



Amendment Report

Department initiated Amendment

Part V Division 3 of the *Environmental Protection Act 1986*

Licence Number	L8015/2003/4
Applicant	Mundella Foods Pty Ltd
ACN	055 862 774
File number	2010/002296-1
Premises	Mundella Foods 46 Randell Road MARDELLA WA 6125 Legal description – Lot 2 on Plan 51860 as defined by the premises map attached to the revised licence
Date of report	09/07/2024
Proposed Decision	Licence granted

1. Amendment description and background

This amendment is made pursuant to section 59 and 59(B) of the *Environmental Protection Act 1986* (EP Act) to amend the existing licence issued under the EP Act for a prescribed premises as set out below.

In completing the amendment documented in this report, the department has considered and given due regard to its regulatory framework and relevant policy documents which are available at www.wa.gov.au/service/building-utilities-and-essential-services/integrated-essential-services/dwer-regulatory-documents.

Background

Mundella, a milk processing facility located on Lot 2 on Plan 51860, near Mundijong approximately 12 km west of Jarrahdale, has been in operation for over 40 years.

The premises and wastewater disposal areas are located approximately 140m north of Mundella Brook. The brook is an ephemeral waterway that enters the Serpentine River to the south of the site. The Oaklands Main Drain runs on the western corner of the disposal area and most of the escarpment flows accumulate to Manjedup Brook, Cardup Brook and Beenyup Brook, where they traverse the Swan Coastal Plain in an east-west direction, and discharge to the Oaklands Main Drain. The previous disposal area is mapped as a Multiple Use Category wetland, and a portion of which is within an Environmentally Sensitive Area (ESA) associated with a Conservation Category Wetland.

Mundella Foods has recently been sold, with the new owners acquiring the business (and company entity) in December 2023, therefore no transfer application was required.

Mundella produces a range of yoghurts, cream and a selection of cheese. The processing facility consists of a factory with cooler room, milk storage, and wastewater management infrastructure (factory drains, grease traps, sump tank and irrigation tank). Wastes produced in the process include dairy solid waste, dairy liquid waste, whey and washdown water.

Wastewater is not treated to any degree before being irrigated to adjoining lots and presents an environmental risk due to its extremely high salt content, high pH, BOD and nutrient (phosphorous) if applied at a rate and in a manner that is not able to be assimilated by the harvesting of the irrigated pasture or crops.

The existing licence, L8015/2003/4, held by Mundella Foods Pty Ltd (licence holder) for the Mundella Foods (Mundella, the premises) is due to expire on 14 July 2024. The licence holder received a licence renewal notice on 13 February 2024 requiring a renewal application to be submitted by 31 March 2024 to allow sufficient time for the department to assess and process the application before the licence expired. The notice required the licence holder to include critical information as part of the application, being:

- that the application must be accompanied by a proposal to submit a works approval application for the installation of a suitably designed wastewater treatment system
- that the application be accompanied by a Wastewater Plan and an updated Nutrient Irrigation Management Plan (NIMP)
- provide evidence that Mundella Foods Pty Ltd has legal access (lease) to all wastewater disposal areas
- provide evidence the Mundella Foods Pty Ltd has a groundwater licence for the take of water for use in milk processing activities that are occurring on its premises (Lot 2)

The licence holder received several reminders from the department to submit the renewal application; however, the application and the key requested information was not received.

As there is now insufficient time for the department to process a licence renewal application before the July expiry date, the delegated officer has determined to undertake a department-

initiated amendment to extend the expiry date of the licence, update the licence to the most recent format, change the boundary of the premises to exclude land (disposal area) that does not fall under the control of the licence holder, remove redundant conditions and correct administrative errors.

Given the licence holder has not provided evidence of legal access to any of the wastewater disposal areas and the department would need to consult with the landowner/s who would be key stakeholders, the delegated officer has determined to make changes to the premises boundary, not authorise the on-site discharge of wastewater and require the addition of temporary wastewater storage until the occupancy and wastewater treatment matters are resolved.

The assessment of the storage and discharge of wastewater onto the adjoining lots not under ownership of the licence holder has been based on the environmental risk assessment completed in July 2021, as set out in the decision report that accompanies the existing licence, taking into consideration monitoring data that has been submitted since the previous assessment was completed.

2. Existing wastewater management and quality

2.1 Existing wastewater management infrastructure

There is currently no wastewater treatment infrastructure located onsite.

Following daily productions, water (source unknown) is used to wash down the factory. The wastewater is directed to drains in the factory floor, where solids are collected in sieves located in the floor of the factory, before being directed to grease traps. Solids are placed in a skip bin which gets emptied by a contractor and removed off site twice a week.

Each of the three grease traps has a capacity of 4,000 L (retention time unknown). Two pumps (unknown if automatic or manually operated), located near the third grease trap, pump the wastewater to a holding tank. A contractor empties the grease traps every three months.

The holding tank is a 22,000 L tank located within Lot 2 on Plan 51860.

2.2 Existing wastewater quality

Wastewaters from milk processing facilities are typically characterised by high concentrations of organic matter (expressed as biochemical or chemical oxygen demand), nutrients (particularly nitrogen and phosphorus), fats, oils and grease and total dissolved solids or salinity (Dairy Australia, June 2017). Additionally, surfactants, such as soaps and sanitisers or other cleaning agents, may be present in the wastewater.

As per the current licence conditions, the licence holder monitors the wastewater quality at the wastewater holding tank. Parameters required to be measured include six monthly (April and October) monitoring of pH, total suspended solids (TSS), total dissolved solids (TDS), biochemical oxygen demand (BOD), total nitrogen (TN) and total phosphorus (TP). The licence holder reports the results of the monitoring in their annual environmental reports.

It is noted that most of the analysis of wastewater samples that have been conducted over the last 6 years have either been performed at laboratories that are not NATA accredited for some parameters or has been performed outside of recommended holding times; therefore, those results may not be indicative of the actual wastewater quality at the premises. It is also noted that total kjeldahl nitrogen (TKN) has been analysed and reported as TN for some sampling events. TKN results have been excluded from the table below.

Table 1 below show the results of wastewater quality monitoring from April 2018 to October 2023, disregarding results where the laboratory indicated they were not NATA accredited for the analysis of the parameter or where the analysis was not performed within the recommended holding time (as indicated by the laboratory).

Table 1: Quality of wastewater discharged to irrigation areas (from licence holder)

Parameter	Units	April 2018 – October 2023 ¹		ANZECC 2000 – Primary Industries ²
		Range of wastewater quality	Average wastewater quality	
Total nitrogen (TN)	mg/L	29.7 – 260	149.7	25 – 125 ^{2, 3}
Total phosphorus (TP)	mg/L	7 – 120	37.6	0.8 – 12 ^{2, 3}
pH	pH units	11.3 – 12.1	11.7	6 – 9 ²
Biochemical oxygen demand (BOD)	mg/L	1,000 – 8,800	4,218	140 – 350 ⁴
Total dissolved solids (TDS)	mg/L	883 – 13,700	4,510	1,500 ⁵
Total suspended solids (TSS)	mg/L	100 – 1,200	728	140 – 350 ⁴

Note 1: Wastewater holding tank sampling results. Data taken from laboratory reports submitted by licence holder. Note that results have been excluded where the laboratory has indicated they were not NATA accredited for the analysis, and where the laboratory has indicated the analysis was not performed within the recommended holding time. As wastewater quality is monitored on a six-monthly basis, for some parameters there have only been three results that have been included in the table.

Note 2: National Water Quality Management Strategy (NWQMS) Paper No. 4 – Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 3 Primary Industries, 2000, ANZECC and ARMCANZ (ANZECC 2000).

Note 3: ANZECC 2000, requires site specific assessment to determine actual value.

Note 4: Typical effluent quality following pre-treatment, *NWQMS Australian Guidelines for Sewerage Systems – Effluent Management*, 1997, ANZECC and ARMCANZ. Note that typical effluent quality for BOD following primary and secondary treatment are 120 – 250 mg/L and 20 – 30 mg/L respectively.

Note 5: Critical limit above which operational corrective actions are recommended, *NWQMS Australian guidelines for water recycling: managing health and environmental risks*, 2006, (NRMMC, EPHC and AHMC).

It is noted that there is no treatment of wastewater onsite, only pre-treatment (grease traps), and as such the wastewater is indicative of raw (untreated) wastewater.

2.3 Nutrient and Irrigation Management Plan

The licence holder previously had an agreement with the previous owner of several lots immediately south of the premises to irrigate wastewater over approximately 79.4 ha. A NIMP was submitted in November 2020 for the disposal (irrigation) of this wastewater. The department reviewed the NIMP in March 2021, the following is a summary of key points from that review:

- Sufficient land must be available in the wastewater irrigation area to allow nitrogen to be removed in the irrigated hay crop each year. However, it is recommended that no irrigation takes place during June and July each year to minimise the risk of nitrogen compounds leaching through the soil profile to contaminate groundwater.
- A suitably sized water storage pond should be constructed at the site to store wastewater for at least a two-month period during the winter months. The pond and irrigated area should be sized using a water and nutrient balance assessment that is carried out with the MEDLI, or other appropriate, computer model.
- It is likely that the amount of phosphorus that is applied annually in irrigated wastewater greatly exceeds the capacity of the irrigated crop to take up this nutrient from soil. A concentration limit of 30 mg/L for phosphorus in the wastewater is recommended to increase the sustainability of the wastewater irrigation scheme. Additional treatment of the wastewater would be required to achieve this concentration limit.
- The pH of the wastewater is generally too high and has the potential to reduce phosphorus adsorption by soils, to release some naturally occurring toxic elements into soil pore-water and groundwater, and to damage soil structure. It is recommended that additional treatment of the wastewater is carried out to maintain a pH range of about 5 – 8.5.
- Evapotranspiration by plants in the irrigated area should drive both the volume and

timing of wastewater applications to land. Wherever possible, nutrients and the applied water should be utilised within the crop root-zone, and there should be minimal seepage of nutrients and other chemical constituents from the wastewater past the root-zone into groundwater.

- Applications of wastewater should not exceed the soil's capacity to provide suitable growing conditions for the irrigated plants or cause long-term changes to soil structure that may adversely affect the capacity of the soil to continue to support plant growth and a healthy soil-fauna.
- Annual loads of nitrogen and phosphorus applied from the irrigation of wastewater should not exceed the uptake of these nutrients by vegetation in the irrigated area. This generally means that wastewater should be irrigated to a sufficiently large land area such that nutrients are taken up by the crop and removed from the area in harvested biomass.
- The irrigated area should be sufficiently large to enable the applied wastewater to be fully utilised by the crop. This generally means that irrigation does not take place in the southern part of the state during winter months, when rainfall exceeds the rate of evapotranspiration, and when there is a significant risk that nutrients will be leached into groundwater. Wastewater produced during winter should be stored for use during warmer months, and sufficient land area should be available to enable both the stored and ongoing production of wastewater to be discharged.

It is noted that the licence holder has not provided the department with evidence of current legal access to any land (additional to the processing facility) that may be used for the discharge of wastewater (irrigation). This was expected to be submitted along with the renewal application which has also not been received.

3. Consultation

The licence holder was provided with the draft amendment report and draft revised licence on 17 June 2024. Written submission was received from the licence holder on 4 July 2024 and verbal representation from licence holder's representative (Hayden Russell) on 9 July 2024 have been considered by the delegated officer as detailed in Appendix 1.

4. Risk Assessment

The department assesses the risk of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

4.1 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the delegated officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 2 below provides a summary of potential human environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors and distance from prescribed premises

Human receptors	Distance from prescribed premises
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Rural residences	Approximately 14 rural residences located within 500 m of the premises boundary (zoned rural and rural smallholdings)
Rural residential area	Located 490 m to 1.2 km E of premises boundary. Approximately 47 residences within this area.
Land zoned as urban development	Located approximately 690 m ENE and 980 m NNE of premises boundary. Currently not developed: located approximately 500 m NE of premises boundary.
Environmental receptors	Distance from prescribed premises
Surface water	Medulla Brook, a major tributary of the Serpentine River, located 1.2 km SE of premises boundary and 120 m SE of existing irrigation area. Serpentine River, a major river and Conservation category wetland, located 3.5 km SW of premises boundary and 2 km SE of existing irrigation area.
Groundwater	Premises located entirely within the Serpentine Groundwater Area, proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> . Groundwater salinity is estimated to be 1,500 – 3,000 mg/L (Perth Groundwater Map). Depth to groundwater varies from approximately 1.9 mbgl (within existing irrigation area) to 3.8 mbgl at the processing facility (Perth Groundwater Map). It is noted that these depth to groundwater estimates may vary up to 3 m with seasonal variation. There are approximately 37 licences to take groundwater (from Perth-Leederville aquifer) within 1 km of the premises boundary. Groundwater licences have been issued for purposes including dust suppression, firefighting purposes, irrigation of lawns, trees and pasture, domestic purposes, and stock watering.
Bush forever	Bush forever areas located approximately 400 m E and 900 m N of premises boundary (and immediately E of existing irrigation area).
Soil type	Department of Primary Industries and Regional Development (DPIRD) soil landscape mapping layer indicates that the premises is located within the Pinjarra System. It is described as poorly drained coastal plain with variable alluvial and aeolian soils.
Threatened ecological communities	The eastern third of the existing irrigation area is within the buffer zone

4.2 Risk ratings

Table 3 describes the risk events associated with the storage and discharge of wastewater to land, consistent with the *Guideline: Risk Assessments*.

Existing licence holder controls, where known, have been considered when determining the final risk rating. Where the delegated officer considers the licence holder's controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls, or existing licence controls transferred. Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in the below table.

The conditions in the issued licence, L8015/2003/4, that accompanies this decision report, have been determined in accordance with *Guidance Statement: Setting Conditions* (DWER 2015).

Table 3: Risk assessment of potential emissions and discharges during operation of the premises

Risk Event				Risk rating	Reasoning	Regulatory controls
Source / Activities	Potential emissions	Potential pathways, receptors and impact	Licence holder controls	C = consequence L = likelihood		
Storage of wastewater	Wastewater with excessive contaminants (TN, TP, BOD, TSS and TDS) and high pH.	Breach of containment (spills, leaks, overtopping) of wastewater infrastructure (tanks, pipes etc) resulting in direct discharge of nutrient rich wastewater to land may cause soil contamination. This may cause secondary impacts by infiltrating into the soil profile, potentially contaminating groundwater. Groundwater is approximately 1.9 to 3.8 mbgl at the premises. Approximately 37 licences to take groundwater within 1 km of the premises. Bush forever areas located approximately 400 m E and 900 m N of premises. See section 4.1 for further information.	No application has been received. See Regulatory controls column for relevant existing licence controls.	C = Moderate: mid-level onsite impacts L = Possible: the risk event could occur at some time. Medium Risk	The wastewater storage capacity is currently limited to one 22 kL holding tank. It is unknown how much wastewater is produced at the premises; however, based on annual environmental reports (AER) previously submitted to the department, the licence holder has irrigated approximately 1,015 kL/month (approximately 33 kL/day) in 2022 and 2023. Based on this, the premises currently has the capacity to store less than one day's worth of wastewater. Therefore, there is an inherent risk of the tank overflowing and causing an uncontrolled release of wastewater to land. Wastewater from the milk processing facility is classified as "high strength" (NSW DEC 2004), based on wastewater quality monitoring data submitted to the department. Consequently, it has the potential to cause significant environmental harm upon uncontrolled release from failed infrastructure such as the holding tank. To maintain an acceptable level of risk, the delegated officer has determined that the inclusion of infrastructure controls in the amended licence is necessary. This includes additional wastewater storage capacity, secondary containment, and tanks to be covered and within a bunded area. Additionally, a high-level alarm is required on the tanks to minimise the risk of overflowing. The storage tank's minimum capacity was calculated by adding 14 working days (2 weeks) of wastewater production (about 64 kL/day, the maximum average daily amount irrigated (based 2022 and 2023 data provided in the AERs). <i>Licence holder to note that 14 working days has been selected as a timeframe based on the requirement to remove wastewater from the premises (see below). The delegated officer considers that storage for two weeks should allow a contingency for weekly wastewater removal. However, if the irrigation of wastewater is approved at a later date, the required holding capacity may increase, as it may not be suitable to irrigate wastewater during months where rainfall exceeds evaporation which, based on the department's review of the previously submitted NIMP, may be during June and July each year.</i>	<u>Existing licence controls</u> • Condition 1 – wastewater generated must pass through grease traps before being irrigated onsite. <u>Additional regulatory controls</u> • Construction/installation of additional infrastructure for the storage of treated wastewater. • Wastewater storage infrastructure to be covered and located within secondary containment (including bunding) with minimum hydraulic conductivity of 1 x 10 ⁻⁹ m/s. • High-level alarms to be fitted to tank(s).
Irrigation of wastewater to land	Wastewater with excessive contaminants (TN, TP, BOD, TSS and TDS) and high pH. Excessive hydraulic loading to land through tanker irrigation.	The discharge of nutrient rich wastewater through irrigation has the potential to contaminate land. Particularly when the volume of wastewater exceeds evapotranspiration, pooling/waterlogging of nutrient rich wastewater may cause secondary impacts by infiltrating into the soil profile, potentially contaminating groundwater and nearby surface water. Medulla Brook is located approximately 1.2 km SE of the premises boundary and 120 m SE of the existing irrigation area. Bush forever area located immediately E of existing irrigation area. Eastern third of existing irrigation area is within a buffer zone for a threatened ecological community. Groundwater is approximately 1.9 to 3.8 mbgl at the premises. Approximately 37 licences to take groundwater within 1 km of the premises. Soil is described as poorly drained coastal plain with	No application has been received. There are conditions in the existing licence for the irrigation of wastewater.	C = Moderate: mid-level onsite impacts L = Possible: the risk event could occur at some time. Medium Risk	The licence holder has not demonstrated legal occupancy of the existing irrigation areas, therefore, the irrigation of wastewater at the existing areas is not approved through the licence (see section 5 – Premises boundary); however, a risk assessment of the existing irrigation areas is provided below for the licence holder to note. <i>The licence holder has reported compliance with the nutrient loading rate limits in their licence in the past five (since 2019-2020) annual environmental reports (AER). It is noted that wastewater sampling is 6-monthly, TKN instead of TN was analysed in four of the ten samples taken, laboratories noted that some TKN and TN analysis were not completed within recommended holding times, not all laboratories were NATA accredited for some parameters analysed, the licence holder has used average wastewater quality for calculations and has estimated volumes of wastewater irrigated. The actual land area irrigated and whether it is evenly spread is also unclear as a tanker has been used rather than sprinklers. These factors may have contributed to loading rates being calculated to be lower than they actually were. Departmental calculations for the 2019-2020 reporting period show that total phosphorus loading rates may have been 17.3 kg/ha/annual period, above the existing nutrient loading rate limit of 10 kg/ha/annual period.</i> <i>Despite the licence holder submitting information that states compliance with existing nutrient loading limits in the licence, the current phosphorus application rate to land in the existing irrigation area is proving unsustainable as the soils become saturated with phosphorus. This causes an increase in risk of nutrients leaching into groundwater, and thus discharging to the nearby Medulla Brook where eutrophication of this kind can have detrimental effects on ecosystem health. Therefore, the delegated officer has determined that the existing phosphorus loading rate limit is not suitable for the ongoing sustainability of the existing irrigation scheme. If irrigation were to continue, a limit on total phosphorus in the wastewater prior to irrigation will be imposed. Additionally, total phosphorus loading rate limits may be changed to monthly and reduced from what is currently on the licence. This would require an increase in the level of treatment of the wastewater, which may require the licence holder to install a wastewater treatment system.</i> <i>The results of pH monitoring in the wastewater submitted by the licence holder have shown pH to be above 9 in the past six AERs. This creates conditions which further limit the ability of phosphorus to be immobilised in the soil profile. Therefore, if irrigation were to continue, to maintain an acceptable level of risk to the environment, the delegated officer has determined that the requirement to maintain a pH in the range of 5 to 8.5 will be implemented.</i> <i>Additional parameters to be monitored in the wastewater prior to irrigation will also be included in the licence if irrigation were to continue. In particular, the requirement the measure cation concentrations are deemed necessary to calculate the sodium adsorption ratio (SAR) value which indicates whether irrigating the wastewater has the potential to further damage the soil structure, thus potentially impacting on groundwater.</i> <i>A soil monitoring regime would also be included on the licence if irrigation were to continue to determine whether revised nutrient loading limits and treatment practices are proving effective in enhancing the level of sustainability of irrigation at the premises, and to enable early detection of nutrient saturation in the soils before it impacts on groundwater.</i> <i>Due to the existing size of the irrigation scheme and the high-strength nutrient composition of the wastewater, if irrigation were to continue, the delegated officer has determined that a network of monitoring bores would be required. The new</i>	The irrigation of wastewater is not approved through the amended licence. Therefore, conditions relating to the irrigation and monitoring of wastewater quality have been removed from the licence. <u>Additional regulatory controls</u> • No irrigation of wastewater at the premises. • Wastewater to be removed from the premises to a facility licensed to accept the wastewater. • Required to record the amount of wastewater removed from the premises.

Risk Event				Risk rating C = consequence L = likelihood	Reasoning	Regulatory controls
Source / Activities	Potential emissions	Potential pathways, receptors and impact	Licence holder controls			
		variable alluvial and aeolian soils. See section 4.1 for further information.			<p>network would comprise a minimum of three shallow bores, screened across the expected water table depth, with at least one located up hydraulic gradient and at least two located down hydraulic gradient of the irrigation area. This arrangement of bores, and an appropriate monitoring regime, will allow groundwater flow direction to be accurately determined. It will also enable early detection and proactive management of possible contamination from leachate at the irrigation areas. The suite of parameters that will be required to be monitored may include EC, pH, TDS, TN, TP, ammonium-nitrogen, nitrate-nitrogen, molybdenum, selenium, arsenic, and major ions (Na⁺, K⁺, Ca²⁺, Mg²⁺, Cl⁻, HCO₃⁻, and SO₄²⁻).</p> <p>To ensure nutrient and BOD loading limits are calculated correctly, if irrigation were to continue, the licence holder will be required to provide their loading rate calculations in a form (spreadsheet) provided by the department.</p> <p>The existing irrigation area is prone to becoming waterlogged during periods of high rainfall, which increase the risk of nutrients leaching through the soil profile and into groundwater. The delegated officer has determined that to maintain an acceptable level of risk of wastewater leaching into groundwater, if irrigation were to continue, it will be restricted during June and July each year when monthly rainfall is almost twice as high as the monthly evaporation rate. In addition, the use of a rain gauge to determine when a rainfall event has occurred, immediately after which, irrigation will be restricted, will be required.</p> <p>To support these irrigation restrictions, additional wastewater storage with the capacity to store wastewater produced during these times will be required. Additionally, if irrigation were to continue, the licence holder will be required to evenly distribute wastewater over the entire irrigation area, to ensure waterlogging is prevented and wastewater (and therefore nutrients) are discharged evenly across the irrigation area.</p> <p>Additionally, it is unclear whether cropping was occurring within the irrigation areas. Evapotranspiration by plants in the irrigated area should determine the volume and timing of wastewater applications to land. Nutrients applied in the wastewater should be utilised within the crop root-zone, and there should be minimal seepage of nutrients and other chemical constituents past the root-zone into groundwater.</p>	
Storage and irrigation of wastewater	Odour from storage and irrigation of untreated / excessively high BOD levels in wastewater	Air/windborne pathway causing impacts to amenity of nearby human receptors. Approximately 14 rural residences within 500 m of premises boundary of processing facility. Rural residential area (with approximately 47 residences) located 490 m to 1.2 km E of premises boundary.	No application has been received. See Regulatory controls column for relevant existing licence controls.	C = Minor: low-level impact to amenity L = Possible: the risk event could occur at some time. Medium Risk	<p>Milk processing facilities are characterised by high concentrations of organic matter (BOD) which have an inherent risk of emitting odour. At the premises, solid wastes are separated from liquid wastes via a drainage system after daily processing. The remaining wastewater does not currently undergo any treatment before irrigation, and therefore has elevated levels of BOD.</p> <p>Wastewater from the premises is up to 35 – 73 times above the typical BOD range of 120-250 mg/L for primary treated effluent. Wastewater with higher BOD loads may contribute to odour emissions from the storage of wastewater.</p> <p>Due to the proximity of residential receptors to the processing facility (where solid wastes are temporarily stored) and wastewater is stored, the delegated officer has determined that there is an inherent risk of odour impacting on amenity. To ensure the risk of odour emissions are minimised, solid waste and untreated wastewater should be stored in covered/enclosed tanks.</p> <p>Soils can remove organic carbon from wastewater if there are sufficient long drying periods between irrigation events. However, excessive BOD loading can lead to bacterial slimes (clogging of soil pores), anaerobic odour issues, and potentially arsenic mobilisation from soils. If irrigation were to continue, the delegated officer will amend the BOD loading limit in accordance with internal departmental advice and relevant guidelines (NSW DEC, 2004).</p>	<p><u>Existing licence controls</u></p> <ul style="list-style-type: none"> • Odour emitted from the premises does not unreasonably interfere with the health, wealth, convenience, comfort or amenity of any person who is not on the premises. <p><u>Additional licence controls</u></p> <ul style="list-style-type: none"> • Solid waste and wastewater storage to be covered/enclosed.

5. Decision

Licence duration

Guidance Statement Licence duration (DWER 2016) allows for a maximum licence duration of up to 20 years. The delegated officer has taken into consideration current departmental directions and policies and has determined to extend the expiry of the licence by 10 years.

Premises boundary

The licence holder is the proprietor for Lot 2 on Plan 51860, which includes the milk processing facility infrastructure. The licence holder has not demonstrated occupancy of the existing irrigation areas (Lot 51 on Plan 226010, Lots 52 and 115 on Plan 226115, Lot 123 on Diagram 5045 and Lot 511 on Plan 249485). The licence holder had an agreement with the previous owners of these lots to discharge wastewater to land; however, no agreement with the current owner of the lots has been provided to the department. Considering the department's *Guideline: Industry Regulation Guide to Licensing* (DWER, 2019) regarding prescribed premises boundaries, the delegated officer has determined to remove these additional lots from the premises boundary description. Consequently, the discharge of wastewater to land (irrigation) is not approved through the amended licence.

The licence holder may apply for a licence amendment to expand the premises boundary to include irrigation area(s), provided they form a continuous area with the existing premises boundary, except for where the area is bisected by a road, rail or waterway reserve, and provided the application includes evidence of legal access (e.g. lease) to the additional areas. See below for additional requirements.

Irrigation of wastewater

The licence holder has not demonstrated legal occupancy of the existing irrigation areas (see above), therefore, the discharge of wastewater to land (irrigation) at the premises is not approved through the licence. All conditions relating to the irrigation of wastewater, including monitoring of wastewater quality, have been removed from the licence. However, the below has been included in this report for the licence holder to note should they apply to include the irrigation of wastewater in the future.

In reviewing the existing storage and discharge of wastewater activities at the premises, the delegated officer has determined that current waste containment and irrigation activities pose a medium risk of impacts to the environment. The wastewater is untreated and has very high levels of nutrients (TP and TN), BOD, TSS, pH, and TDS, which is rendering the current irrigation scheme unsustainable.

The risk assessment outlined in section 4 of this report has identified material changes to licence conditions that would be required to manage the potential for immediate and ongoing impacts to soils, surface water and groundwater from the existing discharge of wastewater to land. These changes include:

- *the addition of conditions to increase the treatment of wastewater.*
- *revised limits on TN, TP, TSS, TDS, BOD and pH of treated wastewater.*
- *construction and installation of additional wastewater storage to coincide with periods of high rainfall and winter irrigation restrictions.*
- *installation of groundwater monitoring bores.*
- *a revised monitoring regime to include soil and groundwater monitoring and more comprehensive monitoring of wastewater prior to irrigation.*

Additionally, the previously submitted NIMP for the existing irrigation scheme has been found to be inadequate (see section 2.3) to minimise the risk of the discharge of wastewater to land impacting on nearby sensitive receptors, including groundwater, surface water and threatened ecological communities.

If the licence holder applies to include the irrigation of wastewater to land, a revised nutrient and irrigation management plan (NIMP) must be submitted with the application. The licence holder must demonstrate that the amount and quality of wastewater being applied to the irrigation areas does not exceed crop / vegetation nutrient, salt or water requirements. The plan should demonstrate that irrigation will not cause wastewater containing nutrients and salt to leach to groundwater or cause waterlogging or overland flow into the existing nearby watercourses causing surface water and groundwater contamination potentially affecting ecosystem health, including nearby threatened ecological communities. This may include the construction of additional storage tanks, determining crop nutrient and water requirements using crop factors or crop coefficients for different crop stages and determining climate data specific to the premises.

Additionally, information on nutrient offtake (cropping) for the irrigation areas is required. This may include information on crop type, expected biomass tonnage, fertiliser inputs, and a nutrient balance with crop rotation for at least a 5-year period. If no cropping is taking place, there is an increased risk of nutrients, particularly phosphorus, to runoff and leach through the soil profile contaminating surface waters and groundwater and potentially impacting on sensitive receptors such as nearby native vegetation, Medulla Brook and threatened ecological communities. Wastewater should only be applied to areas that are about to be sown with or are actively growing crops/pasture, with irrigation areas utilised harvested at least once every 12 months. The nutrient offtake strategy, along with the NIMP, can then be used to determine site appropriate nutrient loading rates for TN and TP.

Monitoring of inputs and outputs

The delegated officer has added a standard condition for the monitoring of inputs (milk received at the premises) and outputs (solid waste from in-floor drains and wastewater produced at the premises). This condition has been added to determine compliance with the assessed production capacity, and to ensure the wastewater is being managed appropriately.

Annual Reporting

The requirement to submit an AER has been removed from the licence as no monitoring is required. The results of the monitoring of inputs and outputs can be reported in the AACR. The AACR must be submitted by 28 February each year.

6. Summary of amendments

The below table provides a summary of the amendments and will act as a record of implemented changes. All changes have been incorporated into the revised licence as part of the amendment process.

Table 4: Summary of licence amendments

Existing licence condition	Licence amendment condition	Description
Front page	Front page	Extended expiry date of licence
		Removed Lot 51 on Plan 226010, Lot 52 on Plan 226115, Lot 115 on Plan 226115, Lot 123 on Diagram 5045 and Lot 511 on Plan 249485
		Updated registered business address as per communication from licence holder in February 2024
		Added Date of amendment
Condition 1	Condition 4	Existing infrastructure and wastewater requirements have been transferred to a standard infrastructure table.
Condition 2	-	Removed from the licence – irrigation of wastewater is not authorised under the licence.
Condition 3	-	Removed from licence – no limits are specified in the licence.

Existing licence condition	Licence amendment condition	Description
Condition 4	-	Removed from the licence – irrigation of wastewater is not authorised under the licence.
Condition 5	-	Removed from the licence – irrigation of wastewater is not authorised under the licence.
Condition 6	Condition 5	Transferred existing condition
-	Conditions 1 to 3	Requirement to construct/install additional wastewater storage tanks
Conditions 7 to 10	-	Removed from the licence – irrigation of wastewater is not authorised under the licence; therefore, monitoring is not required.
-	Condition 6	Monitoring of inputs and outputs
Condition 11 and 12	Condition 7 and 8	Records and reporting
Condition 13	Condition 10	AACR requirements
Condition 14	Condition 9	Complaints management
Condition 15	-	Removed from the licence – no monitoring is required under the licence, therefore no annual report is required.
Definitions	Definitions	Removed definitions for terms not in the licence. Added the definition for hardstand.
Schedule 1, Maps	Schedule 1, Maps	Updated premises boundary map and infrastructure map. Removed map showing location of monitoring point.

References

- 360 Environmental, 2020. *Mundella Foods Pty Ltd Nutrient Irrigation Management Plan*. Prepared for Sunbeam Foods Group.
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- Department of Water and Environmental Regulation (DWER), 2015. *Guidance Statement: Setting Conditions*. Perth, Australia.
- DWER, 2019. *Guideline: Industry Regulation Guide to Licensing*. Perth, Australia.
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- DWER, 2023. *Perth Groundwater Map*. Available online at: <https://maps.water.wa.gov.au/Groundwater>.
- Mundella Foods Pty Ltd, 2018 to 2023. *Annual Environmental Reports 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022 and 2023*. Received by the department from the licence holder on 9/05/2019, 12/05/2020, 26/05/2021, 6/05/2022, 17/05/2023 and 18/03/2024 respectively.
- National Resource Management Ministerial Council (NRMMC), Environment Protection and Heritage Council (EPHC) and Australian Health Ministers' Conference (AHMC), 2006.

National Water Quality Management Strategy – Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1). Edited by Biotext Pty Ltd, Canberra.

10. NSW DEC, 2004. *Environmental Guidelines: Use of Effluent by Irrigation*. The technical guidelines produced by the NSW Department of Environment and Conservation are available from web site: <https://www.epa.nsw.gov.au/publications/water/effguide>.

Appendix 1: Summary of licence holder's comments on draft amendment

Summary of licence holder's comments received 4/07/2024	Department's response
<p>The licence holder has stated that they do not agree with the proposed amendments, <i>i.e. that irrigation of wastewater is not authorised</i>. Reasoning has been summarised below:</p> <ul style="list-style-type: none"> • Only advised of the issue in February 2024. Not had enough time to make necessary arrangements. • Unfair the department is expecting a large scale wastewater treatment plant works approval to be submitted in 2023. • Business is at risk (financially), risking closure, due to cost of tankering wastewater offsite. <p>Asking for the existing licence conditions, which include allowing the irrigation of wastewater to land, to be extended to December 2025. This will allow for financial arrangements and to trial and assess the suitability of wastewater treatment equipment prior to installation of a new system.</p> <p>The licence holder has stated they are committed to improving processes and efficiencies for better environmental outcomes. Working towards onsite wastewater treatment to reduce nutrient levels and recycle water for reuse using reverse osmosis technology.</p> <p>The licence holder has stated they have a long standing agreement with Fyfe Capital, owners of Lot 51 on Plan 226010, Lot 52 and 115 on Plan 226115, and Lot 123 on Diagram 5045 and Lot 511 on Plan 249485. The property has engaged onsite managers who are working with agronomists to develop cereal cropping and pasture program, in conjunction with perennial tree lucerne planting to utilise irrigation water applied with moveable adjustable volume sprinklers and a travelling irrigator.</p> <p>The licence holder has also stated they will install new groundwater monitoring bores to meet department requirements.</p> <p>The licence holder has provided the following additional documentation:</p> <ul style="list-style-type: none"> • Water balance for lots 52, 115 and 123. • Maps (dated 2020) compiled by 360 Environmental of existing premises boundary, topography and soil, surface geology, surface water features and location of existing wastewater tanks and grease traps. 	<p>A licence renewal letter was sent to the licence holder on 13 February 2024 advising that the existing licence was expiring on 14 July 2024 and that a licence renewal application was due by 31 March 2024. The letter also outlined information that must be submitted as part of the application which included:</p> <ul style="list-style-type: none"> • a proposal with timeframes to submit a works approval application for the installation of a suitably designed wastewater treatment plant. • a wastewater plan and an updated nutrient irrigation management plan prior to wastewater disposal (irrigation) commencing. • evidence that the licence holder has legal access to all treated wastewater disposal areas and areas of land over which any wastewater pipelines are placed. • evidence that the licence holder has the necessary groundwater licence(s) to take water for use in milk processing activities. <p>Additionally, the letter stated that wastewater would be required to be tankered offsite for disposal at a licensed liquid waste facility until wastewater quality is improved and a suitable proposal specific NIMP is provided (based on the previous assessment of the discharge of wastewater to land by the department in 2021, which has been publicly available on the department's website since July 2021).</p> <p>The department contacted the licence holder on 28 February, 19 March, 10 April, 11 April, 2 May, and 13 May 2024 reminding them that a licence renewal application has not been received. No licence renewal application has been submitted to date.</p> <p>The department advised the licence holder on 13 May 2024, that due to insufficient time for the department to process a licence renewal application before the July expiry date, the department is proposing to undertake a department-initiated amendment to extend the expiry date of the licence but will not approve the discharge of wastewater to land until such time as an appropriate NIMP is provided (based on the existing assessment (July 2021)) and that legal access (lease) to all wastewater disposal areas has been demonstrated.</p> <p>No response was received from the licence holder, therefore, the department further contacted the licence holder on 27 May 2024 to confirm whether the licence holder intended to continue milk processing operations at the site after the 14 July 2024 (expiry of the existing licence). The licence holder verbally confirmed that they did and submitted an application for annual licence fees on the same day. The department received payment of the annual licence fees on 2 July 2024.</p> <p>The licence holder was provided with a draft licence and draft amendment report on 17 June 2024 with a response being received on 4 July 2024.</p>

Summary of licence holder's comments received 4/07/2024	Department's response
<ul style="list-style-type: none"> • <i>Analysis of suitability of soils within Lots 52 and 115, Randell Road, to receive treated wastewater, dated September 2017, by 360 Environmental.</i> • <i>Mundella Foods with Mundella Farms (Fyfe Capital) Nutrient Irrigation Management Plan to accompany licence L8015/2003/4, undated, received 4 July 2024.</i> • <i>Proposed 80m³ water treatment system – process flow diagram, dated 30 April 2024 by AquaSol.</i> 	<p>No lease, demonstrating legal access to existing wastewater disposal areas has been provided by the licence holder. Due to the current quality of wastewater produced at the site being indicative of raw (untreated) wastewater (see section 2.2) with the potential to impact on nearby sensitive receptors (see section 4), the delegated officer considers it necessary to ensure the owners of the existing wastewater areas have agreed to allow raw wastewater to be irrigated on their land.</p> <p>Additionally, information as outlined in section 5, including a suitable NIMP and information on nutrient offtake (cropping), has not been provided by the licence holder.</p> <p>The licence holder may apply for a licence amendment to include additional area(s) for irrigation following submission of the above information (also see section 5).</p>
<p>Representation (phone call from Hayden Russell to Delegated Officer) received 09/07/2024 at 11.15 am.</p> <p>Request that the draft amended licence as referred be issued as soon as possible (before the expiry date) and confirming that the licence holder will be submitting an amendment application to include off-site disposal areas, once leases and wastewater treatment matters have been resolved.</p>	<p>The department will proceed with issuing the amended licence with minor changes as requested by licence holder.</p>