





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FIG 4

POLLUTION INCIDENTS

Incident Reoccurrence - Dunmore East – INC1018918 – Rec-6 – 18/08/20
Incident Reoccurrence - Dunmore East – INC1018918 – Rec-5 – 17/08/20
Incident Reoccurrence - Tramore – INC1019002 18/08/20
Incident Reoccurrence - Dunmore East – INC1018918 – Rec-4 – 13/08/20
Incident Reoccurrence - Duncannon – INC1018127 – Rec-5 – 12/08/20
Incident Reoccurrence – Campile – INC1008615 – Rec-34 - 12/08/20
Incident Reoccurrence - Dunmore East – INC1018918 – Rec-3 – 30/07/20
Incident - Campile – INC1019169 – 20/07/20
Incident - Duncannon - INC1019130 – 13/07/20
Incident Reoccurrence - Duncannon – INC1018127 – Rec-3 – 01/07/20
Incident Reoccurrence – Campile – INC1008615 – Rec-33 – 01/07/20
Incident Reoccurrence - Dunmore East – INC1018918 – Rec-1 – 19/06/20 One?
Incident - Dunmore East – INC1018918 – 15/06/20
Incident - Dungarvan – INC1018941 – 17/06/20

Corrective Actions Taken

Storm Water Overflows (SWO) operating as designed and complies with Department of Housing, Planning and Local Government (DoEHLG) guidelines.

Preventative Actions to be Taken

None SWO is operating as designed and complies with DoEHLG guidelines.

Reckless endangerment to people's health that use the water and total disregard for the Natura Site, SAC, Shellfish designated waters and other estuary stakeholders.

FIG 5

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