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31st January 2022.

Ms. Pamela McDonnell,
Programme Manager,
Environmental Licencing Programme,
Office of Environmental Sustainability,
Johnstown Castle Estate,
Co. Wexford,
Y35 W821

By EDEN

Re: Response to Further Notice under the EPA (Industrial Emissions) (Licensing) Regulations 2013, in respect of a licence application from William Connolly & Sons Unlimited Company for an installation located at William Connolly & Sons Unlimited Company, Grange Lower, Goresbridge, Kilkenny, R95 EKH4, dated 24th January 2022

Dear Ms. McDonnell,

Please find attached Connolly's Red Mills response to the EPA's further notice in accordance with the EPA (Industrial Emissions) (Licensing) Regulations 2013, in respect of a licence application from William Connolly & Sons Unlimited Company (hereafter referred to as Red Mills), dated 24th January 2022.

Since our correspondence on the 7th January 2022, Connolly's Red Mills have sought to complete the proposed next steps detailed in the Additional Information Report by our consultants Malone O'Regan Environmental (MOR) and items detailed in Agency's letter dated 24th January 2022 in a systematic manner. Therefore, please see below and in the attached documents responses to the following:

1. Response to Item 1 of the Agency letter dated 24th January 2022;
2. Response to Items 5 and 6 of the Agency's letter dated 24th January 2022:
    - Updated Attachments;
        - Raw Materials, Intermediates and Products; and,
        - Waste Generated.
3. Response to Item 7 of the Agency letter dated 24th January 2022:
    - Information regarding the integrity of the ICW;
4. Proposal regarding Air Dispersion Modelling and Assessment;
5. Proposal regarding Noise Model and Impact Assessment.

1 Response to Item 1

The Agency's letter dated 24th January 2022 requested information stated below:

> *'1: Confirm the main Class of Activity under the First Schedule of the EPA Act 1992, as amended, that William Connolly & Sons Unlimited Company are applying for.'*

In March 2018 submission it was stated that Red Mills IEL should be issued under Class 7.8 (a) (ii). However, the 7 a) ii) Class of Activity only details vegetable raw materials. While currently only vegetable raw materials are utilised onsite by Red Mills, to enable a continued customer-centric and adaptive business and to avoid potential limitations in developing future products, Red Mills require that the Class of Activities carried out at the Site will be revised to:

> ***'7.8 (a) (iii): Food and Drink:***
>
> *7.8 a) The treatment and processing, other than exclusively packaging, of the following raw materials, whether previously processed or unprocessed, intended for the production of food or feed from:*
>
> *(iii) animal and vegetable raw materials, both in combined and separate products, with a finished product production capacity in tonnes per day greater than:*
>
> *75 if A is equal to 10 or more; or*
>
> *(II) [300-(22.5 x A)] in any other case, where 'A' is the portion of animal material (in percent of weight) of the finished product production capacity.'*
>
> *(b) For the purposes of clause (a), packaging shall not be included in the final weight of the product.*
>
> *(c) Clause (a) shall not apply where the raw material is milk only'*

In practice, performance animal feed, especially for racing horses, is produced per specific recipe for different clients, and there is a possibility that small amounts of animal raw materials will be required in the future, for example whey. Therefore, 7.8 (a)(iii) class of activity is considered to be more appropriate for Red Mills activities.

2 Response to Items 5 and 6

The Agency's letter dated 24th January 2022 requested information stated below:

> *'5. An updated Attachment 4.6.2 - Raw Materials, Intermediates and Products.'*
>
> *'6. An updated Attachment 8.1 - Waste Generated.'*

Please find attached updated Raw Materials, Intermediates and Products (updated items, shaded orange), refer to Attachment 1 and Waste Generated (Attachment 2) Attachments to include updated fertiliser stocks, diesel (MGO), LPG and wastes.

Fertilisers are stored onsite. However, the EC (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2006 do not apply to the Facility, as there are no substances with specified danger categories kept onsite in quantities above thresholds listed in Schedule 1.

With regards to MGO and LPG, onsite dryers were converted to LPG (with exception of Dryer 2), however their associated oil tanks will remain in place and will be decommissioned and used for storing firefighting water strategically across the site. Only oil tanks serving the boiler and Dryer 2 are currently still in use, which will continue until their conversion to gas that will happen over the coming months.

3 Response to Item 7

The Agency's letter dated 24th January 2022 requested information stated below:

> *'7. An assessment of the integrity of both the existing Integrated Constructed Wetland (ICW) and the ICW Extension.'*

We have attached the following documents:

- Confirmation of construction of ICW 1 to earthwork specifications by the appointed Contractor as detailed in IE Consulting Ltd. report (Attachment 3); and,
- Falling head permeability test results by Red Mills / IE Consulting Ltd. on ICW 1 (Attachment 4) to confirm the construction to earthworks specifications and show that the minimum basal permeability was achieved.

The ICW system was constructed entirely above existing ground levels using suitable sub-soil material. This was to ensure adequate gravity flow through the various elements of the ICW system and to ensure the outfall can discharge during periods of elevated water levels in the receiving watercourse.

The ICW system was constructed to a particular earthworks specification detailed in Appendix B of the planning application 13/196 and Appendix A of planning application 19/235 to ensure a minimum basal permeably of $1x10^{-8}$ m/s over a thickness of 0.3m over 0.75m of undisturbed subsoil and planted to specific specifications (Appendix C of 13/196 and Appendix B of 19/235). The earthworks and planting specifications from the most recent planning application are attached in Attachment 5.

The earthworks specification required that the subsoil liner in the floor, and the inner banks of each cell and the pond areas all were compacted to the required standard. The specification also detailed the methodology including necessary ground pressure values of machinery to ensure that the desired density and sealing would be achieved.

Each layer comprising the compacted subsoil liner was fully compacted prior to placement of the next layer. Once the full depth of liner was constructed, the inside floor and bank slopes were smoothed and compacted (plastered) with the track machine using a remoulded subsoil.

The completed falling head permeability test results by Red Mills / IE Consulting Ltd. on ICW 1 validate the construction of the ICW to the stated earthworks specifications and that the minimum basal permeability requirement was achieved.

The above, combined with surface water sampling of the receiving watercourse validate that water discharged to the ICW system does not migrate from the ICW cells into groundwater, and/or surface water prior to discharge from the ICW outfall.

At this juncture, the second ICW (ICW 2) has not yet been commissioned. A falling head permeability test is scheduled to be undertaken on ICW 2 prior to commissioning. The results of the falling head permeability test to be undertaken by IE Consulting Ltd. and a letter of confirmation of construction as per the earthworks specifications by the Contractor will be furnished to the EPA prior to the commissioning of the second ICW.

A Shut-off valve and monitoring chamber will be installed at the outlet from the expanded ICW. This work will be completed by end of February 2022 and will provide one (1No.) monitoring / discharge point for the ICW system.

Reconfiguration of onsite drainage network to ensure all stormwater from the Site will drain into the expanded ICW is ongoing. This will include the installation of a new large-scale interceptor that will replace two existing interceptors, and as such will only further improve the quality of the stormwater discharging to the ICW. Works are scheduled to be completed by end of April 2022.

4 Proposal regarding Air Dispersion Modelling and Assessment

Scenario 1 presented in the Air Dispersion Modelling Report submitted to the EPA in November 2021 covered Harvest 2021, and since then multiple changes in emission points were implemented, therefore this Scenario will not be further refined.

Scenario 4 presented in the same Air Dispersion Modelling Report is no longer relevant, as Dryers 1 and 3, as well as Oat Cleaning Process have now been removed from the IE Licence, as per letter submitted to the EPA on 7th January 2022.

Based on these amendments, which will result in removing a total of 6No. proposed major emission points to air and taking cognisance of the feedback from the EPA received during online meetings and phone calls in December 2021 and January 2022, the revised air dispersion model will include scenarios, emission points and pollutants detailed below.

In addition, sensitive receptors for SAC will be relocated to the SAC boundary closest to the Site boundary, as requested by the EPA.

4.1 NOx model (updated to include burners)

The model will be prepared as follows:

- As there is no monitoring data available for the burners, manufacturer's specifications have been obtained and will be used for determining NOx emissions, please see below.
- There are a total of 6 new burners associated with replacement Dryer 6, which will be fuelled by LPG, designed to Class 1 EN 267 – EN676 standard which sets NOx emissions per kWh. Based on this, mass emissions for each burner will be calculated. These burners are 1.97MW each, therefore qualify as major emission points, with combustion gases emitted through dryer stacks.
- There are a total of 4 burners associated with Dryers 2, 4A, 4B and 5, with thermal input between 1.6MW and 3.9MW[1], therefore all these qualify as major emission points, with combustion gases emitted through dryer stacks. However, these are designed to Class 2 EN 267 – EN676 standard, which sets NOx limit per kWh. Therefore, mass emissions will be calculated accordingly.
- As the boilers run in duty and back-up mode, and load on boilers is especially low in the summer months (due to lower feed demand, as animals are typically grass fed at that time of year (i.e. during the harvest season) when the above burners are operating, the model will be set to operate as follows:
    i. Both boilers operating outside harvest season.
    ii. Only duty boiler operating during harvest season.
    iii. Burners operating during the harvest season. Depending on the results for 12 weeks, more realistic 8-week period may be run as well.

The same model will be run with volumetric flows (boilers & burners) at 75% for sensitivity analysis.

4.2 SO_2 model (new)

Medium Combustion Plant directive sets SO_2 limit for gaseous fuels other than natural gas, which is applicable to combustion sources at Red Mills as these were fuelled by LPG. For new plant this is 35mg/Nm^3 and for existing plant this is 200mg/Nm^3. In MOR experience, SO_2 emissions from the existing boilers running on LPG are as low as 6mg/Nm^3. As modelling at

[1] Please note that detailed information on the burners for the existing dryers (manufacturer's specification and the manual) was identified since the letter on the 7th January was submitted to the EPA, therefore exact thermal input is now known.

the limit of 200mg/Nm^3 could potentially result in breaches of AQS, MOR will propose a more realistic ELV for the existing boilers and burners.

Except for emission rates, operating regime in this model will be the same as NOx model, as it applies to the same emission points (2 x boiler, 4 x existing burners, 6 x new burners).

The same model will be run with volumetric flows (boilers & burners) at 75% for sensitivity analysis.

4.3 PM model – Scenario 2 – Harvest 2022 (updated)

This scenario will present configuration of emission points that will be in place for Harvest season 2022. As this scenario showed exceedances of 75% of short-term AQS along the site boundaries, (however, not at sensitive receptors), the modifications in operating regime presented below will be included in the model.

In this Scenario, Feed Mill emission points were run at 365/7/24, which is a significant overestimate. In addition, dryers were run for 12 weeks, which is also an overestimate. SCADA analysis showed that Dryers operate typically 8 weeks a year, and Feed Mill operates ca. 35% of hours in a year[2]. However, it is not possible to limit operation of the Feed Mill to specific times in a day, week or year; therefore, some typical operating scenarios are proposed to be modelled to demonstrate more realistic PM process contribution:

- Feed Mill:
  - 01 October through 30 April, Feed Mill operating 5 days a week, 24hr a day, when there is a higher demand for manufactured animal feed;
  - 01 May through 30 September, Feed Mill operating 5 days a week, 16hr a day, as feed demand lower in the summer months when animals are mostly outdoors, grass-fed;
  - This amounts to ca. 57% of total hours in a year, still a significant overestimate of overall average operating hours of 35% of total hours in a year.
- Dryers operating for 8 weeks; two sub-scenarios are proposed to cover all weather conditions during this period – July/August and August/September.

The same model with all sub-scenarios will be run with volumetric flows at 75% for sensitivity analysis.

4.4 PM model - Scenario 3 – Post Harvest 2022 (updated)

The Feed Mill emissions were shown to cause exceedance of relevant short-term AQS at the western site boundary in a worst-case scenario, which is not realistic as it assumed ALL emission points were to operate simultaneously 365/7/24. However, the AQS was not breached at sensitive receptors. Therefore, in Scenario 3 some changes to Feed Mill stacks and abatement equipment were proposed. The process equipment assessment is currently being completed, to refine the proposed changes. The following updates to Scenario 3 will be modelled:

- Scenario 3.1 – Feed Mill stacks/abatement changes at 365/7/24, as worst case.
- Scenario 3.2 – Feed Mill stacks/abatement changes as per above operating regime.

In both sub-scenarios Dryers will operate 12 weeks of harvest as worst case.

The same model will be run with all sub-scenarios with volumetric flows at 75% for sensitivity analysis.

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[2] *Averaged over the 5 most recent years, various Feed Mill processes operate between ca. 7% and 56% of the modelled 8760 hours per year. Overall average is ca. 35%.*

5 Proposal regarding Noise Model and Impact Assessment

A revised noise model and impact assessment will be undertaken to include the revised future development onsite and taking cognisance of the following:

- Removal of Dryers 1 and 3;
- Removal of Oat Cleaning Stack;
- Cognisance of above Air Model, where applicable;
- Revised operational hours, where applicable; and
- SAC boundary.

It is proposed to update the noise model with regards to the above. In addition, receptors will be placed to represent the nearby SAC that will be subject to separate assessment. The source assessment and noise model will be reviewed and items that require mitigation will be identified to comply with typical EPA limits at receptors of:

- Daytime (07:00 to 19:00) - 55dB $L_{Ar,T}$;
- Evening time (19:00 to 23:00) - 50dB $L_{Ar,T}$;
- Night-time (23:00 to 07:00) - 45dB $L_{Aeq,T}$.

We trust the above is satisfactory to the Agency and we would like to state that both we and our consultants are advancing the items within the letter dated 24th January 2022 to ensure the EPA's determination of the application by the 31st March 2022.

Connolly's Red Mills and Malone O'Regan Environmental remain available to clarify any further queries regarding this application.

Yours sincerely,

EUGENE BRENNAN B.Agr.Sc.

EHS Manager