

Compliance Assessment Report CAR_NRW0042593

Permit being assessed: DP3030ZC.

For: PB Gelatins EPR/DP3030ZC, **held by:** PB Gelatins UK Limited

At: Unit A6 Severn Road , Treforest Industrial Estate, Pontypridd, Rhondda Cynon Taf, CF37 5SQ.

Type of assessment: Audit,

Reason: Routine.

On: 22/08/2023 between 10:30 and 15:00.

Parts of permit assessed: Chemical Storage ~ 3.2.3.

NRW Lead Officer: Dale Padfield, accompanied by Lewis Evans.

Report sent to: Mauricio Caetano Ramos, Plant Director , on 10/10/2023.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR2B - Operations - The site	Assessed (A)	
IR1A - Management - General management	Action only (X)	

Result types are explained in more detail in the 'Important Information' section below.

Total non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

Criteria	Action needed	Complete by
IR1A	Please see actions 1 - 4 within main body of report	31/01/2024

Compliance criteria codes are listed in the 'Important information' section below.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

PB Gelatins UK Limited

EPR/DP3030ZC

Natural Resources Wales (NRW) undertook a containment audit at the PB Gelatins (PBG) Treforest site, the primary objective to assess the chemical storage inline with permit condition 3.2.3:

‘All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.’

The focus of this audit was PBG’s management of their chemical storage vessels, as such, other storage vessels and tanks, such as the process tanks etc. were not assessed during this audit. PBG currently have a total of 14 chemical storage vessels ranging from 0.75m³ to 70 m³ in capacity, storing 20% - 40% sodium hydroxide, 75% phosphoric acid, 35% hydrogen peroxide, 77% sulphuric acid, 32% hydrochloric acid, 15% sodium hypochlorite, 80% acetic acid, acidic water, Trufloc ‘TAC40’ and brine. The storage locations range across three primary locations, A18, A21 and A21 water works, where the chemicals are used in the various ossein treatment and extraction processes and effluent treatment.

As part of the audit, PB were asked to supply all relevant sections of their environment management system (EMS), accident management system (AMS) and planned preventative maintenance regime (PPM) that related to on site management of containment, including both primary and secondary containment, along with any supporting documentation.

The following documents were received;

- 2023-07-12 Chemical Storage Locations A18
- 2023-07-12 Chemical Storage Locations A21
- 2023-07-12 Chemical Storage Locations Water Works
- Bulk Chemical Storage Vessels Details
- EMS 06 – Accident Management Plan
- TRE-EMS09_0
- TRE_MM1020_0
- TRE_MWI 31_1
- TRE_SHE 012_2
- TRE-MWI 32_1

These documents formed the basis for the initial desktop containment audit. Further documentation was examined on site during the onsite audit on the 22nd of August 2023, including calibration certificates, training certificates, virtual filing system containing tank specification documentation and other various documentation held electronically including the ‘SAP’ system detailing maintenance and other information relevant to the audit. Some of these documents are referenced within the report, however no copies were requested from the operator as visual inspection on site was satisfactory.

All chemical storage vessels on site are constructed of high-density polyethylene (HDPE) with secondary

containment in the form of a 'collar bund' constructed of the same material. The collar bunds encapsulate the storage vessels and are structurally independent of the primary vessel. Given the similarity between all the vessels and secondary containment, it was decided to evaluate PBG's overall management of on-site containment and not focus of individual vessels. A selection of evidence was provided on site with different aspects seen for different vessels, thus providing a good overview of how containment is managed. During the site visit, a site walkover was conducted, with eleven of the vessels inspected, to provide assurance that the documentation presented by PBG agreed with what could be physically observed on site.

Environmental Management System (EMS)

The relevant section of PB Gelatins environmental management system that addresses containment is referenced as 'EMS 09' and describes the chemical storage management plan. This section provides details on specification and appropriate design standards that must be used when sourcing new or replacement high-density polyethylene (of HDPE) bulk storage tanks. Considerations are made for compatibility of materials and contents, working temperature, anticipated loading, and external environmental factors such as wind, personnel and snow loading as well as the ancillary equipment that will be in use on the tank. Evidence on site seen for tank 'BC10 – Acetic acid' showing conformity to BS EN 1778:2000, with further evidence seen on the 'details plaques' situated on the HDPE vessels, Such as BC12 showing BS EN 12573 which are both relevant standards for these types of vessel. PBG also demonstrated detailed and in in-depth knowledge of the HDPE tank requirements, and work closely with the tank supplier to ensure the vessels they purchase conform to their design and operation requirements. PBG showed an example of the online portal provided by the tank producer that provides full details of the specific tanks they have purchased, including the design drawings, specifications, vessel identification numbers etc. These documents are also held electronically by PBG, providing resilience to the accessibility of this information.

Considerations for Pre-commissioning examinations have been made, to provide a base-line assessment of the tanks condition to which subsequent data can be compared against, allowing degradation to be detected and assessed. Pre-commissioning also ensures new tanks have not been damaged during transport and installation, have been manufactured to the correct specifications including appropriate valves, plugs, drains and instrumentation, and conforms to the ancillary equipment requirements. This was evidenced on site with tank BC08 pre commissioning inspection report seen. PBG also detailed how this inspection is conducted (by an external contractor) from the vessels arriving on site, a full internal and external inspection prior to the vessel being offloaded, the concrete plinth (base that vessel will be situated) inspected for conformity and inspection once vessels has been positioned and fitted into place. The vessels are also subject to hydrostatic testing at the manufactures facility, with the test results provided to PBG.

Operation of bulk storage tanks has been identified, whereby tanks will be operated within defined safe operating limits. Furthermore, PB have identified that should a tank be subjected to conditions outside the defined operating limits, the tank will be reviewed by a competent person to determine if the tank is fit for continued service. This section (4.3) also refers to an earlier requirement imposed on PB Gelatins by NRW whereby, bulk storage tank installations were to be assessed against CIRIA C736, where differences are identified PB Gelatins were to schedule and implement an improvement plan for upgrading the tank installations storage areas. From the on-site inspection and documentation received, it appears that the improvements plan has been completed.

The requirement for monitoring and inspections has been identified within the EMS. This includes both weekly visual checks on the primary and secondary containment conducted by appropriately trained operating staff and an annual external inspection conducted by a competent person. The tank inspector is to decide if an external / visual inspection is sufficient or if a more in-depth inspection is required to ensure continued safe

operation of the tank(s). The final inspection report(s) detail the continued suitability or the requirement of any remedial work.

End of design life is identified within the EMS, with PB stating that it is their policy to replace each tank at the end of its design life. In exceptional circumstances, tanks may be operated beyond their design life but only following an extension of life inspection and assessment with written confirmation by a competent person. The document titled 'Bulk chemical Storage Vessels Details' provides information on each tanks location, description including tanks contents, volume, manufacturer, date of fabrication, design life, replacement date, last inspection (annual) and inspection due date (annual).

Considerations for both primary and secondary containment have been identified within the EMS. The section provides an over-arching management of bulk storage of chemicals with reference to more in-depth procedures held in different sections such as the PPM and AMS.

Management of IBC's was discussed on site, IBC's are unloaded on a sealed drainage area and stored on pallet bunds. The empty or 'nominally empty' IBC's are stored outside, on an impermeable concrete pad serviced by a an ACO drain. This was seen on the site inspection, with all empty IBC's stored correctly.

Maintenance inspections and procedures

Maintenance requirements for thermoplastic bulk chemical storage vessels are identified in 'PB Gelatins – maintenance procedure, document number MMI 020'. Tank integrity management has been based on HSE guidance note PM86 which provides advice to users on this topic. Considerations have also been made to HWSA 1974 and the 1998 PUWER.

Within this document tank design specification requirements are stated, such as the relevant standard for tank designs – BS EN 12573, BS EN ISO 17786, BS EN 13575 or BS EN 13341. With additional statements identifying that other requirements such as the compatibility of tank material with contents, working temperature, anticipated loading and environmental factors such as wind and snow loading need to be considered.

Operation maintenance is identified as a requirement, with suitable maintenance and periodic examination. The procedure details the requirement for weekly visual external checks of all thermoplastic tanks, their secondary containment and associated ancillary equipment in line with work instructions WMI031 and WMI032. Identifying if there is any leakage, deterioration of primary and secondary containment and ensure ancillary equipment is functioning as expected.

Examples of completed weekly check sheets were provided by PBG. PBG were also asked to provide evidence that the weekly check sheets are reviewed and any items requiring maintenance are appropriately actioned. Evidence of follow up reactive maintenance conducted in response to findings during a weekly check. This was evidenced with PBG showing their maintenance tracker, showing work orders for various maintenance tasks, including, a faulty pipe that was identified on tank BC04 – weekly bund inspection 2023-5-27.

Annual external inspections are stated to take place on all thermoplastic bulk storage tanks, conducted by a competent person, who will determine if the vessel continues to be fit for purpose and decide if further examination (internal) is required. The annual inspection is stated to take in to account the recommendations of HSE guidance note PM86, conducted in dry weather to aid with leak detection. A sample of reports were provided by PBG for the annual inspection conducted in August 2022, the 2023 annual inspections were conducted the week prior to NRW's visit and PBG were awaiting the reports.

One point considered during discussion of the external report, was the inability of the engineer to conduct a

full inspection of the primary tank. Due to the design of the primary tank and accompanying collar bund, access and visual inspection of the primary vessel is not possible. NRW enquired how the risk of not having the primary tank fully inspected was controlled. PBG explained that historically their collar bunds were much larger and incorporated a 'manway' hatch to allow access into the bund void between primary and secondary containment. However, they made the decision not to incorporate this on replacement tanks. Their argument was that additional penetrations in the secondary containment provided more points of weakness and therefore a greater risk of secondary containment failure. Currently most of the vessels are now limited to two 'penetrations within the secondary containment, one for outlet delivery pipework (to operations) and one 'bund check' valve, to check for any liquid within the bund annulus. As the secondary containment is subject to a comprehensive external check, they are confident that in the unlikely event the primary vessel should fail, the secondary containment would contain the spill. If the secondary containment were to also fail, all tanks are serviced with tertiary containment, in the form of drainage channels on an impermeable surface that drains to the effluent treatment plant. As such, given the layers of protection in place, NRW accepts PBG's current inspection regime and agrees that the current layers of protection provided should adequately mitigate against pollution escaping to the environment in the event of a containment failure.

Tank BC02 containing 'Truefloc' was the only tank seen during the site inspection that had a potential weakness in the tertiary containment. The one side of the tank, that has an outlet pipe is serviced by an ACO drain, however the concrete pad in front of the tank does not. There is small square drain in the centre of the pad which should capture and drain small leaks to the ETP, however, if a larger leak / spill were to occur from the pump or tank, it would likely escape to the unmade ground surrounding the vessel. PBG may want to consider reviewing this and assess if the risk is adequately controlled.

PBG stated that should any contents of the primary vessel be detected within the bund, indicating that the primary tank has suffered a failure or has begun to leak, the tank would be taken out of service and replaced with a new tank. Given the cost of having a faulty tank inspected and repaired, the higher probability of further issues occurring with a repaired tank, and the necessity to increase frequency of inspections, PBG believe the safer and more cost-effective option is to replace the vessel and bund.

Ancillary equipment is captured within the maintenance and checking and tracked within the SAP system. All sensors / probes are subject to annual calibrations, evidence was seen on site with paper calibration records held in a folder, the records are also backed up electronically. Pumps are inspected as part of the weekly checking regime, and undergo an annual check, but this is primarily resistance testing. Pumps are unable to be situated with the bund due to the collar bund design. All pumps are situated within 'Chemi-guard' cases (also subject to the weekly inspections), the cases provide some protection and are capable of capturing small leaks. However, larger leaks would escape to the surroundings which would then be captured by the tertiary containment. Piping is double skinned to provide additional protection and along with flanges and fixings, are subject to the weekly inspection.

Control of deliveries

PB provided detail on how deliveries are controlled. A check sheet was provided which is completed during a chemical delivery to one of the bulk storage vessels. The check ensures that the correct media is being delivered to the correct storage vessel, the capacity within the vessel can adequately accommodate the delivery quantity, driver awareness of alarms and safety shower, checks to ensure bund drain valves are locked off, check that the inlet delivery valve is locked off post-delivery and a check to ensure there are no signs of leakage. PBG were asked if the delivery is supervised by an operator, they were unsure if the operator

would remain present for the entirety of the delivery but would be present to do the initial checks. It was advised that PB ensure the operator is present for at least the beginning of the offloading, to ensure no immediate issues arise, and at the end to ensure all pipework disconnected, locked off and no leakage before the delivery tanker departs. This may also aid in preventing a delivery tanker from leaving whilst still connected to the delivery point. If a delivery tanker were to 'drive off' whilst still connected, the vessels are top fill, and are filled via pipework within the Chemi-guard system. As such, although damage would be caused and there would be potential for some loss of inventory, it would be unlikely to cause catastrophic damage to the primary and secondary vessels, and instead damage would primarily be caused to the ancillary equipment and pipework.

To mitigate against over filling of the vessels, high level sensors and alarms are fitted to each vessel, these are linked to a 'slam shut' valve, which will prevent further liquid entering the tank. Further mitigation of an overfill incident is provided by 'overflow pipes which drain directly to the effluent drainage system. Each delivery point is clearly labelled, to further ensure correct inventory is delivered to the correct tank. PBG were asked if the high-level alarms are subject to any checking of their functionality, PBG do not currently test if the high-level alarms are functioning but have agreed to put a procedure in place to conduct monthly checks on alarm functionality.

PBG identified that their current document and procedure storing could be improved. PBG had difficulty finding some of the information and documents requested, such as their training matrix / training records and 'chemical management plan', with the later forming part of the operating techniques listed in table 1.2 of their environmental permit. The root cause of the effluent incident in 2022 was found to be PBG not conducting certain operation / maintenance tasks as these had not been incorporated into subsequent updated versions of their EMS. As PBG could not produce a copy of the 'chemical management plan' and this forms part of the permit, it could be seen as a non-compliance. However, during the audit it was apparent that PBG were conducting the procedures specified within this document or had equivalent measures in place – such as the chemical delivery procedures, which were evidenced with copies of the 'delivery check sheet', calibration of various sensors and the inspection schedule for the storage vessels, and it was evident these procedures had been incorporated into their current maintenance and management systems. As such no non-compliance will be issued on this occasion.

However, the following action will be issued:

Action 1 – PB Gelatins 15/09/2023: PBG to ensure any gaps between the operating procedures listed within the permit and PBG's current operating procedures are identified and where gaps or inconsistencies are found, they are incorporated into PBG's current operating techniques and management system. If PBG identify any procedures that have been updated or replaced with new procedures, they should ensure the new procedures provide equivalent or improved environmental protection to those stated within the original documentation. Any changed procedures should be sent to NRW for assessment and formal acceptance. **Due 31/01/2024**

Evidence was seen during the audit of staff being appropriately trained to conduct the containment inspections. With one member of staff having received formal certificated training and another receiving in-house training on PBG procedures. PBG discussed tracking training and instigating re-fresher training on containment where this may be beneficial. PBG also stated that further staff would be identified to undergo training, to improve overall resilience in this area. Although staff had been trained and some evidence was provided, PBG should ensure a robust system is in place to track training requirements, this should extend to all aspects of site management that may require training. As such the following action will be issued.

Action 2 – PB Gelatins 15/09/2023: PBG to ensure a training matrix is in place – by either locating the existing training matrix or developing a new one to allow tracking and identification of training requirements. **Due 31/01/2024.**

Accident management plan.

Two of the received documents detail PB's AMS. An excel sheet titled 'EMS 06 – Accident Management Plan'. This document lists general hazards, such as fugitive emissions to surface water, sewer, releases of odours, flooding, fire, pests etc. This document then references further documents such as the emergency preparedness and response plan. One document referenced in EMS 06 was the 'Chemical Management Plan', as discussed above, PB should ensure that documentation and procedures referenced within their EMS reflect the most up to date procedures.

The second document received was the emergency preparedness and response plan (EMPR). The EMPR details several emergency situations and how PB would manage these situations. In terms of containment, there are two sections that would broadly cover a loss of containment from one of the chemical storage vessels. These are, Chemical storage – this section only details what preventative measures are in place and does not identify any procedure to follow in the event of a loss of containment. A second section titled 'serious spillage' provides details on the actions to be taken in such an event. There is a note in this section stating that spillages should not be allowed to enter surface water drainage, however there is no information stating how this would be achieved. However, PBG stated that all on-site drainage is linked to the ETP and no surface-water drains remain on site. The EMPR is further supported by maps of the chemical storage locations and drainage.

The EPRP states that an annual site emergency drill is conducted along with a bi-annual fire alarm drill, however during discussions on site it was revealed the only drill is conducted is an annual fire drill. PBG should ensure that the EMS truly reflects on-site procedures and operations. During discussions PBG stated that South Wales Fire and Rescue Service (SWFRS) had been contacted in the past to conduct an emergency scenario drill on site, such as a chemical spill response. However, the exercise was not conducted. PBG plan to re-kindle this project, rehearsing an emergency response in conjunction with the FRS would provide a good opportunity to identify any areas of improvement with PBGs EPRP. Please keep NRW updated with progress on this.

The EPRP also states that staff should be suitably trained in their duties with regards to on site emergency response, this training should also be captured within the 'training matrix'.

PBG may want to consider incorporating a procedure for notifying any neighbouring business should an emergency have a potential impact beyond the site boundary. It may also be useful to include contact details for any contracting company that may be called upon to provide clean-up assistance which could aid in mitigating environmental impact.

During the site inspection it was noted that the storage vessels BC01, BC11 and B12, situated at the A18 facility were all serviced by collar bunds extending to the 'overflow' pipework. This provides additional protection against a potential jetting failure, whereby such a failure could pose a risk to the public, given the proximity of the tanks to the site boundary / public footpath. Additionally, all flanges in this area were covered by flange guards, which would prevent jetting if a flange were to fail.

Conclusion

There were no issues identified during the site walk over and physical tank and bund inspections. All the vessels / bunds seen appeared to be in good condition, with no apparent issues. A formal inspection by a third-party had been conducted the week before NRW's visit, PBG were still awaiting the reports, however, no immediate issues were flagged by the engineer during the two day visit.

Overall, the containment appears well managed on site, there are some gaps / inconsistencies within the EMS, as discussed above, that need to be addressed. Some improvements were identified, such as incorporating tertiary containment and 'high level' alarm checks within the weekly checking schedule which should further support the current management of containment, these have been listed as actions below, please provide NRW with conformation that these have been completed.

Action 3 – PB Gelatins 15/09/2023: PBG to provide NRW with conformation when the high-level alarm - sensor checks are put in place.

Action 4 – PB Gelatins 15/09/2023: PBG to ensure the tertiary containment is captured within their PPM and inspection schedule. Provide NRW with conformation once this has been completed.

End.

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

If your assessment result in Section 1 is suspended, what does this mean?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry compliance criteria (used in section 1 and 2):

1. Management

- IR1A – General management
- IR1B – Finance (only applicable to Landfill)
- IR1C – Energy efficiency
- IR1D - Efficient use of raw materials
- IR1E - Avoidance, recovery and disposal of wastes produced by the activities
- IR1F - Multiple operator installations

2. Operations

- IR2A – Permitted activities
- IR2B – The site
- IR2C – Operating techniques
- IR2D – Technical requirements
- IR2E – Improvement programme
- IR2F – Pre-operational conditions
- IR2G – Landfill engineering (only applicable to Landfill)
- IR2H – Waste acceptance (only applicable to Landfill)
- IR2I – Leachate levels (only applicable to Landfill)
- IR2J – Closure and aftercare (only applicable to Landfill)
- IR2K – Landfill gas management (only applicable to Landfill)

3. Emission and Monitoring

- IR3A – Emissions to water, air or land
- IR3B – Emissions of substances not controlled by emission limits
- IR3C – Odour
- IR3D – Noise and vibration
- IR3E – Monitoring
- IR3F – Pests
- IR3G – Air quality management plans
- IR3H – Monitoring for the purposes of the Industrial Emissions Directive (this heading includes Large Combustion Plants)
- IR3I – Fire

4. Information

- IR4A – Records
- IR4B – Reporting
- IR4C – Notification

Enforcement response

Any non-compliance with a permit condition is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or

suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within twenty working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 to 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.