Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

Part V Division 3 of the *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 6220 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 1919 and 192 on Plan 202109.
Date of Report	13/03/2025
Proposed Decision	Revised licence granted

1. Purpose and scope of assessment

Harvey Fresh (1994) Ltd (licence holder) is seeking an amendment to licence L4404/1991/15 to store wastewater within Pond 3 at the existing Harvey Fresh Dairy and Juice Factories (Harvey Fresh, the premises) located at Third Street, Harvey. An application for a licence amendment was submitted by the licence holder under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act).

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://dwer.wa.gov.au/regulatory-documents.

1.1 Background and amendment summary

Harvey Fresh holds licence L4404/1991/15 for milk processing (category 17) and non-alcoholic beverage (juice) manufacturing (category 24) at the premises with processing facilities located approximately 1.5 km north of Harvey on the Swan Coastal Plain, approximately 120 km south of Perth.

On 1 August 2024 the licence holder submitted an application to the department to amend licence L4404/1991/15 to include the continued operation of Pond 3, which was constructed under works approval W6463/2020/1.

Works approval W6463/2020/1 was granted to the licence holder in May 2021 for the:

- construction and time-limited operation of Pond 3;
- installation of three groundwater monitoring bores (MB08, MB09, MB10);
- refurbishment of two groundwater monitoring bores (MB11 and MB12); and
- desludging of Pond 1.

This licence amendment is to continue operation of Pond 3 and to include the above groundwater monitoring bores on the licence.

2. Environmental compliance

2.1 Construction and time-limited operation of Pond 3

The critical containment infrastructure report (CCIR) for Pond 3 was received 29 November 2023, with additional information received on 14 February 2024, 8 March 2024, 10 May 2024 and 1 August 2024.

The department reviewed the information provided and responded to the licence holder on 13 December 2023, 14 February 2024 and 21 May 2024.

The department notes the following in relation to the construction of Pond 3:

- Construction was completed in mid to late 2022 with the CCIR submitted more than 30 days after construction.
- The *Materials Geophysical analyses – dry density and moisture content* report provided in Appendix E of the CCIR indicated that some samples analysed had an optimum moisture content greater than the allowed 2% variation. Results of testing also showed that some samples did not meet the required dry density ratio of 95%.
- Information was provided that stated the subgrade was installed in two layers of 400-500 mm, with the surface prepared such that it was free of debris, roots, sticks and sharp rocks.
- Photos and as-constructed drawings were provided of the underdrainage system which included drains, aspiromatic cowl surrounded by a gabion, and fencing.
- It is understood that Harvey Fresh selected and installed a high-density polyethylene

liner (HDPE) with a higher specification and resistance to UV light to avoid the requirement (as per condition 1 of W6463/2020/1) to cover portions of the liner that may have been exposed to and degrade under sunlight.

- A leak detection survey (as per condition 1 of W6463/2020/1) was not completed due to rainfall. Harvey Fresh determined that it was unfeasible to drain the pond to conduct the test. It is understood that Harvey Fresh have since conducted two pond drop tests, 18-21 December 2023 and 17-20 June 2024.

  The department understands that the results of the test conducted in December 2023 show that there was an 18 mm drop (approximate loss of 74.3 m^3/day) over the 68 hours of the test that was not attributed to evaporation. Havey Fresh investigated the water loss and identified that an isolation valve may not have been closed during the pond drop test.

  The department understands that the results of the test conducted in June 2024 show fluctuations in the water level; however, the overall water level of the pond remained constant. Harvey Fresh attributed the fluctuations to: level sensor accuracy of ±0.1%; boom arm holding the level sensor is susceptible to movement due to wind; and barometric pressure readings taken from Bunbury, approximately 37 km SW of the premises.
- Photographic evidence of the installed freeboard marker has been provided which is shown to be positioned such that it is easily viewed by a person standing near the edge of the pond. Indicators on the marker showing full, 250, 500 and 750 mm are visible in the photo.

The department notes that the licence holder has stated that time limited operations (TLO) commenced on 13 December 2023. The licence holder confirmed that a minimum operational freeboard of 500 mm was maintained at all times during TLO.

2.2 Installation of groundwater monitoring bores MB08 – MB10

The works approval, W6463/2020/1, required the groundwater monitoring bores to be designed and constructed such that well screens must target the part, or parts, of the aquifer most likely to be affected by contamination (with a note to refer to Section 8 of Schedule B2 of the Assessment of Site Contamination NEPM for guidance on well screen depth and length).

MB08, MB09 and MB10 were drilled on 24 and 25 January 2022, with the report being first submitted on 14 February 2024, more than 60 calendar days after the bores were constructed.

The report states that these bores were drilled to a depth of 15 metres below ground level (mbgl) and screened from 13 to 15 mbgl. The soils where each bore has been drilled is gravelly clay and they have been screened within clay (MB08 and MB09) or gravelly clay (MB10) soil.

The licence holder monitored these bores quarterly in 2022, then once in June 2024. The licence holder has stated that the other quarterly monitoring events were mistakenly missed.

Groundwater monitoring results show standing water level at the surface for MB08, from 3.4 to 4.4 mbgl for MB09 and from 3.3 to 5.2 mbgl for MB10.

The purpose of these monitoring bores, as per the decision report associated with works approval W6463/2020/1, is to enable early detection and proactive management of contamination from seepage from the new pond. MB08, MB09 and MB10 were to be located and constructed appropriately to enable assessment of the risk of a radial groundwater flow pattern developing if there is excessive leaking from the pond.

Noting that these bores are screened at 13 to 15 mbgl, results of quarterly monitoring in 2022 show that bores downgradient of Pond 3 (MB09 and MB10) had higher levels of total phosphorus (TP), total nitrogen (TN), salinity (EC), arsenic, nickel, and major ions (Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, HCO_3^- and SO_4^{2-}) than the upgradient bore (MB08). The licence holder noted in documentation submitted on 10 May 2024 that these bores had not been sampled since June

2022 and would provide further monitoring results to the department when available with a view to determining the potential source of these contaminants.

Monitoring results for June 2024 were provided with the licence amendment application which show MB09 results for the above parameters remained higher than MB08. MB10 was higher than MB08 in the above parameters except for K^+, Ca^{2+}, Mg^{2+}. The licence holder has not provided an explanation for the potential source of these contaminants.

2.3 Refurbishment of groundwater monitoring bores MB11, MB12

Groundwater monitoring bores MB11 and MB12 were existing on the premises and refurbished by the licence holder through works approval W6463/2020/1.

While both bores were proposed to be refurbished by the applicant, the risk assessment for the works approval stated that MB12 was to be recommissioned to assess the risk of downgradient contamination if there is extensive leaking from the ponds; and MB11 was to be recommissioned to assess the quality of groundwater that is entering the premises.

The licence holder advised that both bores are approximately 10 m deep; however, no bore logs have been provided and screen length and depth is unknown. MB11 was found to be potentially artesian as additional casing was required to be added to contain the water that was rising above the top of the existing casing. MB12 was blocked by tree roots, which has now been cleared. The licence holder has confirmed that both bores are now able to be sampled.

Groundwater sampling results for these bores have been provided for October and December 2022, and June 2024. The department assumes that the other quarterly monitoring events were mistakenly missed, as they were for MB08-MB10. For all parameters sampled MB11 has similar results to MB08 (both upgradient of the ponds). Groundwater monitoring results for MB12 (downgradient of the ponds) are significantly higher than MB11 for EC, TN, TP, total alkalinity, Na^+, Ca^{2+}, Mg^{2+}, Cl^-, HCO_3^-, and SO_4^{2-}. No metal sampling results have been provided.

The licence holder has not provided an explanation for the higher results within MB12 or the potential source of these contaminants.

2.4 Pond 1

The department understands that the desludging of Pond 1 was completed, with the pond de-sludge closure report completed by EnForce Industries and dated 9 April 2021.

3. Consultation

Table 1 provides a summary of the consultation undertaken by the department.

Table 1: Consultation

Consultation method	Comments received	Department response
Stakeholder advised of proposal (22 October 2024)	Comments received 4 November 2024. Those comments relating to this licence amendment are summarised below: • Operational capacity of Pond 3 – concerns regarding large rainfall events and overtopping of the pond. • Concerns regarding the proximity of the Harvey River to the premises. • Happy to see monitoring points have been added.	Pond 3 has been designed and constructed with sufficient capacity to contain rainfall during a 5% Annual Exceedance Probability event (see associated decision report to works approval W6463/2020/1). The pond will operate with a minimum freeboard of 500 mm, which has been included in the conditions of the revised licence. This freeboard is managed by the licence holder which may include irrigation of the wastewater (in accordance with conditions of the licence), storing wastewater within other wastewater storage ponds onsite, or removing wastewater from the premises to a facility licensed to accept the waste. The Harvey River was considered as a potential receptor as part of the risk assessment for W6463/2020/1.

	Hope that monitoring results will be reviewed on a regular basis. • Concerned about general housekeeping practices and potential river pollution.	It is unclear which monitoring points the stakeholder is referring to as their comments mention surface water monitoring points. No additional surface water monitoring points have been added to the licence with this amendment; however, additional groundwater monitoring bore locations have been included. The result of all monitoring is required to be submitted to the department annually. The licence holder is required to submit an annual environmental report that includes a summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken. They are required to comply with the conditions of their licence. Emissions and discharges not authorised under the licence can be managed under the general provisions of the *Environmental Protection Act 1986* and associated regulations.
Licence Holder provided with draft amendment on 10/02/2025	No written comments were received. Summary of comments made during a telephone conversation on Monday, 10 March 2025 are below: • Agreed with the conditions in the draft licence. • Want Pond 1 to remain on the licence but they will not use it until it is relined. Questioned if this will require a works approval or licence amendment.	Given that the licence holder has stated that they will not use Pond 1 until it is relined, the delegated officer has amended the licence such that Pond 1 must not be used for the storage of wastewater or potentially contaminated stormwater. The licence holder may apply for a works approval or licence amendment to reline the pond, following which (subject to compliance with any construction conditions and any further licence amendments) the pond may be used for the storage of wastewater.

4. Decision

The assessment of potential risks to the environment and public health from emissions and discharges during construction and operation of a new wastewater storage pond (Pond 3) and desludging of the existing pond (Pond 1) on the premises was completed under works approval W6463/2020/1. Any deviations from the requirements of that works approval are discussed below.

Pond 3

The delegated officer has determined to grant the amendment for the storage of wastewater within Pond 3 constructed under W6463/2020/1.

The delegated officer notes that a different HDPE liner was installed, and the leak detection survey was omitted.

The requirement to maintain a cover over the area of liner exposed to sunlight with earth or sacrificial material was an additional regulatory requirement in the works approval. It was included due to the partially raised pond, which increases the vulnerability of the aboveground area of the HDPE liner to degradation caused by exposure to sunlight and other elements, increasing the risk of tearing. The delegated officer has considered the HDPE liner installed by the licence holder, which has a higher specification and resistance to UV light and has determined that the variation does not significantly change the previous risk assessment completed for the works approval.

The delegated officer has determined that the omittance of the leak detection survey does not significantly change the previous risk assessment completed for the works approval. The delegated officer notes that two pond drop tests have been conducted to date. While the first test showed an 18 mm drop, this was attributed to an isolation valve being left open; with the

second test showing that the pond level remained constant. The requirement to conduct an annual pond drop test will be included on the licence, as it was in the works approval.

Other operational requirements that were included in the works approval, such as maintaining a 500 mm freeboard, will be included on the licence.

Groundwater monitoring bores MB08-MB10

The previous risk assessment, completed under works approval W6463/2020/1, determined that an underdrainage system and new groundwater monitoring bores with a specified monitoring regime is required to defer and detect any contamination from wastewater stored within Pond 3. Direct discharge to ground, intrusion, or infiltration of contaminated wastewater into groundwater has the potential to cause adverse impacts to groundwater and soil.

Condition 2 of the works approval required the licence holder to install the groundwater monitoring bores such that *"well screens must target the part, or parts, of the aquifer most likely to be affected by contamination"* with a note to *"refer to Section 8 of Schedule B2 of the Assessment of Site Contamination NEPM for guidance on well screen depth and length"*. Additionally, it has been recommended that each bore is drilled to a depth of 3 to 6 m below the maximum groundwater table and is constructed of 50 mm diameter PVC casing with a 3-metre-long slotted interval at the base of each bore.

Bores MB08 to MB10 have been screened at least 9.5 m below the maximum standing water level detected in the bores, based on results from the quarterly groundwater monitoring in 2022 and June 2024.

Considering the requirements of works approval W6463/2020/1 and associated risk assessment, the delegated officer has determined that groundwater monitoring bores MB08, MB09 and MB10 have not been constructed appropriately (details of construction in section 2.2) and are not suitable for detecting potential groundwater contamination from any leakage from Pond 3.

Therefore, the delegated officer has determined that three new bores must be constructed around Pond 3, one hydraulically upgradient and two hydraulically downgradient, along the western and southern boundary of Pond 3. These bores must be constructed such that they are screened at approximately 3 to 6 m below the maximum groundwater level. The construction requirements from the works approval will be included in the licence.

Standing water level, pH and electrical conductivity will be required to be monitored monthly until 24 consecutive data has been recorded, then quarterly thereafter. This will establish a clear understanding of seasonal groundwater depth fluctuations.

Arsenic and metals have been added to the parameters for monitoring of water quality in the groundwater bores as per the works approval.

4.1 Summary of amendments

Table 2 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the revised licence as part of the amendment process.

Table 2: Summary of licence amendments

Condition no.	Proposed amendments
Cover page	Corrected postcode for premises address from 6229 to 6220.
1	Infrastructure table: • Clarified Pond 2A and Pond 2B as the two compartments of the winter storage pond. Added infrastructure location for these ponds. • Pond 3 added to the infrastructure table. Operational requirements include only accepting wastewater from the wastewater treatment system and a minimum operational freeboard of 500 mm.

Condition no.	Proposed amendments
	• Specified that Pond 1 must not be used for the storage of wastewater or potentially contaminated stormwater.
8	Works – additional groundwater monitoring bores • Clarified title in column two (added “design” and “and installation” • Added column 3 – monitoring well location(s) • Added requirement to install 3 new groundwater monitoring bores – MB15 – MB17
9	Updated wording of existing condition. No change to intent of condition.
10	Clarified that this existing condition refers to groundwater monitoring bores MB13 and MB14.
21	Monitoring of emissions to land: • Added requirement to monitor wastewater quality from Pond 3 when irrigating from that pond. • Clarified that in-field, non-NATA accredited sampling is permitted for electrical conductivity.
22	New condition – monitoring of Pond 3 liner integrity – pond drop leakage test
24	Monitoring of ambient groundwater quality: • Added groundwater monitoring bores MB11, MB12, MB15, MB16 and MB17. • Clarified that MB15 – MB17 monitoring is to commence within 30 days of bore installation. • Clarified that in-field, non-NATA accredited sampling is permitted for standing water level. • Added requirement to monitor arsenic quarterly and metals (Cd, Cr, Co, Cu, Hg, Ni, Zn) annually.
29	Added the requirement to report the Pond 3 pond drop leakage test results in the annual environmental report.
Definitions	Added definitions for AS1726, ASTM D5092/D5092M-16, Cd, Co, Cr, Cu, freeboard, HDPE, Hg, IPENZ 2017, Ni and Zn.
Schedule 1: Maps	• Added “1” to the end of the map title “Groundwater monitoring bore locations map”. • New map added – Groundwater monitoring bore locations map 2 – for the location of MB11, MB12, MB15 – MB17, and locations of Pond 3, Pond 2A and Pond 2B

5. References

1. Clasby, Julia (2024), Email to Department of Water and Environmental Regulation (DWER) *Works Approval W6463/2020/1 – Pond 3 Critical Containment Infrastructure report and groundwater monitoring well construction*, 14 February 2024.
2. Clasby, Julia (2024), Email to DWER *Works Approval W6463/2020/1 – Pond 3 Critical Containment Infrastructure report and groundwater monitoring well construction*, 8 March 2024.
3. Clasby, Julia (2024), Email to DWER *Works Approval Compliance Report*, 10 May 2024.
4. Clasby, Julia (2024), Email to DWER *Licence L4404/1991/15 Amendment Application*, 1 August 2024.
5. DWER (2023), Email to Lorraine Lovatt *Notification: Works Approval W6463/2020/1 – Pond 3 Critical Containment Infrastructure Report and Groundwater Monitoring Well Construction*, 13 December 2023.
6. DWER (2024), Email to Julia Clasby *FW: Works Approval W6463/2020/1 – Pond 3 Critical Containment infrastructure report and groundwater monitoring well construction*, 14 February 2024.
7. DWER (2024), Email to Sandro Costabile *Applicant Notification – W6463/2020/1 Harvey Fresh Dairy and Juice Factories – Review of Works Approval Compliance Report*, 21 May 2024.
8. Lovatt, Lorraine (2023), Email to DWER *Lactalis Pond 3 CCIR*, 29 November 2023.
9. National Environment Protection Council (NEPC) (1999), *National Environment Protection Council (Assessment of Site Contamination) Measure* (NEPM) *1999 – Schedule B2 – Guideline on Site Characterisation*.
10. Works Approval W6463/2020/1, Issued to Harvey Fresh (1994) Ltd on 11 May 2021 by the Department of Water and Environmental Regulation.