Installation of a new R&D Pilot Plant at Wyeth Nutritionals Ireland Limited (P0395-03)

Dear Sir/Madam

Further to discussions with the EPA over the last number of months we are writing to inform you of the following change we are proposing to make at our Askeaton facility:

- Construction of a new R&D Pilot Plant facility

Please find attached plan drawing (Appendix A) showing the location of the new building. We have received planning permission for the development from Limerick County Council (Planning Reference Number 16/249). An EIA was not required as confirmed in writing by the Local Authority (see Appendix B).

We request that the above change is accommodated by way of a Technical Amendment. While we understand that the change cannot be accommodated under the current licence we believe that the changes required are technical in nature and that the overall impact of the licensed facility will actually reduce due to the requested changes.

BACKGROUND/PROCESS DESCRIPTION

We are planning to expand our R&D Centre in Askeaton by installing a new Infant Formula Pilot Plant. The existing site has a manufacturing facility with ancillary plant supporting the manufacture of infant nutrition products. This is an important development for the site and confirms Nestle's commitment to the expansion of R&D facilities in Askeaton. Please note that the new facility will not produce finished product and will only be used for R&D purposes.

The new pilot plant process is similar to other processes already on site. It will be installed in a dedicated building and will consist of the following areas:

Wet processing area This area will be used for recombination and blending of ingredients including protein and carbohydrate powders, oils, minerals and vitamins. It will have the following equipment:

- vacuum mixer;
- 4 x 1300 litre storage tanks and pumps;
- 1000 kg/h pasteurising plant;
- homogenizer and heat exchanger for cooling;
- evaporator for concentration prior to spray drying.

See *Diagram 1: Wet Processing Area* below.

Protein and carbohydrate powders are purchased from suppliers in 25 kg bags. These bags are tipped into a funnel on the side of the vacuum mixer. Oils are brought from the main factory in totes, plastic containers and drums and mixed together in a mobile blend tank in the pilot plant. The oil blend tank is then connected to the vacuum mixer and the oil blend is added.

Vitamins and minerals are weighed out from small packs purchased from suppliers. They are dissolved in a 30 litre vessel, also connected to the vacuum mixer and then added to the mixture.

During the dissolving process the mixture is recirculated. The mixture is then stored in the storage tank.

The mixture then passes through a plate heat exchanger for heat treatment, a homogeniser and a cooler. The cooled product is then stored in another storage tank prior to evaporation.

The product then enters the evaporator for concentration, before spray drying.

The product then enters a buffer tank, receives heat treatment and is pumped at high pressure to the spray dryer for spray drying.

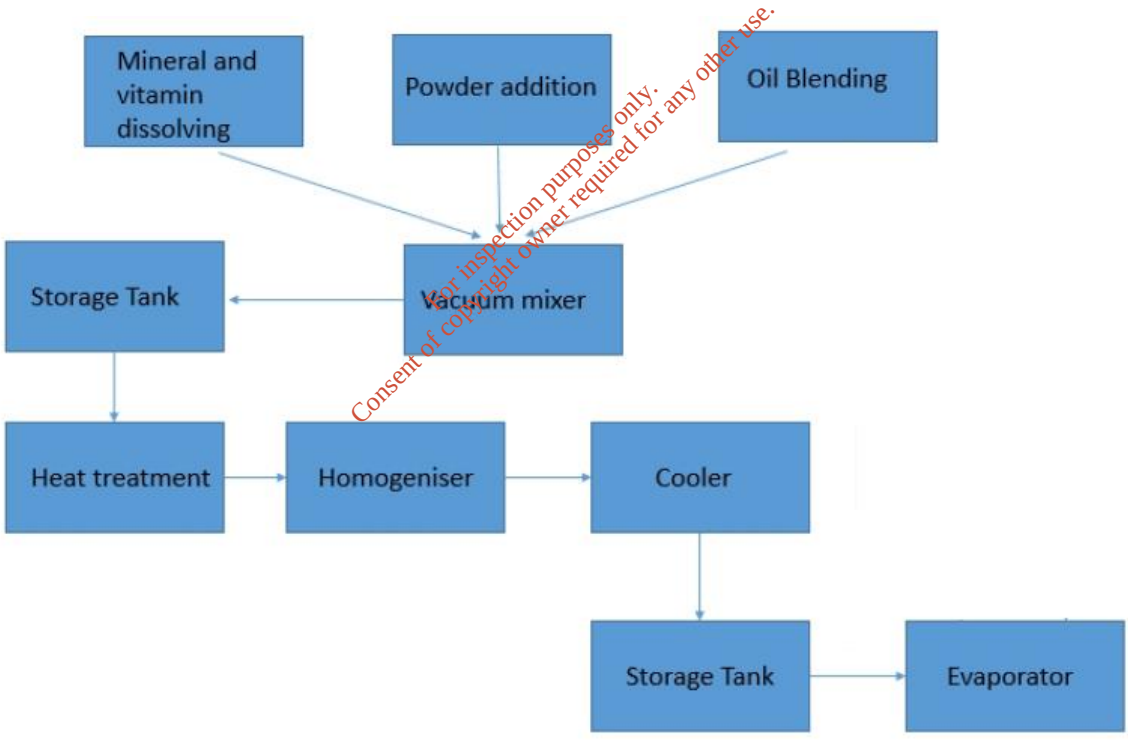

Diagram 1: Wet Processing

<u>Dry processing area</u> This area is used for drying and has the following equipment/areas:

- 100 kg/h powder output spray dryer;
- internal and external fluid beds for removing final percentage of moisture;
- 25 kg bag filling area.

See *Diagram 2: Dry Processing Area* below.

Fines pass through a cyclone where the majority are re-injected into the spray dryer agglomeration zone. Any very fine particles leaving the cyclone subsequently pass through a baghouse filter which removes the majority of them. Up to 15 mg/m^3 of particulate will be emitted through the baghouse filter.

Some of the powders from the bags are manually filled into cans which are then filled with inert gas using dedicated can gassing equipment.

A laminar flow cabinet will be used for the weighing out of vitamins and minerals.

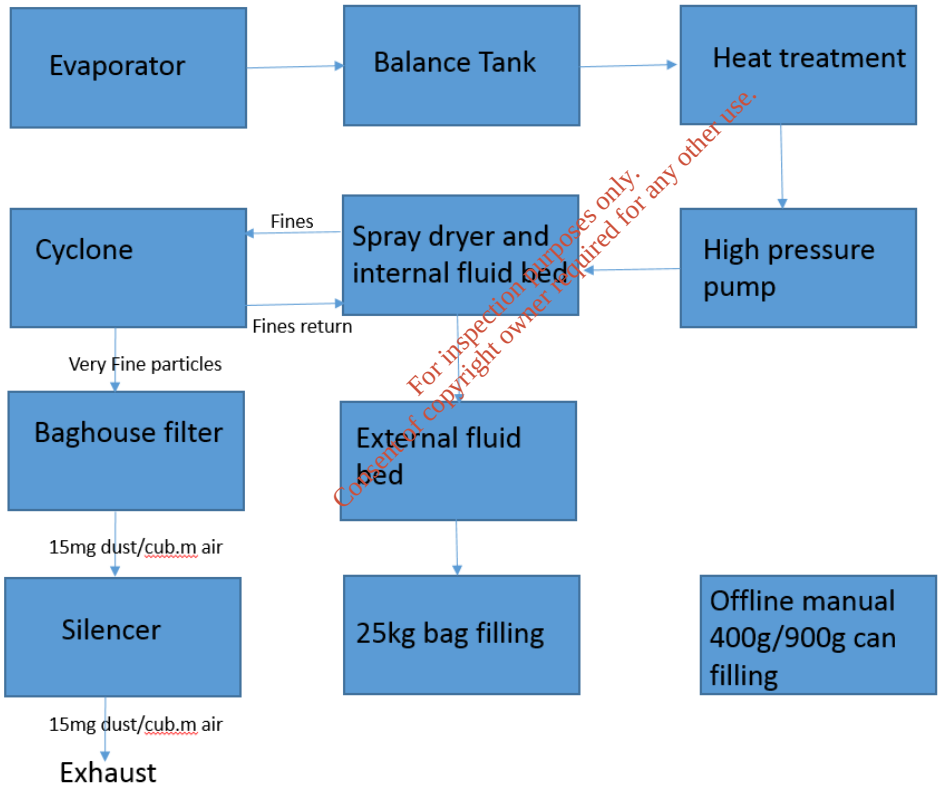

Diagram 2: Dry Processing

EMISSIONS TO ATMOSPHERE

There will be one main emission point to atmosphere from the new building (A2-8). We have completed Tables E.1(ii) and E.1(iii) (see Appendix C). There will also be a number of minor emissions and these are included in Table E.1(iv) (see Appendix C).

Please note that as part of this application we can confirm that emission points A2-2 and A2-5 will no longer be required and can be removed from our licence. Currently the licensed particulate 'bubble limit' for our site is 20.3 kg/h. With the addition of our new emission point A2-8 our 'bubble limit' for the site is now 17.02 kg/h, a reduction of 16%.

We have compared the current licensed scenario with the scenario post the removal of A2-2 and A2-5 and the addition of A2-8 by having air dispersion modelling carried out. Please see report on modelling in Appendix D. In summary, when comparing results of existing emissions with the proposed emissions the modelling shows:

- there is a 13% decrease in ambient PM_{10} concentrations;
- there is a 10% decrease in ambient $PM_{2.5}$ concentrations.

PROCESS EFFLUENT EMISSIONS

The pilot plant will generate a maximum of 80 m^3/d for discharge to the on-site treatment plant. Effluent from the Pilot Plant will be similar in nature to effluent from the existing site. Currently the site wastewater treatment plant (WWTP) treats an average of 1,570 m^3/d of process effluent. The Pilot Plant will only add an extra 5.3 % to that load.

The current licence flow emission limit value is 2,800 m^3/d. Flow from the new facility will only account for 2.8% of that limit. Therefore, no upgrade to the existing WWTP is required because of the new facility. Furthermore, no changes are required to the current emission limit values as specified in the IE licence for treated process effluent emissions to the River Deel.

STORMWATER EMISSIONS

We can confirm that as the current area being developed is already hard standing there will be no increase in the volume of Stormwater emitted from the site.

APPROPRIATE ASSESSMENT

Please find attached as Appendix E the Appropriate Assessment carried out in relation to this development.

NOISE EMISSIONS

We have had a noise emissions report completed and this is included as Appendix F. In summary, the impact on noise emissions from the site will be imperceptible due to the installation of the new facility.

BAT

Variable speed drives will be used to reduce energy consumption. This will allow electricity consumption to be reduced when a lower output is required. This is much more energy efficient than running the pump at a fixed speed and regulating the flow with a back pressure valve.

Electric motors will be IE3 and IE4 rated to reduce power consumption.

Wet process CIP solutions will be reused by capturing acid and caustic rinses. This means that the plant's water and chemical usage is reduced. Energy costs are also reduced since the CIP tanks are jacketed, and thus less heat is lost between one CIP clean and the next.

A cooling tower is used to reduce cooling water consumption in the plant. Cooling water runs in a loop between the process where it absorbs heat, and the cooling tower where it rejects the heat into the environment. Chemical dosing will take place into the cooling tower to control microbiological growth.

Condensate will be sent back to the boiler where it will be used as feedwater. This reduces energy use since the condensate is already warm and does not need subsequent demineralisation.

The evaporator will be equipped with thermal vapour recompression in order to reduce steam consumption. The evaporator will use some condensate to preheat the incoming product to reduce steam consumption.

Tanks/pipes which are foreseen for warm or cold storage/transport will be jacketed.

Equipment will be switched off when it is not required.

If you have any further questions please do not hesitate to contact the undersigned.

Closure……

Appendix A – Location of New Pilot Plant

Appendix B – Limerick CC Letter

Appendix C – Emissions Tables

Appendix D – Air Dispersion Modelling

Appendix E – Appropriate Assessment

Appendix F – Noise Report