Submission	
Submitter:	Mr. David Hugh-Jones
Submission Title:	Submission to the EPA by Atlantic Shellfish Ltd
Submission Reference No.:	S005889
Submission Received:	11 December 2019
Application	
Applicant:	Dairygold Co-Operative Society Ltd and TINE Ireland Ltd
Reg. No.:	P1103-01
See below for Submission details. Attachments are displayed on the following page(s).	

THIRD

Submission to the EPA by Atlantic Shellfish Ltd.

(David Hugh-Jones, MA, Dip. Agric. (Cantab.), MMBA, FRGS)

with reference to the

Application for an Industrial Emissions Licence

by

Dairygold Co-Operative Society Ltd. and TINE Ireland Ltd.

of Mogeely, Co. Cork P25Y996

Relevant Inspector: Orla Harrington

Environmental Licensing Programme
Office of Environmental Sustainability

EPA Licence Application Reference No: P1103-01

Continuing the objection to the discharge of the treated wastewater from the enlarged cheese-making facility of Dairygold Co-Op and TINE Ireland Ltd. at Mogeely, Co. Cork, which is proposed to be made to the North Channel of Cork Harbour through the Midleton WWTP Primary Discharge at Rathcoursey Point in the North Channel of Cork Harbour.

In response to the,

Unsolicited Additional Information relating to P1103-01 Industrial Emissions Licence Application - Dairygold Co-Operative Society Ltd and TINE Ireland Ltd dated 27 August 2019.

September 2019

Submitted December 2019

Contents

Background.

This submission was originally written in September 2019, in response to Dairygold's unsolicited additional information, submitted to the EPA on 27 August 2019, in which Dairygold quoted guidance from the 2014 EIA Directive (2011/92/EU) for the mandatory assessment of alternatives that the Directive requires of developers.

I felt, at that time, that there was so much more required by the EIA Directive than just the two requirements of parts of one Article and one Annex, quoted by the Developer, and on which we, at the environmental receiving end of developments such as this, depend so much, that it would be a useful exercise to use the aspirations of the Directive to throw more light on the acceptability of the Dairygold proposal, in the present day's climate of concern for the environment.

I was very much aided in this exercise by the thorough updating of the EIA Directive to the much amended new version of 2014/52/EU. Not only were the amendments significant, but the Commission also gave us a single document in which the failing wording was replaced by new and many entirely new sub-sections were added. This has given us an important insight into what the Commission is wanting the Directive to achieve.

On 15 November the EPA wrote to Dairygold to advise them that,

"*Having considered the information provided by the applicant, it has been determined that the activity constitutes a project to which the EIA Directive applies and is likely to give rise to significant effects on the environment by virtue of its nature, size and location,"*

and that the EPA would require an EIA Screening Determination.

We are still awaiting this, but it was in wondering whether my analysis had, in any way helped in this decision, that I discovered that, through some oversight, this third submission of ours had never, in fact, reached the EPA and been added to their page of third party submissions.

Although I appreciate that I may now be, to some extent, jumping the gun, as we wait to hear from the Developer, I am also conscious of the EPA's last deadline for making a decision on this Application by January 4th and I also believe, like the EPA, that the many other requirements of the revamped EIA Directive also need to be considered.

I shall also be shortly adding a further submission of work that we have been doing in the meantime to try to establish, with direct observations of the water movements from the Rathcoursey Point outfall, that this really must be about the most unsuitable location in Ireland to dispose of waste to the sea.

Consideration of Alternatives

This letter from the Developers can be found on:

http://www.epa.ie/licences/lic_eDMS/090151b280709cef.pdf

1. Mandatory **Assessment of Alternatives**

The EIA process which allows and encourages the public to have a say in protecting the environment in which they live, has been hard won in Ireland. The Directive (85/337/EEC of 27.06.1985, should have been transposed into Irish Law 3 years later. It took 4 judgements of the European Court of Justice from 1999 to 2011 and a fine of €1.5 million in Case C-279/11 on 19.12.12, before Ireland satisfied the Commission that it was complying with this important Directive.

This followed an even stiffer fine for France in Case C-121/07 with judgement on 09.12.08, with the second largest fine ever awarded against a country of €10 million.

Paragraph 77 of the judgement said:

*"77. As previously stated, where failure to comply with a judgment of the Court is likely to harm the environment **and endanger human health**, the protection of which is, indeed, one of the Community's environmental policy objectives, as is apparent from Article 174 EC, such a breach is of a particularly serious nature (see, to that effect, Commission v Greece, paragraph 94, and Commission v Spain, paragraph 57)".*

Thus it is worth considering this Directive in greater detail than just the two sub-sections on the Assessment of Alternatives, chosen by the Applicants, but firstly, Article 174 referred to in the judgement above:

1.1 Article 174

Of the Treaty Establishing the European Community (Nice consolidated version) - Part Three: Community policies - Title XIX: Environment - Article 174 - Article 130r - EC Treaty (Maastricht consolidated version)

These are the first two in the Article:

"1. Community policy on the environment shall contribute to pursuit of the following objectives:
- preserving, protecting and improving the quality of the environment,
- protecting human health……

*2. Community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority **be rectified at source** and that the **polluter should pay**".*

1.2 The EIA Directive 2011/92/EU as amended by Directive 2014/52/EU (informal consolidated version of the EIA)

This amendment to the original Directive can be found on:

https://ec.europa.eu/environment/eia/pdf/EIA_Directive_informal.pdf

The 2011 version of the Directive is left in black. I have taken out the deletions, but show all the new wording and clauses that were felt to be in need of upgrading by the Commission, in red, as the Commission has used. This gives us a deeper insight as to the meaning intended for the Directive and there is much more to be thought about in this Directive than the two subsections chosen by the Applicants for the Assessment of Alternatives (Article 5(1)(d) and Annex IV point 2). My own notes are added in blue.

1.2.1 Preamble.

Whereas:
(3) *(1) Directive 2011/92/EU of the European Parliament and of the Council(4) has harmonised the principles for the environmental impact assessment of projects by introducing minimum requirements, with regard to the type of projects subject to assessment, the main obligations of developers, the content of the assessment and the participation of the competent authorities and the public,* ***and it contributes to a high level of protection of the environment and human health.***

This picks up the first two purposes of Article 174 of the Treaty. Furthermore, human health has been shown to be paramount in these two objectives in the Waddenzee decision.

(11) *(28) The selection criteria laid down in Annex III to Directive 2011/92/EU, which are to be taken into account by the Member States in order to determine which projects are to be subject to environmental impact assessment on the basis of their significant effects on the environment, should be adapted and clarified. For instance, experience has shown that* ***projects using or affecting valuable resources, projects proposed for environmentally sensitive locations, or projects with potentially hazardous or irreversible effects are often likely to have significant effects on the environment.***

This application puts at risk resources seen as some of the most valuable in Cork Harbour:

1. East Ferry and Rostellan are described in the two Irish water videos as the most beautiful (for kayaking - and sailing with its Marina) and perfect wildlife spots of the Harbour for shore birds and otters.

2. The Bass Fishery of East Ferry is quoted in many international angling books.

3. The oyster fishery of the North Channel and Rostellan is not only one of the finest in Ireland, but in Europe, in terms of oyster growth rates and flesh quality and general tranquillity, and could well employ over 50 people. Cork Harbour was the 4th largest oyster fishery in Ireland in 1904 and has existed since at least the Iron Age kitchen middens were formed.

(12) *For projects which are subject to assessment, a certain minimal amount of information should be supplied, concerning the project and its effects.*

(31) The environmental impact assessment report to be provided by the developer for a project ***should include a description of reasonable alternatives studied by the developer which are relevant to that project****, including, as appropriate, an outline of the* ***likely evolution of the current state of the environment without implementation of the project (baseline scenario)****, as a means of improving the quality of the environmental impact assessment process and of allowing environmental considerations to be integrated at an early stage in the project's design.*

The Planning department of Cork County Council were clearly concerned on 08.12.17 regarding the subject matter of Alternatives:

"Having regard to the sensitivity of the proposed receiving waters, it is surprising there appears to have been no consideration to alternative options in EIS Section 3.3.2) to discharge the wastewater other than to Cork Harbour".

The three alternatives that appear to have been considered were:

1. Discharging further down the R. Kiltha or R. Womanagh catchments.

Clearly this was a non-starter for a discharge of this size and the WYG Report for Cork County Council of 2008 of upgrades needed for Castlemartyr and other East Cork towns, has already stated that the Kiltha River cannot take any more treated effluent. This was never an option and to go to some length now to calculate that the Kiltha/Womanagh flow will be over 20% Dairygold waste water, really cannot count as their best studied option.

2. Infiltration to groundwater.

They state that the surrounding lands are liable to flooding, but do not state if they looked into perhaps pumping to any higher ground. They could, after all, have surely found this within the 14km radius that they appear to be happy with for a pipeline.

On this score the County Council also made the point,

"*The applicant has failed to submit consideration to any other method of treatment/disposal, for example integrated constructed wetlands, with final discharge to the Kiltha river".*

The upgrade of the septic tank for Saleen Village (at Rostellan) is now, I understand, planned to be made by using an integrated constructed wetland (ICW) with the County Council's approval. There are at least two companies with over a decade of experience in this field and ICW's have been working now for over 20 years e.g. Dunhill, Co. Waterford.

I understand that approximately 1 hectare is needed for 1,000m3 of discharge, thus a site of as little as 4-5ha might suffice. This should not really be too difficult to find.

It is up the Developer to come up with solutions, as held in Art. 174 of the Treaty (above):

2. Community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community."

and that:

It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage ***should <u>as a priority</u> be rectified <u>at source</u>*** *and that* ***the polluter should pay".***

3. Coastal waters at Ballycotton were also "*proposed by the Council's Environment Officer in the Environment Report of 08/02/17".*

Why indeed not discharge to Ballycotton or Ballymacoda Bays at 8.6km and 8.7km in the Appropriate Assessment as compared to 13.6km to Rathcoursey? Does the hydrography really agree that the water there is *"not the open sea*"? Is there any land between them and the horizon? Does it have a 50-70 day long residence time, as shown for the North Channel and Rostellan? At its very simplest, is the salinity closer to the open sea 35ppt than the North Channel?

The Developer claims that this,

"is not regarded by the Developer as a viable alternative option. Currently the necessary outfall infrastructure is not in place at this location, or at any other location along this section of coast, and there is substantial uncertainty of a realistic prospect of the Developer acquiring the necessary consents in order to deliver this proposal".

Article 174 (2) would not accept this – it is for the Developer to deal with his problem <u>at source</u> and if a sea outfall is needed in his catchment area, then it is up to the Developer to provide it, paying whatever it requires – and certainly not to send it to another outfall, in another catchment, which is now shown to have been totally unsuitable for the past 30 years of its use.

Ballycotton Village discharge has been mooted for taking the combined effluent of Ballycotton, Castlemartyr, Ladysbridge, Clyne and Saleen and potentially Midleton, Whitegate and Aghada (WYG Cost Benefit Analysis for Alternative Outfall for Midleton WWTP 2009 – attached to my first submission). The sea outfall for this has not been started and could well be increased in size. It is said as above that this is also, "*not the open sea*", but to all intents and purposes, this too is open sea with huge dilution, depth, waves – all you need for the dispersion of low grade waste. In contrast, in the North Channel it is going to accumulate and be taken up by the phytoplankton resident there and very possibly give rise to dangerous public health conditions.

The Developer claims that,

" the Hydrometric assessment of the outfall options for Ballycotton focused on bacteriological quality in relation to Bathing Waters and did not address nutrients".

Nutrients are clearly not an issue here in open sea conditions with huge dilution available.

The Developer claims that,

"The area of the coastline between Garryvoe and Ballycotton is designated as an SPA".

The North Channel site is not only an SPA but an SAC and a pNHA with 4 EU Designated Shellfish Waters, with their respective safeguarding PRPs, within less than an hour on both ebb and flood tides. It is thus the most protected water in Co. Cork.

The Developer claims,

"For the Dairygold discharge to be accommodated as part of the proposed Ballycotton outfall both the Foreshore License and the WWDA would have to be revised to accommodate the possible twelvefold increase in flows to the Ballycotton site".

Then this must have been a necessary step for the Developer to have taken, if it is accepted that Article 174 of the Treaty is paramount and that *"environmental damage should as a priority be rectified at source and that the polluter should pay".*

It is, indeed, a very substantial discharge, not only at Ballycotton, but on to the less than 1m deep oyster beds of the North Channel.

The Developer claims,

"The Ballycotton outfall was not considered by the Applicant or identified by Irish Water. It was not a possible option as the existing outfall would not have capacity for the proposed connection".

As stated already, the sea outfall for Ballycotton has not been started and could well be increased in size, with the County Council surely delighted to have Dairygold's contribution.

Reasonable alternatives must, one would have thought, include different discharge **locations,** not 5 different ways in reaching the same, contested, location, i.e. Rathcoursey Point, which all the hydrodynamic work, ever done, can be now shown to demonstrate that the water flow is inland and progressively westwards around Great Island and is simply not the place for any outfall to be sited.

We should remember that M.C. O'Sullivan, himself, said in Volume 1 of his Cork Harbour Pollution Report of 1977 p.102:

"(iii) Because of the presence of oyster farming in the North Channel, ***any outfall point should be such as to give very substantial dilution."***

We now know that as well as Rathcoursey being 10km geographically from dilution in the open sea, it is more like 20km by the route that much of it takes via Belvelly, Lough Mahon, Passage West and the Main Cork Channel down the west side of the Harbour to Roches Point.

The other option which was studied by both WYG for other WWTP discharges in the Kiltha/Womangh area in 2008/9, as well as Mott MacDonald for Irish Water/Dairygold, in their Preliminary Options Report of 2016 (sent with my first submission as Ref. 12) was their Third Option, which was to take the pipeline down the public road and to discharge to the open sea at Ballycroneen (see sec. 9.4 in my first submission).

Other ways round the problem that have been found for the Dairy Industry, that do not appear to have been considered at all by Dairygold, involve the anaerobic digestion (AD) of the whey, converting it to methane and electricity. AD has been used around Europe for some years now and we understand that a return on capital employed can be made in 3-4 years, with all the environmental and pumping costs saved.

These systems have been developed and put into action on large scales by such companies as:

Clearfleau Industrial Water Solutions (part of Enviro Chemie of France) treating 1,650m3/day of process effluent and whey for the Lake District Cheese Co. Ltd at the Aspatria Creamery.

https://clearfleau.com/portfolio/lake-district-biogas-green-gas-from-cheese-residues/

Good Energy/Wyke Farms cheese-making business in Somerset:

https://www.goodenergy.co.uk/blog/2017/05/04/wyke-farms-renewable-electricity-story/

with the **Renewable Energy Association and Biogas:**

http://www.biogas.org.uk/plants/wyke-farm

Freudenberg Aquabio's AnMBR Plant for the Glenmorangie Distillery, with whom we are working on oyster bed rehabilitation:

https://www.aquabio.co.uk/success-of-aquabios-anmbr-plant-at-glenmorangie-distillery/

1.2.2 An Bord Pleanála upheld the planning appeal.

The key evidence in our submission is that there is no (or, at least, less than ~5% a tide) dilution of any discharge from Rathcoursey. The evidence comes from the 1993 North Channel current meter data over 12 days of an entire spring and neap tide cycle, where I explain the background in sec. 5.5 of my first submission and then have a full discussion of the ABP Inspector's Report as Appendix 2, but then add the following on p.13 of my second submission:

"Whether this was intentional or not (the misleading Fig. 2.5 was given twice), it appears that this was the result that was achieved with An Bord Pleanála's Inspector, who states on p.70 of her report, re the "Residual Flow in North Channel":

"*Section 2.5 of the Irish Hydrodata Report states that the speeds on the flooding tide are stronger than on the ebb, with the flood lasting for about 6 hours and the ebb for the remaining 6.42 hours. The high water slack lasts for less than 30 minutes.* ***The difference in the length of Flood and Ebb tides would account for the difference in velocities."***

She thus dismisses the evidence that I had put forward".

I believe it is critical to the EPA's appreciation of our case, that, if even M.C. O'Sullivan's call for a discharge point offering "*very substantial dilution*", because of the presence of oyster beds, is required, and the reality is that the receiving water is more one of accumulation than dilution, then the waters of the North Channel will be affected to a far greater degree by this Dairygold discharge than the Dairygold modelling shows. We are not disabused of the fact that the new modelling is still based on an, "*~80% exchange so that the subsequent discharge event will occur on new water coming in"*, even though that phrase has been taken out of the 25 occasions it had appeared in the original NIS and EIS (see my discussion of Appendix 4 s. 6.2.1.2 of the Response updated NIS in sec.3 of my second submission pp. 10-18).

(32) Data and information included by the developer in the environmental impact assessment report, in accordance with Annex IV to Directive 2011/92/EU, should be complete and ***of sufficiently high quality*** *……..*

(33) ***Experts involved in the preparation of environmental impact assessment reports should be qualified and competent****. Sufficient expertise, in the relevant field of the project concerned, is required for the purpose of its examination by the competent authorities in order to ensure that the information provided by the developer is complete and* ***of a high level of quality.***

These sub-clauses to Preamble 12 emphasise the importance of both the quality of the data produced and of the experts providing it.

I have just produced evidence above questioning the provision of the incomplete North Channel current meter data, collected for the Midleton EIS in 1993, which, if we had been given it at the time, instead of 14 years later in the Prof. O'Kane Norovirus Study in 2007, must surely have prevented Rathcoursey ever being used as an effective discharge location (see pp.10-18 of my second submission).

I cannot believe that, with that particular data in their hands in 1993, Irish Hydrodata Ltd and M J O'Sullivan (for MC O'Sullivan's), did not know that the net water flow from Rathcoursey was inland towards Fota and NOT to the open sea past Whitegate, and that there would be very little dilution made by using Rathcoursey as the discharge point.

On p.7 of my second submission, I challenge the competence of these two experts used by Dairygold. MJ O'Sullivan's assertion in the Midleton 1993 EIS and in his Application to the Minister of the Marine for the necessary foreshore licence update in 1997 that the WWTP, that he had designed, would not have more than 5/6 spills p.a. with a total overflow of no more than 2,973m3 p.a., has turned out to have had an average of over 200 spills p.a. with an average spill volume of 300,000m3 p.a., 100 times greater than he had assured us of, for which Mott MacDonald (Ref. 16 of my first submission) later calculated that a 5m high stormwater holding tank of 5.25ha would be required to comply with what he had promised.

These two experts repeatedly used the phrase,

"*Over the 6+ hour period between ebb tides, water will undergo an ~ 80% exchange so that the subsequent discharge even will occur on new water coming in rather than the column which has gone out on the preceding ebb tide."*

This has now been dropped entirely from the NIS, though I find no mention that the underlying model has been altered.

In its place, the Conclusions to the new Rathcoursey Outfall Investigation of 11 July 2019 make an entirely different statement:

"*Discharges from the outfall are carried by the ebb tide to the south and into the lower harbour.* ***A high proportion returns on the subsequent flood****. Based on dye tests (ref:17) this fraction is about 65%".*

Such a change of expert advice from the discharge being made into 80% new water to now being made into 65% of old water returning, cannot inspire confidence.

The EPA are well placed to decide whether the Dairygold assessment of water exchange, based on "*a simple tidal prism model*" (p.29 of my second submission) compares in any way to the modelling of Cork Harbour carried out by Prof. Hartnett's team in NUIG, now published in several papers. Water movements at this particular, long-disputed, location are crucial.

(14) The effects of a project on the environment ***should be assessed in order to take account of concerns to protect human health****, to contribute by means of a better environment to the quality of life, to ensure maintenance of the diversity of species and to maintain the reproductive capacity of the ecosystem as a basic resource for life.*

As the 22 authors of the two papers published by the EPA in 2001 and 2002 (Refs 1 & 6 in my first submission) pointed out, there should be no further point source introduction of nutrients to the North Channel, where the waters are in danger of becoming eutrophic, as witnessed by the regular blooms of the toxic algal dinoflagellates causing Paralytic Shellfish Poisoning (PSP), the only harmful algal bloom specified in the Shellfish Waters Directive.

This unpleasant nerve toxin is accumulated especially by mussels. Mussels are free to all to collect off the foreshore and eat and this is a common occurrence, especially with the greater numbers of Eastern European and Far Eastern people working in Cork. They may not read the warnings in the Press, which may or may not be placed there.

(12) ***With a view to ensuring a high level of protection of the marine environment****, especially species and habitats, environmental impact assessment and screening procedures for projects in the marine environment should take into account the characteristics of those projects with particular regard to the technologies used (for example seismic surveys using active sonars). For this purpose, the requirements of Directive 2013/30/EU of the European Parliament and of the Council could also facilitate the implementation of the requirements of this Directive.*

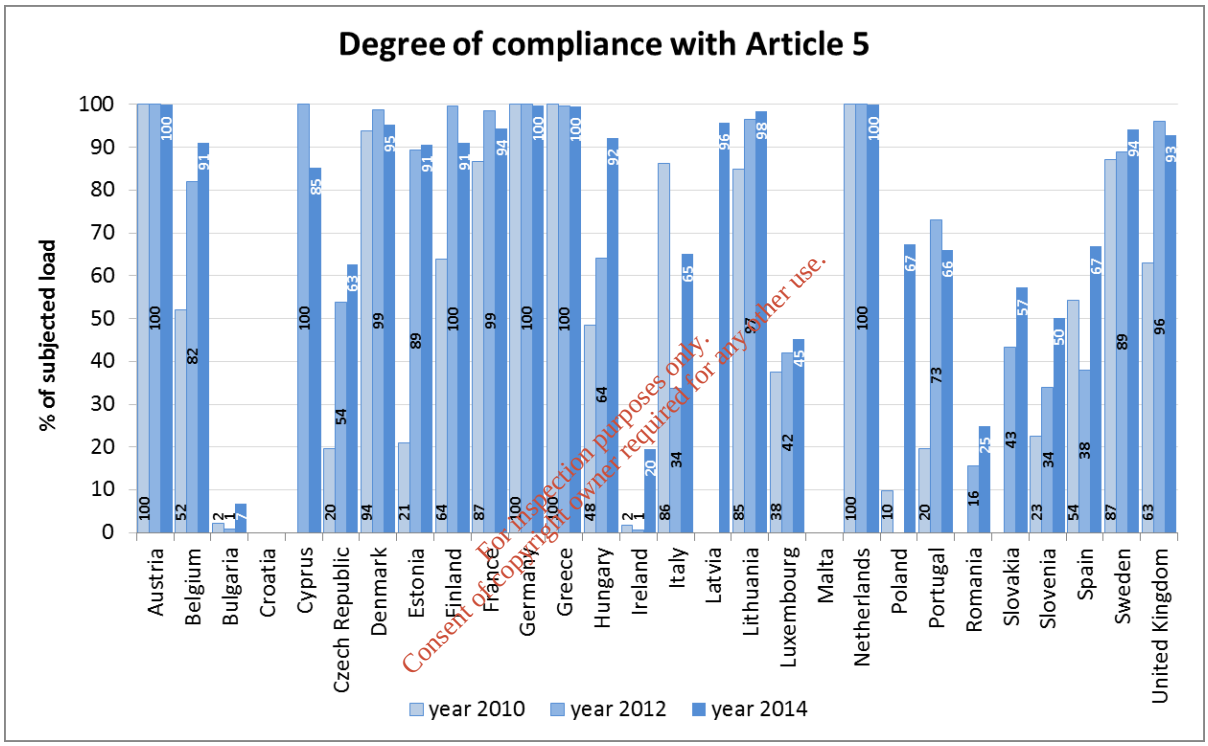
Even this week (early September) we have Dr. Lyons of the National Parks and Wildlife Service (NPWS) at the *Bigger and Better MPA* conference at Trinity College Dublin, warning that,

"*Ireland is a "laggard" in terms of the level of protection provided to restore our ocean's health".*

Mr Fogarty of the Irish Wildlife Trust (IWT) said that as an island nation we "*really should be at the forefront of this effort*" to use MPAs as a tool in protecting biodiversity and ocean ecosystems, and "*not at the back of the class*" as we currently are in Europe.

https://greennews.ie/dairy-expansion-marine-biodiversity/

The EPA must be well aware of the EU Commission's last Ninth Report on the implementation status and the programmes for implementation (as required by Article 17) of Council Directive 91/271/EEC concerning urban waste water treatment, which shows just how far Ireland really is lagging behind in compliance with Article 5, which is what we are really concerned with here.



Progress in compliance rates for Art. 5 UWWTD in the last three Reports in % of the subjected load — data for 2010, 2012 and 2014

In terms of how far Ireland has to catch up, the Commission has devised an estimation system of "distance to compliance", which, as applied to the Article 5 requirement for "more stringent treatment" shows that, whereas the EU 15 Member States were about 7% off compliance in 2014, Ireland was still 80% away from compliance and only better than Bulgaria, Malta and Croatia.

The well-being of our 4 Designated Shellfish Waters is in the hands of the EPA in the administration of their Pollution Reduction Programmes required under the Directive.

1.2.3 Articles

(Red is still material that was considered important enough to be brought up to date by the Commission in 2014)

Article 3

1. The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:

(a) population and human health;

Clearly the unique occurrence of PSP in the North Channel of Cork Harbour is significant enough to be taken into account in considering the introduction of further nutrients to what the Inland Fisheries Ireland have just described (Submission No. S005677 of 26.08.19) as "*already challenged receiving waters"*, and where the NUIG hydrodynamic team assesses the water has a residence time of 50-70 days.

(c) land, soil, water, air and climate

Article 5

(1) (d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;

This is the Article sub-section that Dairygold consider in this unsolicited additional information, but this Article has been very substantially updated, with the addition, inter alia, of:

3. In order to ensure the completeness and quality of the environmental impact assessment report:

(a) the developer shall ensure that the environmental impact assessment report is prepared by competent experts;

It seems amazing that the Commission should have seen fit to have to add this new paragraph 3 to this Article, as well as the extra paragraphs above to the 12th item of the Preamble, looking for competence to be exhibited by the experts employed, but it has clearly been found to be necessary in the Commission's opinion.

I have argued above that the competence of both the hydrodynamic experts, who have between them been responsible for the use of Rathcoursey Point as an outfall for waste products in 1988; 2000; and now in this present application, have made gross failures in firstly, their estimation of the volume of the overflows from the Midleton sewage collection network by no less than one hundred times (10,000%) and, secondly, with the current speed data that they collected in 1993, they did not alert anyone that the residual tide in the North Channel flows inland towards Fota and not down East Ferry, which now gives rise to the

NUIG hydrographers estimating the water residence time in the North Channel as an astonishing 50-70 days.

(b) the competent authority shall ensure that it has, or has access as necessary to, sufficient expertise to examine the environmental impact assessment report;

If the Dairygold Consultants' assessment of the hydrodynamics of the discharge area are not correct, then their modelling of the effects of the discharge are simply not valid.

The EPA have, I believe, been happy with the work of the team in NUIG and have used their expertise in consideration of the effects of the Cork City discharge from the Carrigrennan WWTP.

Article 11

(b) 1. Member States shall ensure that, in accordance with the relevant national legal system, members of the public concerned:

(a) having a sufficient interest, or alternatively;

(b) maintaining the impairment of a right, where administrative procedural law of a Member State requires this as a precondition;

have access to a review procedure before a court of law or another independent and impartial body established by law to challenge the substantive or procedural legality of decisions, acts or omissions subject to the public participation provisions of this Directive

We trust that the EPA will agree that we satisfy both of the above qualifications.

3. What constitutes a sufficient interest and impairment of a right shall be determined by the Member States, consistently with the objective of giving the public concerned wide access to justice……

1.2.4 Annexes

***ANNEX III** SELECTION CRITERIA REFERRED TO IN ARTICLE 4(3)*
(CRITERIA TO DETERMINE WHETHER THE PROJECTS LISTED IN ANNEX II SHOULD BE SUBJECT TO AN ENVIRONMENTAL IMPACT ASSESSMENT)

1. Characteristics of projects

The characteristics of projects must be considered, with particular regard to:

(b) cumulation with other existing and/or approved projects;

I have argued that the Developer has not taken into account the existing cumulation of nutrient discharges from the untreated town pumping station overflows, which are not only

very substantial, but are also subject to the same accumulation in the Owenacurra and North Channel as are, of course, all the discharges at Rathcoursey.

Sec. 7.6 of my first submission deals with these in detail and I estimate the real riverine load as being 2.5 times greater than the figure used by the Consultants (see s. 7.6.2).

(c) the use of natural resources, in particular land, soil, water and biodiversity;

(d) the production of waste;

(e) pollution and nuisances;

(g) ***the risks to human health*** *(for example due to water contamination or air pollution).*

The Commission has specifically added this to Annex 4, below, as well.

2. Location of projects

The environmental sensitivity of geographical areas likely to be affected by projects must be considered, having regard in, with particular regard to: (a) the existing and approved land use;

The existing land use of the North Channel is accepted and has been published, as being oyster farming. We have been there for 50 years and from the 1980's up to 1995 produced a quarter to a third of the country's income from oysters.

(c) the absorption capacity of the natural environment, paying particular attention to the following areas:

(ii) coastal zones and the marine environment;

It is recognised by the EU that the marine environment is particularly under threat. See the comments of the NPWS and IWT for the present Conference in Dublin (Sept. 2019).

(v) areas classified or protected under national legislation; Natura 2000 areas designated by Member States pursuant to Directive 92/43/EEC and Directive 2009/147/EC;

(vi) areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation have already been exceeded and relevant to the project, or in which it is considered that there is such a failure;

3. Type and **characteristics of the potential impact**

The likely significant effects of projects on the environment must be considered in relation to criteria set out in points 1 and 2 of this Annex, with regard to the impact of the project on the factors specified in Article 3(1), taking into account:

(b) the nature of the impact;

(g) ***the cumulation*** *of the impact with the impact of other existing and/or approved projects;*

Projects must be viewed in relation to the existing impact on the water, in this case, of known and unquantified sources of nutrients leading to the present "*already challenged*" state of the water in this innermost part of Cork Harbour (Inland Fisheries Ireland submission).

(h) the possibility of effectively reducing the impact.

Alternative solutions are available to remove the impact entirely:

1. Dispose of these nutrients to the open sea at Ballycroneen (Option 3 of the Mott MacDonald Preliminary Options Report of 2016 for Irish Water: Ref. 12 with my first submission).

2. Use integrated constructed wetland technology, if necessary, pumping the treated effluent a short distance to find a suitable location. This will be less than the 13.6km required to reach Rathcoursey.

3. Make use of the available and now well-tried Anaerobic Digestion (AD) Systems for dealing with waste water from cheese production.

ANNEX IV
INFORMATION REFERRED TO IN ARTICLE 5(1)
(INFORMATION FOR THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT).

1 A Description of the project, including in particular:

(a) Description of the location of the project;

2. A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

I have dealt with technology and location. I have also outlined the unique, specific characteristics of the water into which the proposed discharge is to be made i.e. where there is an accumulation rather than a dilution of waste inputs. Moreover, a million consumers of oysters p.a. are supplied by the production there, and there is every likelihood that the resident threat of the nastiest form of toxic algal bloom will be intensified by the introduction of yet more nutrients, on top of domestic overflows, averaging over 300,000m3 p.a., that have not been taken into consideration in the modelling supplied by the Developer.

No comparison of the environmental effects has been attempted in this unsolicited Dairygold paper. The advice from the EPA papers that I have quoted and the recent submission from IFI, is that no more nutrients should be added to this water and the comparison must be made with zero addition to the cumulation of nutrients that this water already suffers from.

3. A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project

as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.

This company farmed oysters from 1971 to December 1988, when the Midleton town effluent was brought down for the town to Rathcoursey, against all the advice in an 80pp. Submission by the Department of Fisheries and Forestry (1984) and from then on the success of the fishery declined until it was closed by the Department of the Marine in 2002.

We believe that the hydrography of the water movements in this part of the Harbour explains entirely the problems that arose immediately (within days) following the move of the town's discharge to Rathcoursey and that, even now, were discharges there to be discontinued, we would very likely return to a much improved situation and closer to the baseline scenario before 16th December 1988.

4. A description of the factors specified in Article 3(1) likely to be significantly affected by the project: population, human health…….water (for example hydromorphological changes, quantity and quality),

5. A description of the likely significant effects of the proposed project on the environment resulting from, inter alia:

(d) ***the risks to human health****,……*

See above in Annex III

(e) ***the cumulation of effects with other existing and/or approved projects****, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected* ***or the use of natural resources;***

We have 4 EU Shellfish Waters (the North Channel and 3 at Rostellan North, South and West) designated under the Shellfish Waters Directive as amended 2006/113/EC, in which PSP is a listed parameter, and all are covered by individual Pollution Reduction Programmes administered by the EPA.

Both fisheries are covered by Oyster Fishery Orders from 1963 and 1970 and, being undoubtedly some of the finest oyster grounds available in Europe, are an extremely scarce natural resource of great value to us and to the country.

The risk of a PSP poisoning incident to us and to the shellfish industry as a whole, could be catastrophic.

(g) the technologies and the substances used.

The description of the likely significant effects on the factors specified in Article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium- term and long-term, permanent and temporary, positive and negative effects of the project. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project.

Article 3(1) and the first sub-section of it, (a), concerns the effects on population and human health;

This new paragraph appears to underline the importance the EU attach to any possible effect on population and human health, in saying that any indirect, secondary, or cumulative; medium term or long-term; permanent and temporary; positive and negative effects of the project, should be described in the EIA.

Although we based our submissions to Cork County Council (January 2017) and to An Bord Pleanála (August 2017) on the addition of any nutrients to an already poor water quality area and the possibility of increased harmful algal blooms, and thus long before the developer's NIS was updated in April 2019, neither the Developer's updated NIS, nor the Rathcoursey Outfall Investigation (ROI) of 11th July 2019 has touched on this specific subject.

Both the EPA in their Further Information Request of 13.03.19, and ourselves, have brought to light the fact that the NIS sec. 8.1 on Residual Impacts states:

"*Provided that the mitigation measures **(from section 7.8)** are implemented in full, it is not expected that significant impacts will result to the features of interest identified for appraisal in this NIS and thus it is not expected that the proposal will have an adverse impact on Natura 2000 sites",*

but that this section on mitigation measures was not and has never, as far as I have seen, been put in, and thus could not be commented upon by us.

7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.

As I have stated above, the possibility of a significant adverse effect of the proposed Dairygold discharge at Rathcoursey was identified by me to the Developer via my objections to planning permission in January and August 2017 and thus could and should have deserved the above *"description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment"*, in the NIS and ROI presented to the EPA.

2. The Current Guidance on Assessing Alternatives

The EU Commission guidance "Guidance on the preparation of the Environmental Impact Assessment Report" (2017), can be found on:

https://ec.europa.eu/environment/eia/pdf/EIA_guidance_EIA_report_final.pdf

Section 1.5.4 on p.55 is usefully concise and descriptive of what is required:

1.5.4 "*Mandatory Assessment of Alternatives: In a nutshell*"

- *The EIA Directive requires Developers to describe the reasonable Alternatives that have been identified and studied and to compare their environmental impacts against the Project option chosen. This is an important aspect of the EIA Report and one that often challenges practitioners and Developers. Alternatives have to be 'reasonable', meaning that feasible Project options meet the Project's objectives.*

I cannot see that any of the alternatives that I have discussed above are not reasonable and should have been described in some detail as required in the next bullet point:

- ***The 2014 amendments to the Directive*** *now require the EIA Report to include a description of the reasonable Alternatives (as opposed to an 'outline') studied by the developer who holds the pen. They also suggest types of Alternatives, such as Project design, technology, location, size, and scale.*

Both "technology" and "location" are surely asking to be examined in some detail in this case.

- *The approach to identifying Alternatives is highly Project-specific. Some Alternatives are overarching and may be identified in plans and programmes (e.g. transport plans or regional development programmes) or by the Competent Authority at the EIA Scoping stage. Others might concern the technical design and are identified by the Developer. In cases, EIA practitioners may identify Alternatives and propose them to the Developer. The process of identifying and assessing Alternatives is iterative and requires some flexibility and good communication between all parties.*

One might have thought that there could have been some dialogue between the Developer and ourselves, as owners of aquaculture rights in the water, as well as members of the general public - certainly after it became clear from both Cork CC and ABP's Inspectors' reports that it was the location of the discharge point that was causing by far the greatest concern in the Developer's overall plans.

- ***Consultation with the public is usually very important both for identifying and assessing Alternatives****. A clear presentation of Alternatives, and how they have been assessed, also lends transparency to the process and can improve public acceptance and support for Projects.*

A recurrent criticism of the proposal to discharge creamery waste containing oils, fats and greases, is the fact that no alternative ideas, or locations have been put forward.

- *The environmental assessment of Alternatives should be targeted and focused on the comparison of impacts **between several options** and presented as such in the EIA Report.*

This has simply not happened.

SEA of Local Authority Land-Use Plans - EPA Recommendations and Resources Version 1.3 of 21.06.19

https://www.epa.ie/pubs/advice/ea/EPA%20SEA-LandUse-Recommendations-Guidance_2019.pdf

This "*updates reference to water quality*" over the "*Draft EPA Guidance on information to be contained in EIA Reports of 2017*" quoted by the Developers.

It may not have been in time to be incorporated into the Rathcoursey Outfall Investigations of 11th July 2019, although a draft may well have been available earlier to environmental consultants. It does, however, provide the latest thoughts of the EPA, on which the question of Alternatives for the present application may be judged:

p.5 "Water Framework Directive.

Protection of Surface and Ground Water Resources.

*Protecting our valuable surface and ground water resources is of vital importance to protect both **human health** and provide for a healthy environment. In this context, you should provide clear commitments in the Plan to protect surface water, groundwater and **coastal/estuarine resources and their associated habitats and species, including fisheries within and adjacent to the Plan area**. Where specific recommendations/concerns for water bodies within the Plan area are identified in EPA water quality reports, including the Water Quality in 2017: An Indicators Report' (EPA, 2018) and Water Quality in 2016 (EPA, 2018), these should also be addressed/considered at an appropriate level in the Plan".*

(I also look at SEA in relation to the PRP's associated with our Shellfish Waters in s. 10.4 of my first submission)

5. Summary of the Unsolicited Additional Information of 27th August 2019

We agree that there should be a realistic prospect of an alternative solution to releasing the Dairygold effluent at Rathcoursey. We now know that it was wrong to have put the Midleton discharge at Rathcoursey, but that wrong cannot be compounded by further wrong, and if the EPA is persuaded that Rathcoursey is not a viable location for this discharge, then an alternative will have to be found.

This is not the fault of anyone but the Developer and their trust that was put in Irish Water to provide a solution. However, it is a problem for the Developer and not what they call the competent authority. It does not make sense for the Developer to claim in his summary,

"An existing feasible alternative outfall to the proposed outfall has not been made available to the developer by the competent authority".

The updated NIS tells us that permission is being sought to join the Midleton sewer at Bawnard Cross on the Whitegate Road, but in fact pipe-laying has already been carried out for approx. a further 320m down the shore road to Rathcoursey Point and digging has commenced at the Rathcoursey Tank, so we are all in the dark as to what is really being planned.

We are also told in this Dairygold summary,

"The ability of the developer to provide a new alternative outfall is reliant on acquisition of consents outside of the developers control and thus is potentially unrealistic and undeliverable".

If that is really the case, the Developers alone are to blame for choosing this location for their factory. They recognised in their EIS Vol. 2 s.3.2 that,

"Environmentally, key considerations were effluent related. The Mogeely option has considerable advantages over the Castlefarm option to cater for treatment and disposal of process wastewaters", and that,

"The option in Mogeely (over Mitchelstown) takes the effluent to a saline outfall" (NB that this is not called the "*open sea*" or "*long sea outfall*".)

The options are then discussed in s. 3.3.2 and are dismissed in these 43 words:

"The Kiltha River does not have the capacity to accept the increased volumes of treated wastewater. Therefore a new discharge point is required. As part of this development proposal it is being proposed to discharge treated process effluent into Cork Harbour at Rathcoursey".

Of the 6 Options explored and costed by Mott MacDonald for Irish Water in 2016, Dairygold chose only two, both of which were to discharge at Rathcoursey:

"Option 1 - Combination of Off-road and On-road route" and,

"Option 2 - On-road only route" – with two alternative routes.

If anaerobic digestion, which we are told will repay investment on their site in 3-5 years, is not to be looked into; nor a 5ha field to install a constructed wetland found in their own catchment; then there is always Option 3 that was provided for them by Mott MacDonald/ Irish Water, which is to continue the pipeline from Bawnard Cross down the public road network to discharge to the open sea at Ballycroneen. Mott MacDonald are the second set of Consultants, after WYG Ireland Ltd., to suggest Ballycroneen as an Option for a discharge location in place of Rathcoursey (see Refs. 12 & 13 with my first submission).

In the Loch Ryan oyster fishery, where we are controlling partners, Scottish Water could not give SEPA (Scottish Environment Protection Agency) the assurance that treatment of Stranraer's waste would be "*entirely effective all the time*" and the treated discharge has had to be piped 8km overland to the open sea, rather than be risked into the oyster fishery.