

Schedule 5 request for more information EPR/XP3830UR/V007 (PAN-019159)

Project Augerre permit variation application.

Issued: 17th Feb 2023

Response deadline: 14th March 2023

Information on containment with reference to the CIRIA C736

We need to assess your proposed containment measures against recognised standards for all new tanks and storage vessels to be added to your site.

Please refer to the environmental risk assessment (attached) which references our storage vessels on site, previously submitted to yourselves.

Provide details of the construction of any containment in-line with the CIRIA C736 guidelines.

With respect to the new silos, we have not constructed any specific containment for these. Historically the silos on site have not had any containment built into their installation and the sites main focus on these vessels has been primary and tertiary containment.

The silos are subject to routine checks and inspections by the on-site engineering team and are subject to crack testing on an annual basis. The silos are constructed of 304 or 316 stainless steel with the base typically being 5mm and 3-4mm for the remainder of the height.

To date we have not experienced a failure of a silo that would result in the volume of milk contained within it to be lost i.e. a catastrophic failure. Our past experience indicates that the more likely failure that would result in loss from a silo would be a failure of a valve or pipework joint etc where the milk is transferred out from the silo and onto production.

In such a scenario, the loss would not be instantaneous and would be directed to drain which in turn would contain the loss to our Effluent Treatment Plant (ETP) downstream. Were this to occur, operationally we would have the option at that stage to run down the silo by directing the volume to production thus minimising any loss to drain.

Given the lack of any prior historic event of major loss from a silo on site we do not believe that such an event across multiple silos at the same time is likely.

Were there to be an unlikely "catastrophic" failure of one of the silos it should be noted that each are clad with PVC coated Prisma profile cladding. This would significantly reduce the effect of jetting and thus is anticipated would keep the loss localised to the silo area / base.

With respect to the new cheese vats, we have not constructed any specific containment for these. These new vats have been positioned next to the existing vats within the factory building (cheese room) and as such are subject to the same drainage system which would take any loss from them to the site effluent treatment plant. The vats are subject to routine checks and inspections by the on-site engineering team and are subject to crack testing on an annual basis.

To note, the volume of a cheese vat is 25,000L. The size of the balance tank at the Effluent Treatment Plant is 1,800,000L with an additional capacity of 1,800,000L within the treated divert tanks.

Provide the total volume of the milk, whey, cheese and any other substances being stored on site (both existing volumes and new volumes).

Please find below the difference in volumes stored on site as a result of the changes:

Please note that the difference in stored volume is not significant given the project has only installed 1x new milk silo, 1x cream silo and replaced 1x whey silo with an increased capacity silo.

	Additional	Existing	New
Milk	0.36M L	1.36M L	1.66ML
Whey	55000L	75000L	130000L
Cheese	None	n/a	n/a
Cream	80000L	100000L	180000L

Please note, when quoting “none” in the additional cheese storage this is due to there being no specific expansion of the limited cheese storage in existence at the site. Cheese once produced is despatched from site for external 3rd party storage for ongoing maturation etc.

Provide the total volume of liquid that the drainage system and tanks are able to hold including in the event of a worst case scenario where there is a loss of primary containment for all vats, silos and tanks what percentage of the volume can be retained by the site drainage and divert tanks.

Please find below a summary of estimated drainage capacity and effluent treatment plant capacity

With regard to a loss of primary containment for all vats, silos and tanks we do not envisage such a scenario happening at the site. As previously noted, to date we have not experienced a failure of a silo that would result in the volume of milk contained within it to be lost i.e. a catastrophic failure. Our past experience indicates that the more likely failure that would result in loss from a silo would be a failure of a valve or pipework joint etc where the milk is transferred out from the silo and onto production. This however remains a very rare occurrence in itself.

It is therefore considered by ourselves to be extremely unlikely to have multiple vessel failures at the same time and extremely improbable therefore to have a scenario where there is a loss of primary containment for all vats, silos and tanks at the site.

We, through our on-site engineering team and external contractors carry out maintenance and checks on the vessels to ensure they remain fit for purpose. As previously noted the silos are subject to routine checks and inspections by the on-site engineering team and are subject to crack testing on an annual basis.

Drainage system estimated capacity:
4713 L

(150m of 0.2m diameter pipe)

Effluent Treatment Plant capacity:

With regard to the Effluent Treatment Plant there is typically a capacity of 1,860,000 L

- Balance tank spare capacity; 720,000L
- Divert and final discharge divert tanks; 1,000,000L
- Raw Divert Tank; 140,000L

Please also note that within the capacity at the Effluent Treatment Plant we would, in such a scenario, have the capacity to tanker away liquid arriving at the plant through arrangements with a 3rd party haulier. Such a haulier could potentially tanker from site around the clock, vehicle fleet being the limiting factor.

It is considered estimated that the haulier could remove 30 tankers per day at 28 tonnes per day. This equates to 840 tonnes or 840,000L per day removed from the site process should it be required.

In the event of loss of containment from the tanks, provide the maximum volume of liquid that the effluent treatment plant can process.

The Effluent Treatment Plant can process 2500m³ per day in line with the consent. This could be increased but would only be done so in consultation with NRW.

Provide an updated drainage plan which includes the new and existing silo/vats.

We do not currently have an updated drainage plan that shows the new silos and vats.

However, please find attached our existing site drainage plan with the new silo and vat's location annotated on for your attention.

Please note, the new milk silos are on an extension the silo bed that houses the historic milk silos and that the new cheese vats, as mentioned previously, are located next to the existing vats inside the building within the Cheeseroom.

See appendix 1 at end of document

Confirmation that the existing surface where the new tanks are to be located is hardstanding (impenetrable concrete or equivalent).

We can confirm that the surface where the new silos and vats are located are hardstanding.

Please see below photos for your reference of the milk silo bases (external) and cheese vat location (internal as previously described).

Photo 1 – milk silo



Photo 2 – cheese vats



We need more information on the odour risks posed by the changes you are seeking to implement for your site. This includes:

- *Details of the existing odour abatement you have for dealing with odorous emissions from the site. This should include any ventilation points from tanks and ventilation ducts from buildings, etc.*

With respect to this aspect we can confirm that there are no significantly odorous processes at the creamery. Milk is delivered in tankers and transferred through a closed pipe system to silos located at the site. The silos are chilled and therefore no odour is produced. Any small-scale spillages that may occur at milk intake are promptly cleaned up by either the 3rd party hauliers or the Operations team with any liquid washed to effluent drains in the locality.

The plant is regularly walked with observations made on any leaks in order to a) prevent loss of product and b) prevent any pooling of milk or whey products that could cause an odour issue.

The milk pasteurisation process is all carried out within enclosed plate heat exchangers that are themselves located within the building.

The cheese manufacture process itself is not an odorous one with milk moved to enclosed vats, cultures added and the milk put through a defined recipe process. The remainder of the cheese process is a draining conveyor to remove whey, a cheddaring tower, a salting conveyor where salt is added to the curd and then a block forming process whereby the curd is compacted into 20kg blocks ready to be shrink wrapped.

In the event that the site generates waste cheese, this is bagged and stored in dolavs before it is removed from site by a waste contractor. The volume of such waste is typically limited to 6 dolavs of waste given the capacity of the waste haulier's vehicle and as such the amount of this waste that is stored at the site at any time is limited.

As a result we do not have any odour abatement to deal with emissions from the cheese and whey making process.

The introduction of additional capacity does not therefore add to any existing odour control needed at the site or call into review any existing capacities regarding odour abatement.

With regards to the site's effluent treatment plant the risk of odour is still limited however more likely than at the creamery itself. The two main areas identified at that location as potentially posing an odour source are the DAF 1 and the removal of sludge from the site via tankers.

With respect to the DAF 1, the site has installed a cover for the open top design of the DAF. This was the agreed method with NRW to be employed at this stage of the process, agreed at the time of the ETP installation. This acts to reduce and minimise the potential for odour to be emitted from this part of the process.

With respect to the tanker collections of sludge from the sludge tanks, this is done by attaching pipework to the tanks and suctioning the sludge to the tanker. As air is displaced from the tanker there is potential for the air to have a taint to it. As a result the Effluent Treatment Plant has in place carbon filters which are attached to the tankers to minimise the odour released.

There are also odour abatement filters on DAF 1, The Thickener and on the Thick and Think tank. These are on a PM schedule managed by the ETO operator.

For any existing odour abatement equipment please specify its current performance, loading capacity and provide evidence that it will be able to abate any additional odorous emissions from the additional tanks on site.

Currently the effluent treatment plant has odour abatement filters on DAF 1, the Thickener and on the Thick and Think tank with an additional mobile filter used to attach to the tanker when a collection of sludge is taking place.

The current ETP operator has taken over running of the plant in December 2022 and is currently in the process of reviewing a number of arrangements at the plant which also includes a review of the planned maintenance on the filters which have been added to a maintenance schedule at the plant.

It is not considered that the additional tanks at the production site will have any significant affect on the ability of the ETP to continue to operate in its current manner and/or that any additional abatement will be required as a result of the additional tanks at the site.

Details of any protocols for dealing with odour complaints from nearby residential receptors. This should include any review process on the odour abatement techniques.

The site, during the summer of 2022 experienced a number of complaints made to the site from local residents regarding odour. When such a complaint was received a member of the site management team would walk the Effluent Treatment Plant to ascertain if there was any note of odour coming from the process with a view to confirm if there was no issue or if there was an issue that needed actioning.

What was noted during such walks and as a general observation from the site was that there was a noticeable odour coming from the Welsh Water Effluent Treatment Plant which is located approx. 500m from the First Milk ETP.

As a result of this we as a site team engaged with a local resident group and local councillor to invite them to our site as part of our community engagement. We hosted a site visit to the creamery and invited the residents to tour the cheese making process so that they could understand the process and get a clear sense of the odours, or lack of them emanating from the cheese making process. We then took the councillor and residents on a tour of the Effluent Treatment Plant with the ETP operator to again give them a clear sense of what the operation involved and what odours may emit from the process.

It was clear through the feedback on the day that the complaints they had were / should have been directed to the Welsh Water sewerage works but that without the insight we were able to give them they could not be sure where the odour was emanating. They left site clear in their mind that the smells they were experiencing were not the same as our ETP process odours.

As part of the permit improvement conditions the site was issued (Improvement Condition 7) we are currently in the process of reviewing the odour management plan for the site with a view to submit this in June to NRW in line with the due date for this action (04/06/2023).

Additional milk intake bay and pump

Can you specify if the additional milk intake bay and pump is located indoor or within an enclosed space and, with reference to BAT 14 of the BREF for Food, Drink and Milk Industries, what techniques are used to minimise

noise impact. If there are noise abatement techniques for the existing site, have these been reassessed to take into account both the existing and new pumps/bays.

With respect to the additional milk intake bay and pump this is located as the other milk intake bays under a canopy and enclosed on three sides. The fourth, open side is then partially barriered by the presence of the tanker itself during unloading. The pump is a LKH Prime 40 pump

The noise levels are typically low at this location with an indicative reading taken of 80dB at this location when a tanker is on the bay running its engine. At the edge of the canopy the reading was approx. 78dB. At the other side of the yard at the perimeter fence line the reading was approx. 73dB.

The nearest residential property in that direction is a single house 220m away from site which is located the other side of the A4076 which runs parallel to the site to the north of the site. It is considered that the traffic noise from the busy A-road far exceeds any noise that would be emitted from the loading bays.

The Engineering team at site carry out ongoing maintenance on the intake pumps as part of their planned preventive maintenance schedules. The pumps are subject to a 3 monthly PPM which includes a vibration analysis, condition monitoring and checks for bearing issues and leaks etc. The pumps are also subject to a 3 weekly visual check ongoing to ensure there are no operational issues that require attention. This to ensure the pumps operate as they should and serves to ensure they are not generating any excessive noise.

As part of the permit improvement conditions the site was issued (Improvement Condition 6) we are currently in the process of reviewing the noise management plan for the site with a view to submit this in June to NRW in line with the due date for this action (04/06/2023).

Cleaning in Place

Can you specify if the site will continue to meet the requirements of BAT 7 and BAT 8 (BREF for Food, Drink and Milk Industries) as a result of the changes to the cleaning in place (CIP) sets.

The site has historically continued to improve the CIP systems at the site. In 2016 a new CIP set replaced the old system that covered cheddar tower, draining & salting belts, whey separators, whey silos and lines. This upgraded the old system and included energy efficient pumps with VSD control, had much greater flexibility and control and was fully visible and controllable through the site SCADA system, enabling optimisation for water, chemical and product loss to drain.

As part of project Augerre, two further old CIP sets (Blockformer system originally installed in the 1990's and the VAT system installed in 2005) were removed and the cleans accommodated through the expansion of the newer more efficient CIP system.

Post installation, work has been ongoing on fine tuning and optimising the process to maximise chemical recovery and re-use, minimise water consumption and loss to drain, without compromising food safety standards.

Appendix 1 – drainage place with locations annotated.

