Enhanced Controls Plan – Interim Management of Existing Sludge Tanks

Site: Dairy Partners (Cymru Wales) Limited – The Creamery, Aberarad, Newcastle Emlyn
Permit: EPR WP3231NB
Assets Covered: Existing sludge storage tanks (polypropylene)
Status: Known degraded / life-expired assets
Purpose: Interim risk management pending permit variation and permanent replacement

1. Purpose and Scope

This plan constitutes an interim revision to operating techniques and is subject to Natural Resources Wales engagement and written agreement in accordance with Permit Condition 2.3.1(b) prior to continued reliance.

This document is a controlled Environmental Management System (EMS) procedure prepared in accordance with Permit Condition 1.1 and BAT Conclusion 1 (EMS). It defines mandatory interim controls for the continued operation of ageing sludge storage tanks pending permanent replacement under a future permit variation.

This Enhanced Controls Plan sets out the interim measures implemented to manage the environmental risks associated with the continued operation of existing sludge tanks that are known to be degraded and not suitable for long-term service.

The purpose of this plan is to:

- Prevent pollution arising from ageing sludge tanks;
- Maintain risks **As Low As Reasonably Practicable (ALARP)** during the interim period;
- Demonstrate continued compliance with Permit Conditions 1.1, 3.2.3, 3.3, and 4.3;
- Provide objective, enforceable operational limits, inspection regimes, and shutdown criteria.

This plan applies to all existing polypropylene sludge storage tanks located at the Dairy Partners (Cymru Wales) Limited installation.

2. Asset Condition Summary

The sludge tanks are life-expired assets exhibiting:

- Internal surface degradation;
- Compromised roof and hatch integrity;
- Increased odour leakage potential.

Continued operation without enhanced controls would present an unacceptable pollution risk.

Replacement and permanent secondary containment are being progressed via the permitting process; however, an interim period of operation is unavoidable.

3. Risk Management Strategy

The interim strategy is based on four principles:

1. Load reduction to reduce stress on degraded assets
2. Early detection through enhanced inspection and monitoring
3. Consequence limitation through containment and drainage isolation
4. Rapid escalation and shutdown to prevent pollution

In accordance with BAT Conclusions 1 and 15:

- Elimination / substitution is not immediately practicable due to lead times for replacement.
- Engineered controls are implemented where reasonably practicable (odour abatement connection, drainage isolation, load reduction).
- Procedural controls are applied only where engineered solutions cannot be delivered within the interim timeframe.
- Residual risks are managed through objective limits, monitoring, and defined shutdown triggers.

4. Operational Controls

4.1 Maximum Operating Volumes

- Absolute maximum operating volume: 80% of design capacity.
- Procedural alarm trigger: 75% of design capacity.

Requirements:

- Operation above 75% requires immediate management notification.
- Operation above 80% is prohibited without written authorisation from the Plant Manager and HSE Lead.
- Overfilling is strictly prohibited.

These limits maintain a minimum freeboard to:

- Reduce hydrostatic loading;
- Accommodate abnormal inflows;
- Provide response time before loss of containment.

4.2 Process Controls

All sludge transfers shall be supervised by trained personnel.

Tank levels shall be verified before and during transfer.

Transfers shall cease immediately if:

- Abnormal odour increase is detected;
- Structural or level anomalies are observed.

5. Enhanced Inspection and Monitoring

5.1 Inspection Frequency

- Daily visual inspection of sludge tanks during operation.
- Event-based inspections following high loading, abnormal operation, or complaints.

5.2 Inspection Scope

Inspections shall assess:

- Roofs, hatches, and seals
- Tank walls, joints and visible deformation
- External sludge deposits or leakage; and
- Odour intensity relative to OMP trigger levels.

Any deviation from baseline conditions constitutes a defect requiring escalation.

5.3 Record Keeping

- All inspections to be recorded, as EMS records.
- Photographic evidence shall be taken where defects are observed
- Records retained in accordance with Permit Condition 4.1.

6. Secondary Containment and Drainage Controls

The existing sludge tanks do not currently benefit from full secondary containment.

As an interim measure:

- Drainage isolation points are maintained closed during operation;
- Absorbent materials are positioned at known weak points;
- Immediate clean down is mandatory if sludge is observed externally.

These measures do not replace secondary containment but reduce consequence pending permanent works.

A secondary containment lagoon is being progressed.

Design will comply with CIRIA C736 and Permit Condition 3.2.3, demonstrating capacity of:

- 110% of the largest tank, or
- 25% of total stored volume, whichever is greater.

Calculations and drawings will be submitted via permit variation.

7. Odour Management Controls

- All tank vents to remain connected to operational odour abatement systems.
- Carbon filters to be inspected and maintained in accordance with the Odour Management Plan (OMP).
- Temporary sealing shall be applied to compromised hatches and interfaces, where safe and practicable.

These measures demonstrate consistency with BAT Conclusion 15 and Permit Condition 3.3

8. Escalation Criteria and Shutdown Triggers

Immediate escalation is required if any of the following occur:

- Visible structural change from baseline
- Any confirmed loss of containment
- Odour levels exceeding OMP trigger thresholds; and
- Failure of temporary sealing measures

On confirmation of an escalation event:

- Sludge transfers shall stop immediately
- All tanks shall be isolated
- Contingency arrangements shall be implemented; and
- NRW shall be notified where required

9. Contingency Arrangements

In the event of deterioration or failure:

- Sludge diversion to alternative controlled containment where available
- Emergency tankering via contracted provider (response time < 4 hours)
- Production reduction or cessation if necessary to prevent pollution

10. Regulatory Notification

Any incident, loss of containment, abnormal odour event, or permit breach shall be notified to NRW in accordance with Permit Condition 4.3 and Schedule 5, including:

- Immediate notification;
- Written follow-up within prescribed timescales.

11. Review and Duration

Review frequency: Weekly or immediately following any abnormal event.

Document owner: HSE Lead.

Approval authority: Plant Manager.

This plan remains in force until tank removal or replacement under an approved permit variation.

Appendix A

Appendix A – Sludge Tank Inspection Checklist

☐ Tank identification (Tank 1 / Tank 2)
☐ Date / time
☐ Inspector name

Structural condition

☐ Roof condition
☐ Hatch fit & seals
☐ Tank walls
☐ Base / supports
☐ Signs of deformation

Containment

☐ No visible leaks
☐ No sludge deposits externally
☐ Surrounding ground condition

Ventilation / odour

☐ Breather pipework condition
☐ Carbon filter condition
☐ Odour present (Y/N)
☐ Odour intensity (low / medium / high)

Operational

☐ Tank level within limits
☐ Recent transfers reviewed
☐ Any abnormal behaviour

Comments / actions

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☐ Photos taken (Y/N)
☐ Escalation required (Y/N)

Signature: _____