

This Report has been cleared for submission to the Director by Programme Manager, Darragh Page
Signed: Philomena Kelly *Date: 08/03/2024*



MEMO

Office of
Environmental
Sustainability

To: Micheál Lehane, Director

Date: 08/03/2024

From: Katelyn Grant, Inspector, Environmental Licensing Programme

Subject: Appeal of Air Pollution Act licence granted to BioAtlantis Ltd., Clash Industrial Estate, Clash East, Tralee, County Kerry by Kerry County Council

Appeal Registration No.: E0011-01

Recommendation: The Director is asked to **APPROVE** the decision recommended hereunder with respect to the appeal submitted to the Agency in relation to the Air Pollution Act licence (Reference AP-17-01B) granted to BioAtlantis Ltd. for atmospheric emissions from the operation of a seaweed processing plant at Clash Industrial Estate, Clash East, Tralee, County Kerry.

1 Background

Air Pollution Act licences are single media licences for industrial processes not included in the First Schedule of the EPA Act 1992 as amended, and are granted by Local Authorities under the Air Pollution Act 1987 ("the Act") as amended. The industrial processes are listed in the Third Schedule of the Air Pollution Act, 1987 as amended.

Under Section 34(1) of the Air Pollution Act, an appeal may be made in relation to the granting or refusing of a licence under the Act. As of the 31 August 2015, the Environmental Protection Agency ("the Agency") is the statutory authority for appeals in relation to Air Pollution Act licences. Prior to this date the statutory authority for these appeals was An Bord Pleanála.

The licence relating to this appeal is for the operation of a seaweed processing plant, BioAtlantis Ltd., in Clash Industrial Estate, Clash East, Tralee, County Kerry. The plant has been in operation since 2018. The Industrial Estate is located on the eastern side of Tralee. The industrial estate contains a number of other industries and commercial premises. There are residential areas in close proximity to the installation to the east, southeast, south and southwest. The closest residential property to the processing area is approximately 100 m away. See Appendix 2, Figure 1 for sensitive receptor locations.

The operation of the plant is to extract seaweed to produce plant health, foliar and granular fertiliser for agriculture and horticulture. Seaweed, the raw material, is delivered either pre-chopped and washed or unprocessed. It is stored indoors below 25 degrees Celsius. The seaweed that is unprocessed is ring-dried, if necessary, and then chopped and washed. The seaweed extraction process begins with blending. Hot water and seaweed are mixed together

under alkaline conditions, due to the addition of 40% potassium hydroxide (KOH). Once blended, this batch is pumped to an extraction tank. Depending on the product being made different extraction tank types may be used. The process is automated from here using the SCADA interface control system. The alkaline seaweed and water batch are pressurised using steam generated onsite for several hours to assist in the extraction process. Once complete, the pressure is released and the extracted seaweed and water are transferred for separation, decanting and clarifying.

The decanter is a horizontal axis centrifuge which removes the majority of the insoluble material. The clarifier is a vertical axis centrifuge that removes the rest of the insoluble material. The liquid is stored for further processing. The insoluble solids are moved to a holding tank for further processing or sold as a soil enhancer. The holding tanks are closed and vented to a scrubber. When the tank is sufficiently full of product, it is dried in a rotary drum dryer. The liquid extract is pumped to an evaporator to remove water and increase the solid content. This product is pumped through a cooling system before storage in stainless steel tanks. Packaging of the products is the final stage of processing. Other purification steps are sometimes used including membrane filtration, ion exchange chromatography or separation using polar or non-polar compounds.

The original Air Pollution Act Licence, AP-17-01 was granted on 15 December 2017. The licence review process was initiated by Kerry County Council on 15 June 2021 with a notification to BioAtlantis to provide information. The notification correspondence included 25 requests for information. In this correspondence KCC noted that a failure to comply with the request within three months may result in the completion of the review without this information. The first party did not respond to any of the requests for information therefore the review was completed. The first party responded that they believed their activity did not fall under the Air Pollution Act and asked for the original and revised licence to be cancelled. In their defence of this, they cited correspondence with the EPA that clarified they did not fall under the First Schedule of the EPA Act 1992 as amended but did not specify whether they fell under the requirements of the Air Pollution Act.

The revised licence was granted on the 8 July 2022. The granting of a revised licence to the installation has been appealed to the Agency by a third party. Submissions and observations were made by the licensee, and Kerry County Council.

The emissions from the installation include the following:

- emissions of odour, ammonia, mercaptans, and hydrogen sulphide from the emissions stack,
- emissions of nitrogen dioxide, sulphur dioxide and carbon monoxide from the boiler stack,
- fugitive odour emissions from seaweed washing and chopping,
- noise emissions from processing on-site, and from delivery and collection traffic.

The principal source of odour from this secondary seaweed processing was deemed to be the extraction process. The mitigation of these odours includes channelling the steam from the pressure vessels and the vapours from other extraction vessels via a blowdown tank to a thermal oxidiser and then sending them to the venturi and packed bed scrubber abatement system. The other vapours associated with the processing and air from the decanter/clarifier and evaporator are drawn by a fan and ducted to the venturi and packed bed scrubber alone. The air is treated with acid in the venturi and with peroxide in the packed bed scrubber. All of the above processes are automated including the dosing of chemicals.

2 Third Party Appeal, Submissions and Observations

The Agency received E0011-01, third party appeal against the decision of Kerry County Council (KCC) to grant BioAtlantis Ltd. a revised licence. There were two points of objection; regarding odour and noise emissions from the installation. The Agency also received a number of submissions on the appeal and observations on these submissions from BioAtlantis Ltd. and KCC.

Type	Name	Date received
Third party appeal	Trevor O'Shea	25/07/2022
First party submission on the appeal	BioAtlantis Ltd.	02/09/2022
Local Authority observations on the appeal	Kerry County Council	09/09/2022
Observations on the submissions	Kerry County Council	27/09/2022
	BioAtlantis Ltd.	27/09/2022

3 Consideration of the appeal

Third Party Appeal - Odour and Noise Emissions

The Agency received one third party appeal in relation to the granting of a revised licence to BioAtlantis Ltd. from Trevor O'Shea on 25 July 2022. He appealed the granting of a revised licence due to the ongoing odour and noise issues affecting his home since 2019. The issues raised in this third party appeal are discussed below.

The appellant documented their complaints lodged with Kerry County Council (Table 1). According to the appeal, on occasion the appellant is hindered from using their garden due to the odour from BioAtlantis Ltd. The odour is noted to be equivalent to 'rotting fish'. A video of noise was attached to the appeal, taken just before midnight during July 2022 to demonstrate the typical noise from the site. The sound is akin to items rotating at speed in a drum.

Table 1: Third party appellant's odour and noise complaints to Kerry County Council (note some complaints were for both noise and smell).

Year of complaint	Number of odour specific complaints	Number of noise specific complaints	Total number of complaints
2019	18	35	45
2020	18	13	28
2021	5	4	9
2022 (up-to Appeal July 2022)	8	9	16

First Party Submission on the appeal

The first party made a submission on 2 September 2022 responding to the issues raised in the appeal.

The submission also requested that the Agency assess whether BioAtlantis' activities come under the remit of the Air Pollution Act 1987 as amended. The first party believes their activity does not require any licence. This matter is not addressed in the third party appeal, and so is outside the scope of this Air Pollution Act Appeal. Having reviewed the Air Pollution Act 1987, as amended, I am satisfied that BioAtlantis Ltd. require an air pollution licence for which the local authority is the responsible authority.

In response to the third party appeal, the first party noted that not all complaints raised to Kerry County Council (KCC) are verified. They highlighted that the total number of valid odour complaints received between 1st July 2020 and 20th May 2022 was 10. They stated this aligned with KCC figures where 10 complaints were verified out of 24. They argue that there is no valid evidence to suggest they are responsible for odours in the area.

In this submission, the first party raised numerous points in response to a KCC commissioned report from TMS (ref: 23370-4, 29th June 2022) to review BioAtlantis' Air Pollution Act licence. This inspectors report is to assess the third party appeal on the revised licence, the observations/submissions on same and the contents of the revised licence itself, these responses to the TMS report will not be discussed in detail.

The submission described the extensive investment made by BioAtlantis Ltd. on their odour abatement system and the considerable annual running costs of this. They noted that Section 5 of the Air Pollution Act requires the decision makers to consider the economic situation of undertakings or enterprises of the class concerned.

The first party stated, within further responses to the TMS (ref: 23370-4) report, that all noise complaints from the period 1st July 2020 to 22nd July 2022 were from one complainant and no other resident in the vicinity had complained of noise issues. They asserted that 13 of the 17 complaints, where the noise source was identifiable, were rectified immediately.

Local Authority Submission on the appeal

KCC submitted observations in response to the appeal and correspondence from the Agency. Their observation provided general information on the installation's processes and odour abatement. They also provided the authorisation history of the installation. Planning permission and an air emission licence under the Air Pollution Act were sought together. Kerry County Council granted planning permission (Planning Register 17/552) on 1st December 2017 and the air emission licence was granted 15th December 2017. Both the planning permission and air emission licence stipulated odour management conditions and no appeals to either were brought by any party. Detailed odour modelling and assessment were submitted during application stages to the Council on behalf of BioAtlantis Ltd. However, these reports were based on the scenario at the company's previous site in County Cork. The odour emission limits in the licence were based on this modelling as production activities had not begun at the Tralee site.

The complaint history was documented in the Council's observations. They began receiving complaints about the installation in 2018, soon after production commenced. The complaints described the odours as 'fishy', 'marine' and with a 'chemical nature'. The council carried out investigations into these complaints with regular contact with BioAtlantis Ltd. Table 2 contains details of the complaints received by KCC.

Table 2: Copy of Complaints History received by KCC.

Year	No. of odour complaints received
2018	2
2019	34
2020	26
2021	16
2022 (to 30th August)	14

It is noted in the observation that in response to these complaints, KCC carried out odour patrols on a random basis and frequently detected odours from the installation. The Council provided a breakdown of their odour patrol results in Table 3.

Table 3: Odour Patrols carried out by KCC.

Year	No. of Odour Patrols	No. of occasions odour detected	Odour persistence		Odour intensity			
			Intermittent	Persistent	1	2	3	4
2018	1	1	0	1	1	0	0	0
2019	39	21	6	15	3	15	3	0
2020	37	21	9	12	10	6	4	1
2021	16	11	5	6	3	7	0	1
2022 (to 30th August)	9	8	5	3	0	8	0	0

KCC also noted that there were also regular noise complaints made about the installation.

KCC stated that the installation acknowledged that odour issues may have happened during the 'commissioning phase' and on specific once-off incidents, but BioAtlantis Ltd. do not accept that there is an on-going odour management issue.

KCC commissioned ambient air quality monitoring between 15 June to 13 July 2020. Substances including ammonia, hydrochloric acid and phosphoric acid were detected at low

concentrations by diffusion tubes at two locations in proximity to the installation boundary. Another monitoring campaign was undertaken between 4 February and 3 March 2021 at four locations in proximity to the installation. Ammonia and hydrogen sulphide were above detection limits (i.e., analytically measurable) and higher than the expected baseline levels at the four locations but they did not exceed the relevant air quality guidelines.

During the licence review process, KCC commissioned a TMS report to assess BioAtlantis' requirement to hold a licence under the Act. It concluded a licence was required under section 20 and 21 of the Act's Third Schedule. A number of third party submissions appealing the review of BioAtlantis' licence were received by KCC during the review process documenting the impact of odour events.

Local Authority Observations on the First Party Submission

KCC sent observations on the First Party submission on 27th September 2022. In this observation, KCC acknowledged that not all complaints could be verified. However, they noted that the absence of verification does not necessarily negate validity. In some instances, KCC staff were not in a position to respond to complaints received, which meant they could not be independently verified. They direct attention to their own random odour patrols (Table 3) where odours were detected at 62 of the 102 odour patrols.

Within this observation, the TMS author of the report reviewing BioAtlantis' air pollution licence (ref: 23370-4, 29th June 2022) responded to the first party submission comments about that report. Most of the points are repetition from the various reports. Specifically, TMS replied that the odour assessment report by Odournet commissioned in 2017 during planning permission was outdated. They noted that BioAtlantis' submission emphasises the health related air quality standards without considering the odour emissions and serious odour nuisance which are assessed under different approaches than air quality standards.

First Party Observations on the Local Authority Submission

The first party sent observations on the Local Authority submission on the appeal on 27 September 2022. The first party again stated their wish for the Agency to assess BioAtlantis' eligibility for an air pollution licence, however, this is outside the scope of this appeal.

The first party assured that the odour modelling is representative of the current activity due to the extraction process at their Cork facility being "identical to those at Tralee" and that the "modelling was considered appropriate and in line with the EPA's AG4 Guidance Notes".

The first party pointed out the decrease in odour complaints since the end of the commissioning phase. They state there were only 5 valid complaints received in 2021 and 4 in 2022 (up until 30 August). They also noted their request to carry out joint odour patrols with KCC, which was declined. The first party asserted that noise complaints are rare, from only one complainant and every noise complaint received was resolved.

The first party reiterated their view that the TMS reports commissioned by KCC for the review of their licence and their eligibility under the Air Pollution Act do not "identify any emission that could be attributed to the BioAtlantis facility" and that "the compounds detected were within ambient air quality limits". They said, "claims made by KCC in relation to odour are not substantiated".

Assessment of the appeal

1. Odour Emissions

The third party appeal states that 'they have continuous issues with both odour and noise from this factory since early 2019'. The objection outlines an incident where the odour in their garden was 'toxic equivalent to rotting fish'. This reference to the smell from the site being 'toxic', i.e., an immediate danger to human health is not substantiated by air quality data provided. However, the impact of these odours, which are well documented by the complaints history and validated by KCC's odour patrols cannot be minimised. Offensive odours can impact on health and well-being, particularly if individuals are subjected to the odour for extended periods of time. An individual's health may suffer indirectly as a result of stress associated with the odour impact. Thus, odour nuisance is pollution.

It must be noted that the third party appellant submitted a large proportion of the complaints to KCC in 2019 to 2022 along with other complainants (Table 4). Despite this, a clear odour nuisance was verified from the installation in the years after the 'commissioning phase'.

Table 4: Comparison of KCC Complaint Records with Third Party Appellant

Year	No. of odour complaints received by KCC	No. of odour specific complaints submitted by Trevor O'Shea to KCC
2018	2	-
2019	34	18
2020	26	18
2021	16	5
2022 (to 30 th August)	14	8

The KCC odour patrol monitoring and recording (Table 3) were done in accordance with 'Agency's Air Guidance Note 5 (AG5) Odour Impact Assessment Guidance for EPA Licensed Sites'.

18 of the 39 (46%) odour patrols were above the nuisance threshold in 2019, 11 out of 37 (30%) in 2020, 8 out of 16 (50%) in 2021 and 8 out of 9 (89%) in 2022 up to 30th August (Refer to Table 3).

Odour nuisance has been verified. The proximity of sensitive receptor's further substantiates the requirement for odour emission monitoring and enforcement (see Fig. 1). In view of the extensive history of complaints and the patrol history the requirement for the licence with enforceable odour limits is further justified.

The 2017 commissioned air dispersion modelling report to predict the odour impact on sensitive receptors used an emission monitoring dataset from a BioAtlantis Ltd. site in Kanturk, County Cork. This dataset was used as model inputs for volumetric flow and odour emission concentrations. The results indicated that the odour standards would not be exceeded at any sensitive location. The standard is an odour concentration of 1.5 OuE/m³ for the 98thile of hourly averages, and indicates an acceptable impact. The assessment provided suitable information for the planning permission application and the formation of the first air pollution licence. However, the assessment was undertaken prior to operations commencing at the Tralee facility and excluded the additional pressure vessel, the actual hours of operations and the increase in the odour abatement stack height.

An updated odour dispersion model is required to be completed by BioAtlantis Ltd. in accordance with Condition 4.1 of the current revised licence for the Tralee site to allow the Emission Limit Values (ELVs) to be modelled and then applied in Schedule A of the newly proposed revised licence. This would not be a repeat of the initial dispersion modelling as the data would come from the operational site in Tralee which has been at least somewhat altered since planning permission and the first licence were granted (stack height increase and additional pressure-vessel).

The odour abatement equipment requires enforceable controls and monitoring. I recommend the following changes to the revised licence:

- The introduction of a requirement to carry out an odour management plan and the requirement of a weekly odour survey to Condition 4, to have proactive and preventative measures in place to avoid odour nuisance from the site.
- The inclusion of emission limit values for TVOC and odour in Schedule A.1 Emissions to Air following the submission of relevant information from the first party to KCC. The inclusion of a Schedule B: Control and Monitoring to outline the monitoring to be carried out.
- Updating of Conditions 5.1 and 5.2 to provide further information on the test programme.
- Remove Conditions 5.5, 5.6 and 5.7, the air quality monitoring requirements, to put the first party on equal terms with other industry and reduce costs associated with monitoring.
- Amend Condition 5.11 to bring the revised licence up to date.
- Amend Condition 5.13 to clarify standard conditions for monitoring.
- Amend Condition 5.15 to bring the revised licence up to date.

Recommendation

CONDITION 4 EMISSIONS

Append the following to Condition 4

4.5 No specified emission from the installation shall exceed the emission limit values set out in *Schedule A: Emission Limits*, of this licence once agreed with the local authority following completion of Condition 4.1.

4.6 Odour Management Plan

4.6.1 The licensee shall prepare, maintain and implement, to the satisfaction of the Licensing Authority, an Odour Management Plan.

4.6.2 The plan shall include all odour sources including emission points regulated in this licence.

4.6.3 The plan shall be submitted to the Local Authority within six months of the date of grant of this licence.

4.6.4 The plan shall outline odour reduction and abatement measures.

4.6.5 The plan shall as a minimum address the following:

- (i) the operation of equipment to ensure compliance with emission limit values and a reduction in fugitive emission sources.
- (ii) storage areas and the storage and handling of wastes and other materials with a potential for causing odour.

4.6.6 The plan shall be prepared in accordance with the Agency's Odour Emissions Guidance Note (Air Guidance Note AG9).

4.6.7 The plan shall be reviewed annually.

4.7 Odour

4.7.1 The licensee shall carry out an odour survey of the site operations weekly.

4.7.2 The survey programme shall be undertaken in accordance with the methodology specified in the 'Air Guidance Note 5 (AG5) Odour Impact Assessment Guidance for EPA Licensed Sites' as published by the EPA.

Insert Schedule A: Emission Limits and Schedule B: Control and Monitoring.

Append the following to Schedule A: Emission Limits:

Schedule A.1 Emissions to Air

Emission Point Reference No.: A1-1 (Odour Abatement Exhaust Stack)

Location: To be confirmed

Volume to be emitted:

Maximum rate per hour: To be confirmed ^{Note 1}

Stack height: To be confirmed ^{Note 1}

Parameter	Emission Limit Value
Odour (OU _E /m ³)	To be confirmed ^{Note 1}
Total Volatile Organic Compounds (TVOC) mg/m ³	To be confirmed ^{Note 1}

Note 1: To be approved by Kerry County Council

Append the following to Schedule B: Control and Monitoring:

Schedule B.1 Monitoring of Emission to Air

Emission Point Reference No.: A1-1 (Odour Abatement Exhaust Stack)

Parameter ^{Note 1}	Monitoring Frequency	Analysis Method/Technique
Odour	Quarterly	EN Standard Reference Method 13725
Total Volatile Organic Carbon (TVOC) mg/m ³	Biannually	Standard Method
Volumetric Flow	Quarterly	Standard Method

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

Reason: To provide for the protection of the environment by way of control and limitation of emissions.

CONDITION 5 CONTROL AND MONITORING

Amend Condition 5.1 with the following:

5.1 Test Programme

5.1.1 The Licensee shall prepare, to the satisfaction of the Licensing Authority, a test programme for odour/air emission abatement equipment installed to abate emissions to atmosphere. This programme shall be submitted to the Licensing Authority in advance of implementation. Following agreement with the Licensing Authority, the Test Programme shall be completed within three months of the commencement of operation of the abatement equipment (**if different from current abatement system**).

5.1.3.4 Be prepared in accordance with the guidance published by the 'Agency, Odour Emissions Guidance Note (AG9)', as may be amended or replaced.

Rename the current condition 5.1.3.4 in the licence as 5.1.3.5.

Append the following to Condition 5.2

5.2.1 Sampling and analysis shall be undertaken by competent staff in accordance with documented operating procedures. Unless otherwise approved by the Local Authority, sampling and analysis of emissions to atmosphere shall be carried out by ISO 17025 accredited persons/organisations, with accreditation for the relevant scope of sampling and analysis.

5.2.2 Such procedures shall be subject to a programme of Analytical Quality Control using appropriate control standards.

5.2.3 Where any analysis is sub-contracted it shall be outsourced to a competent laboratory.

Reason: To provide for the protection of the environment by way of control and limitation of emissions.

Delete Condition 5.5, 5.6 and Condition 5.7.

~~5.5 If required by the Licensing Authority, the Licensee shall retain the services of a competent person(s) to undertake air quality monitoring at the facility. The scope of same shall be agreed in advance with the Licensing Authority. A report shall be furnished to the Licensing Authority as soon as practical after the monitoring is carried out. The Licensee will be liable for all costs associated with this monitoring.~~

~~5.6 The Licensing Authority reserves the right to retain the services of a competent person(s) to undertake air quality monitoring at the facility on behalf of the~~

Licensing Authority. The Licensee will be liable for all costs associated with this monitoring.

~~5.7 Analyses shall be undertaken by competent staff in accordance with documented operating procedures. Monitoring and analysis shall be undertaken by a laboratory accredited to ISO17025; where analysis is sub-contracted it shall be to a competent laboratory.~~

Reason: To put first party on equal terms with other industry and reduce costs associated with monitoring.

Amend Condition 5.11 as follows:

5.11 Fugitive Emissions

The Licensee shall prepare a programme to the satisfaction of the Licensing Authority, for the identification and reduction of fugitive emissions using an appropriate combination of best available techniques. The scope of this programme shall be agreed in advance with the Licensing Authority and carried out within ~~6~~ **12** months of ~~the date of grant of licence commencement of production at the facility~~. The findings of this programme shall be furnished to the Licensing Authority as soon as possible thereafter.

Reason: To make the new revised licence current.

Replace Condition 5.13 with the following:

5.13 The concentration and volume flow limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of:

5.13.1 From non-combustion sources:

Temperature 273K, Pressure 101.3 kPa (no correction for oxygen or water content).

5.13.2 From combustion sources:

Temperature 273K, Pressure 101.3 kPa, dry gas; 3% oxygen for liquid and gas fuels.

5.13.3 In the case of the Thermal Oxidiser:

Temperature 273K, Pressure 101.3 kPa, percentage reference oxygen value for the thermal oxidiser to be approved by Kerry County Council.

5.13.4 For odour monitoring by olfactometry:

Temperature 293K, Pressure 101.3 kPa, no correction for oxygen or water content as per relevant process (combustion / non-combustion sources) in accordance with EPA Emissions Monitoring Guidance (AG2).

Amend Condition 5.15

5.15 In the event that the proposed abatement equipment is ineffective for the control of odours from the site, as established by an independent assessment carried out by the Licensing Authority, the said Authority reserves the right to instruct the

Licensee **to direct all odours from the facility through the** thermal oxidiser to the satisfaction of the Licensing Authority.

Reason: To make the new revised licence current.

2. Noise Emissions

The second point of the objection related to noise emissions from the installation. The third party appellant provided records of all the noise complaints they submitted to KCC due to noise originating from the installation. A video of one such event was attached.

The primary sources of noise associated with operation are from agitators, boiler, clarifier, cooling tower, decanter, drum dryer, evaporator, pressure vessel, ring dryer, spray dryer, swing crane and traffic due to deliveries and collections.

The noise impact assessment in the planning application was carried out according to the EPA's Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4). A baseline noise survey was conducted on the Tralee Industrial Estate to confirm it was an 'area of low background noise' and it was not. The noise limits applied were for daytime, evening and night-time of 55 dB $L_{ar, T}$, 50 dB $L_{ar, T}$ and 45 dB L_{Aeq} respectively. The noise impact assessment found the predicted noise levels were above 45 dB L_{Aeq} at night-time but with mitigation measures the plant was expected to be compliant at all noise sensitive locations. To confirm compliance with ELVs for noise, I am recommending the inclusion of conditions for the preparation of a noise management plan and annual monitoring by a competent person(s). This will address the objections to noise in the third party objection.

I recommend the following changes are made to the revised licence:

- The inclusion of a glossary for clarification of new terms.
- Introduce a new condition to include a requirement for annual noise monitoring.
- The introduction of a Noise Management Plan to condition 5 to have proactive and preventative measures in place to avoid noise nuisance from the site.
- Append noise emissions to Schedule A to provide noise ELVs.
- Append noise monitoring to Schedule B to outline monitoring to be carried out.

Recommendation

Insert the following to the GLOSSARY:

Daytime: 0700 hours to 1900 hours

Evening Time: 1900 hours to 2300 hours

Night-time: 2300 hours to 0700 hours

Noise-sensitive location (NSL): Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.

$L_{Aeq,T}$: This is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period (T).

$L_{Ar,T}$: The Rated Noise Level, equal to the L_{Aeq} during a specified time interval (T), plus specified adjustments for tonal character and/or impulsiveness of the sound.

Reason: To provide for clarity.

CONDITION 4 EMISSIONS

Append the following to Condition 4:

4.8 Noise from the installation shall not give rise to sound pressure levels ($L_{Aeq,T}$) measured at NSLs in the vicinity of the installation which exceed the limit value(s).

Reason: To provide for the protection of the environment by way of control and limitation of emissions.

CONDITION 5 CONTROL AND MONITORING

Append the following to Condition 5:

5.17 Noise

The licensee shall carry out a noise survey of the site operations annually. The survey programme shall be undertaken in accordance with the methodology specified in the 'Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)' as published by the EPA.

5.18 Noise Management Plan

5.18.1 The licensee shall prepare, maintain and implement, to the satisfaction of the Licensing Authority, a Noise Management Plan.

5.18.2 The plan shall be submitted within six months of the date of grant of this licence.

5.18.3 The plan shall outline noise reduction and abatement measures.

5.18.4 The plan to reduce noise emissions should include the following mitigation measure(s): abatement and enclosure of operations, processes and equipment giving rise to exceedances of noise limit values measured at noise sensitive locations.

5.18.5 The plan shall be prepared in accordance with the Agency's Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4).

5.18.6 The plan shall be implemented within 12 months of the date of grant of this licence.

5.18.7 The plan shall be reviewed annually.

Reason: To provide for the protection of the environment by way of control and limitation of emissions.

SCHEDULE A

Append the following to Schedule A:

Schedule A.2 Noise Emissions

Daytime dB $L_{A,T}$ (30 minutes)	Evening time dB $L_{A,T}$ (30 minutes)	Night-time dB $L_{Aeq,T}$ (15 minutes)
55	50	45 <small>Note 1</small>

Note 1: During night time hours, there shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise-sensitive location.

SCHEDULE B

Append the following to Schedule B:

Schedule B.2 Noise Monitoring

Period	Minimum Survey Duration
Daytime	A minimum of 3 sampling periods at each noise monitoring location Note 1
Evening-time	A minimum of 1 sampling period at each noise monitoring location.
Night-time Note 2	A minimum of 2 sampling periods at each noise monitoring location.

Note 1: Sampling period is to be the time period T stated as per Schedule A: Noise Emissions, of this licence. This applies to day, evening and night time periods.

Note 2: Night-time measurements should be made between 2300hrs and 0400hrs, Sunday to Thursday, with 2300hrs being the preferred start time.

Reason: To provide for the protection of the environment by way of control and limitation of emissions.

5 Appropriate Assessment

Appendix 1, Table 5 lists the European Sites assessed, their associated qualifying interests and conservation objectives.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the installation, individually or in combination with other plans or projects is likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites at Ballyseedy Wood SAC (Site Code 002112), Tralee Bay and Magharees Peninsula, West to Cloghane SAC (Site Code 002070), Tralee Bay Complex SPA (Site Code 004188), Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (Site Code 004161), Slieve Mish Mountains SAC (Site Code 002185), Lower River Shannon SAC (Site Code 002165), Akeragh, Banna and Barrow Harbour SAC (Site Code 000332), Castlemaine Harbour SAC (Site Code 000343) and Castlemaine Harbour SPA (Site Code 004029).

The BioAtlantis plant is not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it can be excluded, on the basis of objective information, that the installation, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the installation was not required. This determination has been made in light of the following reasons:

- The installation is located in an industrial estate and is not within any European sites and there are no European sites within 1.7 km of the installation. The nearest site is Ballyseedy Wood SAC (002112), located 1.7 km south of the installation.
- All European sites and their qualifying interests are considered outside the zone of

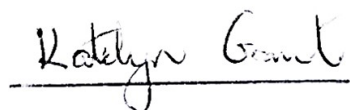
influence of the air emissions arising at the installation.

- European sites and their qualifying interests are considered outside the zone of influence of noise emissions arising at the installation as the nearest European site with noise sensitive qualifying interests is 3.4 km southwest.
- While there is potential for accidents and unplanned releases from the installation, it is considered that the storage, containment, materials handling practices and infrastructure onsite are sufficient to ensure that accidental emissions from the activity will not impact on the qualifying interests of any of the European sites identified.
- Given the nature and scale of emissions, it is considered that the activity in combination with other plans or projects will not have a significant effect on European sites.

6 Overall recommendation and notes

It is recommended that the Agency, in accordance with Section 34 of the Air Pollution Act 1987 as amended, direct Kerry County Council to grant the licence (Reference AP-17-01B) under the Air Pollution Act 1987 as amended to BioAtlantis Ltd., for atmospheric emissions at a site located at Clash Industrial Estate, Clash East, Tralee, County Kerry, subject to the amendments detailed in this report.

Signed

A handwritten signature in cursive script that reads "Katelyn Grant". The signature is written in black ink and is positioned above a solid horizontal line.

Katelyn Grant
Inspector, OES

Appendix 1 Appropriate Assessment

Table 5: List of European Sites assessed, their associated qualifying interests and conservation objectives.

Site Code	Site Name	Distance/direction from installation	Qualifying Interests (* denotes priority habitat)	Conservation Objectives
002112	Ballyseedy Wood SAC	1.7 km South	Habitats Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)* [91E0]	NPWS (2021) Conservation Objectives: Ballyseedy Wood SAC 002112. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
002070	Tralee Bay and Magharees Peninsula, West to Cloghane SAC	3.4 km Southwest	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Coastal lagoons [1150] Large shallow inlets and bays [1160] Reefs [1170] Annual vegetation of drift lines [1210] Perennial vegetation of stony banks [1220] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>) [2170] Humid dune slacks [2190] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0] <i>Lutra lutra</i> (Otter) [1355] <i>Petalophyllum ralfsii</i> (Petalwort) [1395]	NPWS (2014) Conservation Objectives: Tralee Bay and Magharees Peninsula, West to Cloghane SAC 002070. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
004188	Tralee Bay Complex SPA	3.4 km Southwest	Whooper Swan (<i>Cygnus cygnus</i>) [A038] Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Shelduck (<i>Tadorna tadorna</i>) [A048] Wigeon (<i>Anas penelope</i>) [A050] Teal (<i>Anas crecca</i>) [A052] Mallard (<i>Anas platyrhynchos</i>) [A053] Pintail (<i>Anas acuta</i>) [A054] Scaup (<i>Aythya marila</i>) [A062] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Ringed Plover (<i>Charadrius hiaticula</i>) [A137]	NPWS (2014) Conservation Objectives: Tralee Bay Complex SPA 004188. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Site Code	Site Name	Distance/direction from installation	Qualifying Interests (* denotes priority habitat)	Conservation Objectives
			Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Lapwing (<i>Vanellus vanellus</i>) [A142] Sanderling (<i>Calidris alba</i>) [A144] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Turnstone (<i>Arenaria interpres</i>) [A169] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Common Gull (<i>Larus canus</i>) [A182] Wetland and Waterbirds [A999]	
004161	Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA	4.8 km Northeast	Hen Harrier (<i>Circus cyaneus</i>) [A082]	NPWS (2022) Conservation Objectives: Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA 004161. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
002185	Slieve Mish Mountains SAC	3.6 km South	Habitats Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010] European dry heaths [4030] Alpine and Boreal heaths [4060] Blanket bogs (* if active bog) [7130] Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110] Calcareous rocky slopes with chasmophytic vegetation [8210] Siliceous rocky slopes with chasmophytic vegetation [8220] <i>Trichomanes speciosum</i> (Killarney Fern) [1421]	NPWS (2021) Conservation Objectives: Slieve Mish Mountains SAC 002185. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
002165	Lower River Shannon SAC	12.8 km Northeast	Sandbanks which are slightly covered by sea water all the time [1110] Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Coastal lagoons [1150] Large shallow inlets and bays [1160] Reefs [1170] Perennial vegetation of stony banks [1220] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	NPWS (2012) Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Site Code	Site Name	Distance/direction from installation	Qualifying Interests (* denotes priority habitat)	Conservation Objectives
			<p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p>Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]</p> <p>Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410]</p> <p>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0]</p> <p><i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029]</p> <p><i>Petromyzon marinus</i> (Sea Lamprey) [1095]</p> <p><i>Lampetra planeri</i> (Brook Lamprey) [1096]</p> <p><i>Lampetra fluviatilis</i> (River Lamprey) [1099]</p> <p><i>Salmo salar</i> (Salmon) [1106]</p> <p><i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]</p> <p><i>Lutra lutra</i> (Otter) [1355]</p>	
000332	Akeragh, Banna and Barrow Harbour SAC	11 km West	<p>Annual vegetation of drift lines [1210]</p> <p>Salicornia and other annuals colonising mud and sand [1310]</p> <p>Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330]</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p>Embryonic shifting dunes [2110]</p> <p>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]</p> <p>Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]</p> <p>Humid dune slacks [2190]</p> <p>European dry heaths [4030]</p>	<p>NPWS (2017) Conservation Objectives: Akeragh, Banna and Barrow Harbour SAC 000332. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</p>
000343	Castlemaine Harbour SAC	12.5 km Southwest	<p>Estuaries [1130]</p> <p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p>Annual vegetation of drift lines [1210]</p> <p>Perennial vegetation of stony banks [1220]</p> <p>Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</p> <p>Salicornia and other annuals colonising mud and sand [1310]</p> <p>Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330]</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p>Embryonic shifting dunes [2110]</p> <p>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]</p> <p>Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]</p> <p>Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>) [2170]</p> <p>Humid dune slacks [2190]</p>	<p>NPWS (2011) Conservation Objectives: Castlemaine Harbour SAC 000343 and Castlemaine Harbour SPA 004029. Version 2.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>

Site Code	Site Name	Distance/direction from installation	Qualifying Interests (* denotes priority habitat)	Conservation Objectives
			Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0] <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Salmo salar</i> (Salmon) [1106] <i>Lutra lutra</i> (Otter) [1355] <i>Petalophyllum ralfsii</i> (Petalwort) [1395]	
004029	Castlemaine Harbour SPA	12.5 km Southwest	Red-throated Diver (<i>Gavia stellata</i>) [A001] Cormorant (<i>Phalacrocorax carbo</i>) [A017] Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Wigeon (<i>Anas penelope</i>) [A050] Mallard (<i>Anas platyrhynchos</i>) [A053] Pintail (<i>Anas acuta</i>) [A054] Scaup (<i>Aythya marila</i>) [A062] Common Scoter (<i>Melanitta nigra</i>) [A065] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Ringed Plover (<i>Charadrius hiaticula</i>) [A137] Sanderling (<i>Calidris alba</i>) [A144] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Redshank (<i>Tringa totanus</i>) [A162] Greenshank (<i>Tringa nebularia</i>) [A164] Turnstone (<i>Arenaria interpres</i>) [A169] Chough (<i>Pyrrhocorax pyrrhocorax</i>) [A346] Wetland and Waterbirds [A999]	NPWS (2011) Conservation Objectives: Castlemaine Harbour SAC 000343 and Castlemaine Harbour SPA 004029. Version 2.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Appendix 2

Figure. 1 Location of BioAtlantis site boundary in red and nearby sensitive receptors.

