Cyfoeth Naturiol Cymru
Natural Resources Wales

Our Ref: EPR/XP3830UR

Mr Neil Shawcross
The First Milk Cheese Company Limited
Haverfordwest Creamery
Pembroke Road
Merlin's Bridge
Haverfordwest
Pembrokeshire
SA61 1JN

Date: 3rd May 2024

Dear Mr Shawcross

EPR- XP3830UR First Milk (Haverfordwest Creamery) Improvement Conditions Review

Thank you for submitting First Milk's updated response to discharge the requirements of Improvement Condition (IC) 7 of the environmental permit EPR/XP3830UR.

- Email received on 09/02/2024 from Neil Shawcross (First Milk) with an updated response to IC7.

Documents received from First Milk:

- SHE-POL-015 Odour Management Plan v4.pdf.

As you are aware, ICs were included as part of a recent permit review and variation (V006 issued 08/04/2022) following the publication of the revised Best Available Techniques (BAT) Reference Documents (BREF) for Food, Drink and Milk Industries. Improvement Conditions have been included to bring the site up to the necessary standard.

During the permit variation V006, an Odour Management Plan (OMP) was not provided as part of the requested information. Therefore, IC7 was included in the environmental permit requiring an Odour Management Plan (OMP) to be submitted to NRW for review.

IC7 - The Operator shall submit to Natural Resources Wales an updated written procedure(s) following additional investigatory work describing how they intend to meet the following BAT requirements in accordance with requirements specified within:
• BAT Conclusion 15 of the Food, Drink and Milk Industries BRef Document (EU 2019) – In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the

environmental management system, that includes all of the following elements:

- a protocol containing actions and timelines
- a protocol for conducting odour monitoring. It may be complemented by measurement/estimation of odour exposure or estimation of odour impact.
- a protocol for response to identified odour incidents e.g. complaints
- an odour reduction programme designed to identify the source(s), to measure/estimate odour exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures.

We have reviewed the updated response provide in relation to IC7 with assistance from NRW's Air Quality and Noise Team (AQNT).

Our review has been undertaken using relevant guidance including: the Best Available Techniques Reference Document for the Food, Drink and Milk Industries (2019); Best Available Techniques Reference Document for Waste Treatment (2018); H4 Odour Management How to comply with your environmental permit (H4), and the Environment Agency's Odour Management Plan Template Final V2 05/05/21.

NRW acknowledges that the OMP (SHE-POL-015 Odour Management Plan v4.pdf) has been updated and addresses some of the comments raised in NRW's response letter, however not all updates are sufficient. The issues highlighted below must be addressed in the site OMP to ensure that odour emissions from the site are adequately controlled.

It is NRW's understanding the ETP is undergoing commissioning work for the replacement Membrane Bioreactors (MBR) and will result in the DAF 2 coming offline. It unknown how these changes will affect the odour sources and control measures detailed within the OMP. The OMP will need to be reviewed and updated accordingly.

1. Site and receptors

- NRW identifies the nearest receptor (residential property) approximately thirty metres to the south of the Creamery site boundary. Review receptor distances and update accordingly.

- Merlin's Bridge Village Hall and play area is situated approximately 140 metres to the south of the creamery site boundary and may be considered a sensitive receptor due to the presence of members of the public utilising the space. Consideration with respect to the likely sensitivity in accordance with H4 guidance should be given to this location within the site OMP.

2. Sources

- The OMP should include a detailed site plan identifying individual sources rather than aerial photographs highlighting the entire site.

Creamery

- Section 6.A.2 of the OMP states that in the event of ammonia release from the refrigeration process associated with the creamery, this would be drawn out and vented at high level to aid dispersal and minimise potential impacts at receptors. Given that accidental releases of ammonia generally represent a potentially significant risk to both habitats and human health, we would expect additional details regarding how any releases would be quantified and managed. Specifically, provision of evidence that dispersion from the high level vent is suitable to reduce ground level concentrations to acceptable levels when compared to appropriate assessment levels. However, no additional risk assessment associated with this scenario is presented in the OMP, or reference to any additional risk assessment report carried out in addition to the OMP.

ETP

- Section 6.B.5 includes a table of controls and mitigation measures for odours originating from the ETP. While this table includes a hedonic tone score, it does not include any indication of the odour character associated with emissions from each identified activity/process. Wastewater from the cheesemaking process contains the residues of dairy raw materials and may include fats, proteins, lactose, lactic acid, salt and mineral substances. These components act as substrates for the growth and metabolism of microorganisms whose products give rise to sulphur compounds, alcohols, aldehydes, ketones and various other VOCs which are responsible for the odours associated with a dairy effluent treatment plant (ETP) with each having a distinct “character” e.g. the “fishy” odour of trimethylamine or the fruity, sweet odour of the ketone 2-heptanone. For this reason, inclusion of an odour description / characteristic obtained from onsite odour surveys can facilitate identification of the likely source of an odour and therefore identify areas and processes likely to be the cause of complaints from offsite receptors or from issues identified during site surveys.

- When deployment of a spill kit is required to contain spillages from the ETP (see Section 6.B.5 of the OMP), the OMP should make clear whether this may represent an odour risk and if so, what steps could be employed (where practicable) to mitigate impacts at receptors during containment and disposal using the spill kits. Location of spill kits must be identified on a plan.

- The table of controls in section 6.B.5 of the OMP states that while the sludge thickener includes a filter, it is currently not in operation and has therefore been classified as low risk with no associated hedonic score. The OMP should clarify whether the sludge thickener will not be operational going forward or in the event that it is recommissioned, whether it is likely to be considered an odour source. Some additional information regarding the filter on the sludge thickener should be included where this is installed for mitigating odours e.g. maintenance and/or replacement schedule etc.

- It is not stated whether any emissions to air from the enclosed Dissolved Air Flotation (DAF) wastewater treatment unit (identified as DAF 1 in Section 6.B.5 of the OMP) are treated/filtered prior to release. The site OMP should be updated to include any control measures used to mitigate any potentially odorous emissions from the enclosed DAF unit.

- The anaerobic zone and anoxic zones of the ETP have not been detailed in the OMP. Update the OMP to include these areas, in particular the odour sources and odour control measures tables.

- In the event that site operations in accordance with the submitted OMP do not prevent odour nuisance at external receptors from occurring, we would recommend the site considers implementing additional techniques to minimise odour such as those identified in Section 2.3.5.2 of the Best Available Techniques (BAT) Reference Document for Waste Treatment which includes using covered or enclosed facilities for the storage, handling, collection and treating of odorous waste (including waste water and sludge) where these are not already employed.

3. Mitigation – Appropriate Measures

<u>During transfer of sludge from the sludge tank to road tanker</u>

- It is not clear the effectiveness of the charcoal filters based on the capacity of the tank, how the head space is maintained within the tank to ensure the filters do not become overwhelmed.

- There is no indication within the OMP of the location of the transfer process, timings etc, neither is there a confirmation whether the transfer is undertaken in one location and associated with one process i.**e.** the transfer of sludge.

4. Odour Monitoring

- Control measures for both the creamery and the ETP include a perimeter walk with “sniff testing” at intervals of six monthly and twice daily respectively. Section 6.B.6.1 states that individuals carrying out sniff testing shall be selected from a pool of employees who do not work in the ETP to avoid using acclimated individuals who may be less sensitive to odours. While Section 6.B.6.1 indicates that individuals undertaking sniff testing will be deemed suitable following a suitable “sensitivity test”, no additional details are provided as to the nature of the test(s) e.g. odorant pens (n-Butanol) etc. or whether any records will be available to identify suitably “sensitive” individuals along with any associated rota system to avoid acclimation to any odours that testers may be exposed to during routine surveys. Details of the sniff testing protocol e.g. duration of walk, set locations for stops along the route (if any), duration of any stops, training (including records), rotas etc. have not been included in the OMP. Where specific details are not included in the OMP due to their inclusion in a wider site EMP or specific operational or guidance note, a reference should be made to the relevant document in the OMP.

- Section 6.5.B of the OMP (final paragraph) states that a cost benefit analysis (submitted to NRW) for covering the balance tank did not meet the requirement for best available techniques not entailing excessive costs (BATNEEC) and maintains that this represents a low-risk odour source. Please provide evidence/correspondence between First Milk and NRW on this matter (including the date this was agreed by NRW).
- Section 6.B.2 of the OMP states that the treated effluent divert tank is open and maintains that this it typically kept near empty. Based on the provided information being correct and representative of typical operation, unless otherwise specifically identified during a site survey or by a suitably qualified individual as an odour source likely to contribute to odour issues at nearby receptors, the assumption that the treated effluent tank is a low risk odour source is not considered contentious in this instance.

- Section 6.B.3 outlines the "odour pathway" refers to prevailing winds from the southeast based on on-site weather station observations and includes a wind rose for five years of meteorological data (wind speed and direction). No details of the weather station make/model etc., monitoring location (beyond being situated within the ETP), or the specific period covered by the data presented in the wind rose is provided in the OMP. Update the OMP to include these details including confirmation that it is situated in accordance with best practice e.g. Appendix I of the Met Office Observer's Handbook[1].

- Section 6.B.5 of the OMP should clarify whether the on-site weather monitoring station is covered by a third party service/maintenance contract or whether any maintenance and/or calibration, as required by the manufacturer, is carried out in-house. If maintenance and calibration is carried out in-house, details should be included in the OMP or a reference to the appropriate documentation and records should be included in the OMP.

- Given that odour nuisance assessment (H4[2]) is based on a percentile of hourly observations, while the prevailing wind direction provides a useful indicator of frequency potential receptors are likely to be downwind of an odour source, real time high temporal resolution measured (or representative) site meteorological data should be used in any subsequent investigation of possible sources following a report of an offsite odour issue or identification of odours by site staff during site perimeter odour monitoring.

5. Odour Reporting

- It is still unclear the timeframes for investigating complaints e.g. immediately investigate upon receipt of a complaint, within 2 hours of

[1] London, Meteorological Office. "Observer's Handbook", 4th edition. London, HMSO, 1982 (reprinted 2000).
[2] Environment Agency (March 2011). "Additional guidance for H4 Odour Management, How to comply with your environmental permit", accessed March 2024 https://assets.publishing.service.gov.uk/media/5a7ba9a2ed915d1311060b16/geho0411btqm-e-e.pdf

reporting to NRW etc.

6. Maintenance and responsibilities

- It would be advantageous to make specific reference to any maintenance procedures and associated documents within the OMP where these operations have a direct impact on odour reduction strategies or where they relate to emergency maintenance to address abnormal operations that could result in increased odour releases, odour production or both.

- Details of staff training are lacking in the OMP.

Please review the comments above and update the OMP as necessary. You will need to review and submit a response/updated document to NRW by the 24/05/2024 (unless otherwise agreed in writing with NRW).

Yours sincerely

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Lead Specialist – Industry Regulation

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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi.

Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.