



CEO-initiated licence amendment

Division 3, Part V *Environmental Protection Act 1986*

Licence number	L4404/1991/15
Licence holder	Harvey Fresh (1994) Ltd
ACN	065 591 219
File number	DWERVT2474
Premises	Harvey Fresh Dairy and Juice Factories Third Street HARVEY WA 6229 Legal description – Lot 1 on Diagram 4786, Lots 20 and 22 on Plan 2344, Lots 187, 189 and 190 on Plan 202110, Lot 200 on Diagram 66494, Lots 33, 34, 35 and 36 on Plan 205324, and Lots 191 and 192 on Plan 202109
Date of report	09/02/2022
Decision	Revised licence granted

Amendment description

This amendment is made pursuant to section 59 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. This notice of amendment is hereby given under section 59B(9) of the EP Act.

This amendment has been initiated by the Chief Executive Officer (CEO) of the department and includes changes to the existing licence to address the present and ongoing risk of uncontrolled off-site discharges of untreated wastewater from the wastewater treatment system.

In completing the assessment documented in this report, the department has considered and given due regard to its regulatory framework and relevant policy documents which are available at <https://der.wa.gov.au/regulatory-documents>.

Purpose and scope of assessment

The CEO has determined to amend licence L4404/1991/15 issued to Harvey Fresh (1994) Ltd (Harvey Fresh / licence holder) for the Harvey Fresh Dairy and Juice Factories (premises).

The amendment follows two significant uncontrolled off-site discharges of raw wastewater in August 2020 and June 2021 that resulted from overtopping of a wastewater treatment tank.

Background

The licence holder operates a dairy and juice manufacturing facility in Harvey, about 140 km south of Perth. The facility was established in 1986 as a small juice processing operation and has gradually expanded to become one of the state's largest suppliers of fresh milk and juices.

The premises is subject to the prescribed premises categories for milk processing (category 17) and non-alcoholic beverage manufacturing (category 24), with a combined production throughput of 193,000 kilolitres (kL) per year. The combined operations currently generate up to 1,000 kL/d of wastewater that is treated on the premises using dissolved air flotation (DAF) followed by a sequencing batch reactor (SBR) system, with treated wastewater disposed to land via flood irrigation of nearby laser-levelled paddocks.

The premises has a history of wastewater management issues that include repeated uncontrolled discharges of raw wastewater into the environment and off the premises. An environmental protection notice (EPN) was served on Harvey Fresh in 2009 to require the inadequacy of the wastewater treatment system to be addressed which, despite increases in production throughput over the years, had not been upgraded since the early 1990s. The wastewater treatment plant was eventually replaced by a new system in 2012 and the EPN was subsequently revoked by the CEO in 2013.

A second EPN was served on Harvey Fresh in December 2018 following compliance activities by the department that identified ongoing breaches of licence discharge limits over an extended period, and that irrigation areas receiving treated wastewater had become nutrient saturated and were contributing to the off-site export of nutrients within the already nutrient-enriched area subject to the Environmental Protection (Peel Inlet – Harvey Estuary) Policy 1992.

The 2018 EPN remains active for the premises and requires irrigation of treated wastewater to newly specified areas on the premises, with Harvey Fresh required to investigate the extent of environmental impacts from recent and historical irrigation activities and remediate impacted areas.

Wastewater treatment system

Raw wastewater from operations is collected in one of three sump pits located on the milk processing site, from where it is pumped to the wastewater treatment plant site. The wastewater stream comprises milk and juice products, fats, organic solids from juice, detergents, sanitisers, acidic and caustic cleaning agents and small volumes of lubricants.

Wastewater is firstly passed through a rotary drum screen to remove solids and then gravity fed to a 500 kL equalisation (EQ) tank for pH adjustment. The wastewater stream is then sent to a DAF unit where it is dosed with a coagulant to flocculate suspended material (dairy fat) before being sent to the SBR system for final stage treatment. The SBR system comprises two large 2,200 kL tanks – the wastewater treatment plant site is not bunded and all tanks and infrastructure are free-standing with no secondary containment in place to contain spills and leaks.

Uncontrolled discharges of wastewater

ICMS 58556

In August 2020 the EQ tank overflowed resulting in an estimated 125 kL of untreated wastewater being discharged into the environment, of which an estimated 25 kL reached the Harvey River, a major waterway that drains into the Peel-Harvey Estuary.

The wastewater overflowed from the treatment plant site to an adjacent orchard, where a portion entered the main facility stormwater drain that is designed to flow off the premises into the municipal stormwater system.

The incident was caused by a power failure to the EQ tank after its power plug was dislodged and prevented the high-level alarm from being activated.

In response Harvey Fresh had the power supply to the EQ tank hard-wired into the main control box and updated its procedures to ensure at least 3 different staff members are alerted in the event of future high-level alarms. Following the incident, the department issued a letter of warning to Harvey Fresh for contravening condition 1 of licence L4404/1991/15 in that there was an unreasonable emission from the waste holding tank.

ICMS 61843

In June 2021 the EQ tank again overflowed, resulting in up to 168 kL (worst case estimate) of untreated wastewater being discharged off the premises, of which an estimated 5 – 10 kL reached the Harvey River. An investigation by the department confirmed that wastewater had discharged off the premises into the municipal stormwater system, with a portion reaching the river before Harvey Fresh dumped a sand bund into the drain to prevent any further discharge into the river. Harvey Fresh was then able to recover at least 125 kL of wastewater from the impacted drainage system using vacuum trucks.

The incident was attributed to a pump telemetry failure during scheduled tank maintenance, where the programmable logic controller (PLC) system was falsely reporting the tank was at 60% capacity (likely due to a blockage on the sensor), when it was at 100%. The high-level alarm was therefore not activated, and the system continued to transfer wastewater to the EQ tank, which then overflowed.

The department deemed the incident to have been accidental and chose not to take any further enforcement action on the matter.

Root cause analysis

In both incidents a part of the wastewater treatment system had malfunctioned whereby the high-level alarm was not activated, resulting in the EQ tank being allowed to overflow for several hours.

Given the EQ tank is not bunded and there is no secondary containment in place for the wastewater treatment plant site, the overflow of untreated wastewater runs off into an adjacent orchard, from where it is allowed to enter the premises' stormwater system that comprises a network of open drains for preventing the site being inundated from flooding.

The system is designed to direct all surface water runoff from hardstand areas and surrounding orchards to the western boundary of the milk processing site, where it is allowed to flow off the premises into a Water Corporation stormwater drainage network that discharges into the Harvey River, about 600 m downstream from the premises boundary.

Metal 'sluice gates' are located about 15 m before the premises boundary, which are left open and need to be manually activated by Harvey Fresh employees in an emergency, such as an overflow. In both incidents, the gates were not activated immediately, which allowed the wastewater to discharge off the premises.

The Department's Pollution Response Unit (PRU) attended both incidents – two in the past year – and noted both were identical in which untreated wastewater followed the same flow path off the premises and to the Harvey River. PRU officers believed bunding of the wastewater treatment plant operational areas and tanks would have likely mitigated or reduced the volume of wastewater that was allowed to discharge off the premises.

Proposed amendments

The CEO proposes to amend existing licence L4404/1991/15 to require the licence holder to manage and be able to contain unplanned discharges of wastewater from the wastewater treatment plant.

Risk assessment

The below table describes the risk events associated with the amendments consistent with the *Guideline: Risk Assessments* (DWER, 2020). The table identifies whether the risk events are acceptable and tolerated, or unacceptable and not tolerated, and the appropriate treatment and degree of regulatory control, where required.

Risk assessment table

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Licence holder controls					
PROPOSED AMENDMENTS								
Construct and install bunding and secondary containment for key wastewater treatment infrastructure	Nutrient-laden wastewater runoff from spillages and overtopping of tanks Raw wastewater comprises high concentrations of organic matter (BOD), nutrients (particularly nitrogen and phosphorus), fats, oils and grease, total dissolved solids and cleaning agents	Overland runoff into premises stormwater system, which flows off the premises and into the Harvey River High nutrients and BOD can cause algal blooms and fish kills in the Harvey River	DAF on concrete hardstand Sluice gate in stormwater drain – manually operated to prevent flooding PLC high-level alarms on tanks Monthly workplace inspections Preventative maintenance observations	High-level on-site impacts Mid-level off-site impacts Specific consequence criteria exceeded Major	Event could occur at some time Possible	High Acceptable, subject to multiple regulatory controls	The delegated officer notes the site has a history of repeated uncontrolled discharges of raw wastewater off the premises. A root cause analysis of the most recent off-site discharges highlights the following: <ul style="list-style-type: none">the current wastewater treatment plant site has no ability to contain any spills, leaks or overtopping, due to there being no bunding or secondary containment in place;there are minimal controls in place to prevent off-site discharges – wastewater that has overtopped runs off the wastewater treatment plant site and into the site’s main stormwater system that is channeled off the premises into a Water Corporation drain that flows into the Harvey River;a sluice gate system is located before stormwater discharges off-site, however the gate is normally open and needs to be manually activated in an emergency, such as an overflow;the wastewater treatment plant is typically unattended for several hours at a time at night, with visual checks conducted every 3 hours, which based on the June 2021 incident, has the potential to allow up to 168 kL of uncontrolled discharge. The delegated officer considers it unacceptable for there to be an open pathway for raw wastewater to discharge off the premises and reach a sensitive receptor – and that there has been not only one, but two overtopping incidents within a 12-month period where wastewater has reached a sensitive receptor such as the Harvey River. The delegated officer notes the premises is located within the already nutrient-enriched Peel-Harvey EPP, and there is an active EPN registered on the land title to minimise the impact of managing nutrient-rich wastewater generated by activities at the premises. The delegated officer therefore considers it critical that in the event of a future malfunction or failure of the system, that wastewater is fully contained on the premises. The licence holder is therefore required to: <ul style="list-style-type: none">construct a suitable secondary containment system for the wastewater treatment plant, with sufficient capacity to contain the volume of wastewater that would discharge from the EQ tank in between routine inspections; andconduct a review of the PLC system to include redundancy backup for the tank capacity monitor and alarm.	Condition 2 Table 2 – secondary containment construction requirement added

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Guideline: Risk Assessments (DWER, 2020).

Decision

The delegated officer notes there is demonstrable evidence of impacts to environmental receptors, including the Harvey River, from the most recent overtopping incidents, and that changes are required to the existing licence to address the current unacceptable risk of further uncontrolled off-discharges of untreated wastewater.

The delegated officer considers it unacceptable that:

- a wastewater treatment plant with tanks the size of that at Harvey Fresh does have any secondary containment in place, to contain spills or leaks;
- there is an open pathway for uncontrolled wastewater discharge into the environment;
- there is an open pathway between the wastewater treatment plant site and a sensitive receptor such as the Harvey River;
- internal controls and processes would allow more than 120 kL of raw untreated wastewater to discharge into the environment before being identified; and
- there have been two overtopping incidents in the past 12 months where significant volumes of raw untreated wastewater from the premises has discharged to the environment and reached a sensitive off-site receptor such as the Harvey River.

In view of the above, the delegated officer has determined to make the following changes to the licence:

- requirement to construct suitable secondary containment for the wastewater treatment plant area and
- requirement to upgrade the PLC system to include redundancy backup for the tank capacity monitor and alarm.

Licence update

In amending the licence, the delegated officer has also:

- updated the format and appearance of the licence;
- revised condition numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

The decision report for the existing licence will remain on the DWER website for future reference and will act as a record of DWER's decision making.

Consultation

The licence holder was provided with drafts of the revised licence and this report on 10 November 2021. The licence holder responded on 7 and 13 January 2022 and on 4 February 2022. The responses have been considered by the Delegated Officer as shown in Appendix 1.

Conclusion

Based on this assessment, it has been determined to amend the existing licence, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Summary of amendments

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

Condition no.	Proposed amendments
Explanatory notes	Deleted, consistent with current DWER licence template. This guidance is now available in DWER's <i>Guide to Licensing</i> (June 2019).
Licence history	Inserted, consistent with current DWER template.
Interpretation	Updated, consistent with current DWER template.
Condition 1*	Deleted, redundant condition. Replaced by 'note', consistent with current DWER template.
Condition 1, Table 1	Inserted 'sluice gate' in infrastructure table, with operational requirements to maintain the gate closed between January and March.
Conditions 2 – 5	Inserted, new requirements to construct secondary containment for the wastewater treatment plant. Requires an audit of compliance and submission of compliance report.
Condition 7	Reworded to ensure enforceability of condition.
Conditions 9 - 12	Inserted general monitoring requirements. Replaces previous conditions 11 & 12 and individual requirements in other tables.
Condition 20	Reworded AER table, previously Table 10.
Condition 21	Inserted new requirement to ensure AER includes an assessment of monitoring data.
Condition 25	Deleted, redundant condition.
Definitions	Definitions removed: 'department request', 'emission', 'environmental harm', 'GPS', 'implementation agreement or decision', 'material environmental harm', 'serious environmental harm', 'unreasonable emission', 'waste' – conditions which contained these references have been removed, consistent with current DWER template.
	Definitions added: 'wastewater treatment plant'.
Schedule 1 - Maps	Inserted, new map showing the location of the wastewater treatment area - secondary containment

Appendix 1: Summary of licence holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
1 Table 1 – Stormwater sluice gate (a) Must remain closed during normal operations to prevent uncontrolled off-site discharges of wastewater	Risk identified of flooding the factory area through back up of stormwater which would then come up through all stormwater drains on site	Based on the risk of keeping the gates closed and the additional measures to be put in place to prevent discharges of raw wastewater into the environment, the Delegated Officer has removed the condition.
1 Table 1 – Stormwater sluice gate (b) May only be opened during periods of prolonged rainfall to avoid the risk of flooding.	Due to the runoff from the hills in this area we believe the stormwater gate would have to be open for most months of the year and could only be closed for Jan, Feb, March without impacting the factory	The Delegated Officer agrees with the proposed changes. Condition updated.
2. Improvement works – secondary containment. The licence holder must, by 1 February 2022, construct secondary containment around the wastewater treatment plant area.	Funding for any major site works has to be submitted in a capex program then approved not only within Australia but at our International Lactalis Group in France. This takes 10 weeks at a minimum plus lead time for organising contractors and resources of at least 4-8 weeks within the current shortages and availability. Thus, the timescale to completion is 18-20 weeks from DWER final approval	The Delegated Officer agrees with the new timeframe to install the secondary containment. Condition updated.
3. The secondary containment required by condition 2 must: (a) be constructed of brick, stone, concrete or other impervious material around the perimeter and floor of the wastewater treatment plant area;	We have discussed this requirement within the business with our engineers who have informed us that creating a concreted bund around existing concrete tanks would undermine the integrity of the tanks and lead to a catastrophic event of cracking the walls of the current infrastructure.	The Delegated Officer agrees with the proposed changes. Conditions updated to reflect the proposed infrastructure.
(b) be sealed with appropriate waterproofing, to ensure no leaks can escape the confines of the secondary containment;	As above the bunding would have to have expansion gaps so that the Current Tank integrity is not impacted. This would mean that there would not be a guarantee of no leakage over time.	
(c) be designed with an effective	Our proposal provides a greater maximum quantity of	

Condition	Summary of Licence Holder's comment	Department's response
<p>containment volume equal to or greater than the maximum quantity capable of being discharged from the EQ tank during a period of 30 minutes;</p> <p>(d) be constructed with a collection sump in the floor to facilitate removal of accumulated rainwater and spilt materials;</p> <p>(e) floor must be graded to ensure liquids collect in the collection sump (sump must not be connected to the stormwater drainage system); and</p> <p>(f) must not install any taps, bolts, valves or other holes through the bund walls (pipes must go over the bund wall);</p> <p>(g) have a suitable pump on standby for managing accumulation of rainwater and spilt materials inside the bund area.</p>	<p>containment to ensure we meet our obligations and priorities moving forward.</p> <p>The proposal is to install an overflow prevention tank TEFLON lined steel with 250,000 litres capacity (the equivalent of 5 hours emergency water collection) in a bunded area.</p> <p>This new tank and EQ tank area will be sealed with minimum 100 mm of reinforced concrete and bunded with 150 mm (high) bund wall. The bund area will keep 14 m³ volume of wastewater. This bund will contain a 1500 mm x 1500mm concrete sump and automatic level control pumps that will pump collected water to EQ tank.</p> <p>The tanks and concrete pad will be connected with expansion foam and sealed with epoxy.</p>	
<p>6. The licence holder must, by 1 December 2021, upgrade the PLC system for the EQ tank to include:</p> <p>(b) an automatic shutoff valve.</p>	<p>We have identified a risk associated with completing this item. If we shut off the EQ tank flow to prevent overflow- the risk is then transferred to flooding the factory which would then affect the stormwater drains around site in a shorter time frame than an overflow at the EQ tank.</p> <p>The DAF Alarms have now been split up into the following:</p> <ul style="list-style-type: none"> EQ Level 70-79% (At this level monitor on Citect) EQ Level 80-89% (At this level attend DAF ASAP and investigate) EQ Level 90-94% (At this level becoming critical). Contact Maintenance Manager immediately EQ Level Above 95% (Imminent risk of overflow) 	<p>The Delegated Officer agrees that the proposed changes to PLC system will allow the licence holder to identify, at various stages, when the EQ tank is reaching full capacity and act. The additional alarms and communication systems will replace the necessity of a shutoff valve.</p> <p>Condition removed.</p>

Condition	Summary of Licence Holder's comment	Department's response
	<ul style="list-style-type: none"> DAF Comms Fault (Wireless signal to DAF lost. Attend DAF and ensure plant functioning. Check PLC is Ok) Factory To DAF Sump Pump Alarm (Pumps at sump next to crate dock may be tripped or low flow) DAF Sump High Level (Sump after DAF is high. Check pump is working) SBR1 High Level (Check valves and pump to ensure SBR1 is emptying when cycled on) SBR2 High Level (Check valves and pump to ensure SBR2 is emptying when cycled on) <p>Alarms are sent to the maintenance and HSE phone plus email communications.</p> <p>A second level sensor has been installed in the DAF as requested.</p> <p>This sensor is now used in parallel with the original sensor to generate alarms and also control the DAF feed pump. This will give full redundancy if the original fails.</p> <p>Our proposal provides a more robust option for managing waste overflow issues and containment whilst still allowing the factory to continue operating.</p>	
Harvey Fresh response to second Amendment Draft		
1 - Table 1 Stormwater sluice gate (a) Must remain in the closed position during January to March.	Having checked the drain- water is still currently flowing from the Darling Ranges and closing this currently Feb would cause back up of stormwater into the factory very quickly	The Delegated Officer removed the condition to keep sluice gate shut between January and March from the licence amendment to avoid potential flooding in the factory.
2. Improvement works – secondary containment. The licence holder must, by 1 February 2022, construct secondary containment around the wastewater treatment plant area.	Request date to be 31st July 2022 weather and supplies permitting. As we cannot commence our capex required without approval of this Licence	The Delegated Officer agrees with the new timeframe. Conditions updated to reflect the new date
6.The licence holder must, by 1 December 2021, upgrade the PLC	The condition has been completed, so it can be removed from the licence.	The Delegated Officer is satisfied with the PLC system upgrade. Condition removed

Condition	Summary of Licence Holder's comment	Department's response
system for the EQ tank to include a redundancy backup for the tank capacity monitor and alarm		
7. The licence holder must submit to the CEO, within 7 calendar days of the PLC upgrades being installed in accordance with condition 6, a report that demonstrates the required upgrades have been installed.	Report for our completed PLC upgrade required by condition 6 attached with this response.	The Delegated Officer is satisfied with the PLC system upgrade report. Condition removed and numbering updated.
8 Table 2 (a) As from 30 April 2022, no irrigation over the months of May, June, July and August may occur	Can this be reworded to reflect the use of the WIMP?	No change to the condition. Condition 8 was not part of this amendment.
9. The licence holder must submit to the CEO, by 28 February 2021, a winter irrigation management plan	Change to 28th Feb 2022	No change to the condition. Condition 9 was not part of this amendment.
Table 9	Review format	Format updated.
Definitions Wastewater treatment plant area	No longer in this amendment due to changed proposal so can be removed	The wastewater treatment area is part of the prescribed premises. No change to the definition.