APP/EPR/FP3435LA

Appeal by Thames Water Utilities Limited

Environmental Permitting (England and Wales) Regulations 2016

Maple Lodge Sludge Treatment Centre, Maple Cross, Rickmansworth, WD3 9SQ

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|  | Thames Water Utilities Limited: Statement of Case11 December 2024 |  |

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# Introduction

1. This is Thames Water Utilities Limited’s (“TWUL”) statement of case in respect of its appeal against specific permit conditions following variation EPR/FP3453LA (“the Permit”) for Maple Lodge Sludge Treatment Centre (“Maple Lodge STC”) pursuant to Regulation 31 of the Environmental Permitting (England and Wales) Regulations 2016 (“EPR 2016”).
2. Since the filing of the notice of appeal, TWUL has refined its position on the appeal. This appeal is now made in respect of the following permit conditions:
3. IC12
4. IC13
5. IC14
6. IC15
7. Attached to this statement of case is a paginated bundle marked TW1. References in square brackets are references to page numbers in the form of [TW1/tab no/page no].
8. The key issue for the Planning Inspector to determine is the impact of the lack of available funding for IED improvements at Maple Lodge STC on the permitting process and the extent to which it is unreasonable for the Environment Agency (“EA”) to have singularly failed to take that into account in determining the relevant deadlines for compliance with ICs 12, 13, 14 and 15.
9. TWUL have made it explicitly clear to the EA throughout the permitting process that there was no funding for IED improvements at the Maple Lodge STC until AMP8 (AMP8 being the period 2025 – 2030). The EA has refused to take this fact into account, notwithstanding that infrastructure improvements will cost millions of pounds and that a failure to meet the deadlines imposed by the EA for those improvements will result in criminal liability. However, funding is the critical factor that will determine when improvement conditions can be complied with. At the point at which the EA determined that it was going to issue improvement conditions that require significant upgrades to existing infrastructure on site, it was incumbent on the EA to take account of how any improvements were to be paid for.
10. The case is also concerned with the practicalities of the mandated infrastructure improvements, the deadlines for which have been set by the EA without any apparent assessment of what might be reasonably practicable within the relevant timeframe.

# IC12

1. The Permit reads:

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| **Improvement conditions for secondary containment design** |
| IC12 | The operator shall submit a written ‘secondary containment implementation plan’ and shall obtain the Environment Agency’s written approval to it. The plan shall contain the finalised designs and an implementation schedule for the identified secondary containment systems proposed in the document ‘J840 – STC IED Containment Maple Lodge STC – Containment Options Report, Dated October 2023. The finalised design(s) and specifications shall be produced by appropriate competent individuals (qualified civil or structural engineer), in accordance with the risk assessment methodology detailed within CIRIA C736 (2014) guidance. The plan shall include but not be limited to the following components:* An updated BAT assessment with specific regard to BAT 19 of the Waste Treatment BREF.
* An assessment of the suitability for providing containment when subjected to the dynamic and static loads caused by catastrophic tank failure.
* Finalised designs and specifications of the proposed secondary containment proposal completed by appropriate competent individuals.
* A program of works with timescales for the commissioning of the secondary containment systems to comply with CIRIA C736 (2014) guidance, or equivalent.
* An updated site and infrastructure plan.
* A preventative maintenance and inspection regime.

The plan shall be implemented in accordance with the Environment Agency’s prior written approval. | Within 6 months of permit issue or such other date as agreed in writing with the Environment AgencyImplementation of all required and approved containment improvements must be completed by 31/03/2025 |

## Deadlines for IC12

1. IC12 currently sets a deadline of 6 months from the date of permit issue for submission of a written ‘secondary containment implementation plan’. That deadline expired on 25 September 2024.
2. IC12 also requires implementation of all required and approved containment improvements by 31 March 2025.
3. Both deadlines of 25 September 2024 and 31 March 2025 are unreasonable.

## The secondary containment implementation plan

1. Containment solutions need to be assessed by the EA and TWUL must undertake detailed design work to be submitted to the EA. Agreement on the appropriate risk assessment approach for secondary containment will determine the containment requirement. A detailed design for secondary containment is required to be approved by the EA before implementation can be commenced.
2. The permit decision document identifies at page 9 that the approach that has been taken to the interpretation of CIRIA C736 and consequently the assessment of the appropriate level of secondary containment is flawed[[1]](#footnote-1):

*“The spill model is based upon the failure of a primary digester, the largest process vessel by capacity. The proposed solution met the requirements of section 4.2.1 of CIRIA 736 that requires “Where two or more tanks are installed within the same bund, the recommended capacity of the bund is the greater of:*

1. *110% of the capacity of the largest tank within the bund.*
2. *25% of the total capacity of all the tanks within the bund, except where tanks are hydraulically linked in which case they should be treated as if they were a single tank.*

*The final containment volume provides 25% of the total capacity of all the tanks within the bunds identified.”*

1. A revised containment assessment report will be required for Maple Lodge, based on credible scenarios. This inevitably impacts upon the reasonable date for the provision of a secondary containment implementation plan.

## 31 March 2025

1. The EA’s permit decision document, provided on 25 March 2024[[2]](#footnote-2) at pages 13 and 14 sets out the EA’s position on the deadline of 31 March 2025:

*“We do not accept that deadlines for BAT compliance, required as a result of the already materially overdue national implementation of the IED, should be based on Water Company price review periods rather than a pragmatic, proportionate and reasonable timescale for completing an improvement condition taking into account the ongoing risks to the environment and human health. These are not new or innovative proposals or techniques. In this context, ‘Best Available Techniques’ means the economically and technically viable available techniques which are the best for preventing or minimising emissions and impacts on the environment as a whole. Availability is assessed on a sectoral basis, not on the claims of one WaSC. The fact that the rest of the WaSCs will implement these techniques, coupled with their specific inclusion in the BAT Conclusions documents, strongly indicates that they are indeed ‘available’. In the absence of approved alternatives, they are a requirement of Article 11 IED which we must ensure compliance with under paragraph 5 of schedule 7 EPR. We do not consider reference to PR24 or subsequent price review discussions to be appropriate or relevant to this determination.*

*We have therefore set a deadline of 31 March 2025 for these ICs. It should be noted that the implementation date for operators to be compliant with the Waste Treatment BAT conclusions was 17 August 2022. We believe that the deadline specified in the improvement condition provides a sufficient timeframe in which the operator can produce and implement detailed plans to meet BAT. Where operators do not satisfy the requirements of the improvement condition by 31 March 2025, the Environment Agency may commence enforcement action for that failure the WaSC [sic]. Failure of the operator to achieve BAT or failure to take steps to implement BAT by the backstop will be at the operator’s risk.*

*We consider the adoption of this more flexible approach to be pragmatic and proportionate, securing adequate progress towards, and delivery of, BAT within a reasonable timescale. Allowing a longer timescale would not, in our view, be acceptable because of the ongoing risks to the environment and human health. A stricter approach would most likely have meant that we would refuse the application.”*

1. The EA’s stated position fails properly to reflect the fact that there is no funding available.

## The lack of available funding

1. Throughout the permitting process, TWUL has consistently identified to the Environment Agency practical difficulties in being able to fulfil any requirement to complete secondary containment. Funding for IED improvements at Maple Lodge does not exist.
2. On 24 October 2023, TWUL stated to the Environment Agency[[3]](#footnote-3):

*“In addition, to our responses to your specific queries raised Thames Water would like to highlight that it is committed to meeting the requirements of BAT. A full BAT risk assessment is required to determine the detailed design for Maple Lodge secondary containment. The ‘containment options report’ dated October 2023 (with updated Process Flow Diagram – attached) is an outline solution that is subject to change. Thames is not able to commit to secondary containment requirements by the stated deadline of December 2024, delivery timescales will be subject to the outcome of PR24 and subsequent price review discussions.”*

1. On 13 March 2024, TWUL stated to the Environment Agency[[4]](#footnote-4) in its response to the draft permit:

*“We would like to reiterate that Thames Water is committed to meeting the requirements of BAT/BREF. However, Thames Water is not able to commit to meeting all IED Permit requirements by the stated deadline of 31st March 2025. Delivery timescales will be subject to the outcome of PR24 and subsequent price review discussions.”*

1. On 29 June 2023, TWUL wrote to the Environment Agency in the following terms[[5]](#footnote-5):

*“I can confirm that Thames Water supports the objectives of the IED in delivering environmental protection, but we cannot commit to meeting all the requirements set out in the ‘Appropriate Measures’ guidance (issued September 2022), by December 2024. In addition, we have concerns regarding the overall value for money for customers of this work, in the context of other planned environmental improvements. I would also note that, given the constraints we face in terms of what we are able to deliver, we will inevitably need to focus the capacity we have on those things that matter most for our customers and the environment. The resource that would be required to undertake the full scale of the work envisaged by an extensive interpretation of the IED would mean displacing work to be undertaken on other priority areas.”*

1. This same letter identified:
2. The need to obtain environmental permits for sludge treatment was not confirmed until after the PR19 price review process and was therefore not a directly funded activity within the AMP7 process;
3. The current estimate was that the cost of implementing IED aligned with the ‘Appropriate Measures’ guidance would be in the region of £480m Capex and a £40m increase in Opex per annum;
4. That a programme of that size would need to be delivered over more than one AMP, especially when considering the requirement to maintain overall treatment capacity during construction activity and the wide range of other infrastructure improvements that will be required in AMP8;
5. Constraints exist in the form of the availability of skilled resources and additional capability to manage such a large investment programme, as well as the ability of the supply chain to ramp up to the rates required;
6. There were concerns over the cost benefit and delivering value for money.
7. On 1 March 2024, TWUL wrote again to the EA[[6]](#footnote-6):

*“We now find ourselves in a position where permits are being issued requiring full compliance by March 2025 – irrespective of the scale of investment required. For Thames Water the overall programme is estimated between £500 million - £600 million and we believe will take between 5 and 10 years to fully implement. In the meantime, we await Ofwat’s decision on funding as part of PR24 (with final determinations expected in December 2024). Furthermore, the EA has started inspections against the new standards issuing non-conformances and requesting compliance by 2025, reserving the right to take enforcement action. Given we have not yet secured the funding, and practically it will take years to deliver all the investment, we currently have no option but to appeal all permits and potentially consider legal challenges.”*

1. On 24 April 2024, TWUL wrote again to the EA[[7]](#footnote-7):

*“We are now in a position where permits are being issued requiring full compliance by March 2025 – irrespective of the scale of investment required and our ability to deliver that investment within the next 12 months. The EA has now started inspections against the new standards, issuing non-conformances and requesting compliance by 31 March 2025, reserving the right to take enforcement action.*

*Noting the seriousness with which we take our environmental obligations, we have begun work on a detailed delivery plan to achieve compliance. The plan sees us work through some of the very practical challenges we see in achieving compliance with the EA’s requirements at some of our STCs. The timescales in our plan are also partly dependent on the permit conditions that are imposed as we progress each permit application, and they may be affected by the expectations set out and the funding allowed as a result of Ofwat’s PR24 process (with final determinations expected in December 2024).”*

1. Funding for all IED improvement conditions across all 25 STCs has been sought within the AMP 8 business plan proposals submitted to Ofwat (£529.5m of which £492.7m of Capex investment). This funding, if approved, will not be available until, at least, April 2025. Award of construction contracts will not be possible prior to this date.
2. No funding is available at present or at the time of the permit application for IED improvements at Maple Lodge.

## The wider industry position

1. It is not accurate for the EA to suggest, as appears to be the case at page 14 of the Permit decision document, that the funding situation faced by TWUL is unique to TWUL. Funding requirements have consistently been identified by those representing the industry.
2. On 14 September 2022, Water UK wrote to the EA in the following terms[[8]](#footnote-8):

*“Funding*

*We note your position with regards to funding, namely, that this is a matter for the industry to discuss with Ofwat. Ofwat have maintained that they are unable to fund activity that does not have a regulatory driver in AMP8, and this continues to be incompatible with the Environment Agency’s position that IED must be delivered in AMP7. As an industry we request the EA to consider a staged approach to implementation with the investment associated with secondary containment and covering of tanks, moved to circa 2027.*

*PR19 plans were submitted to Ofwat in September 2018, and at that time no formal communication of the introduction of IED for the biological treatment of sludge had been received and there was no inclusion or mention of possible IED requirements in the PR19 WINEP programme. The first direct communication to the water industry was the paper presented at Steering Strategic Group in April 2019, two months after Ofwat’s initial assessment of business plans in February 2019. It should be noted that there is no mechanism to add additional requirements into business plans after submission, in this case in September 2018. Companies received formal notice on 18th July 2019, informing them that they would need to submit IED permit applications, some five months after Ofwat’s initial assessment of business plans.*

*The industry and Environment Agency have experienced a steep learning curve in the process of implementing the IED on sludge treatment assets. Our collective understanding of what would be required for IED compliance has grown significantly since the need was first confirmed, and the initial expectation that a risk assessment-based approach would suffice in the majority of cases has proven not to be the case. The industry wants to successfully deliver IED compliance as quickly as possible, but the lack of engagement from the national Environment Agency team on key issues affecting all WaSCs is frustrating the process. After much collective effort we are still yet to see any IED permits successfully issued, so we request an urgent meeting with the Environment Agency to review the key blockers to progress and agree a joint way forward.”*

## The IED timeline

1. The precise application of IED requirements has been the subject of significant uncertainty, with relevant regulatory guidance only published in September 2022.
2. Following a review of the Integrated Pollution Prevention and Control (“IPPC”) Directive by the European Commission, a suite of Directives were combined under the umbrella of a new Directive on Industrial Emissions (“IED”), Directive 2010/75/EU, which came into force on 6 January 2011.
3. The requirements of the IED were transposed into domestic legislation by way of amendments to the Environmental Permitting (England and Wales) Regulations 2010 (“EPR 2010”), coming into force on 27 February 2013.
4. Prior to this point, sewage treatment sites operated by sewerage undertakers treating indigenous sewage sludges separated from the main urban wastewater treatment stream at the site along with the importation of similar wastes were regulated under the Urban Waste Water Treatment Directive (“UWWTD”) and EPR 2010/2016 as exempt waste management activities, although some works (for example biogas utilisation) were covered by the Environmental Permitting regime.
5. Initially, the Regulator took the view that anaerobic digestion plants conducted at sewage treatment works would be excluded from the requirements of the IED. In March 2012, Defra published a ‘Consultation on the transposition of the IED in England and Wales’. Section A6 read[[9]](#footnote-9):

***“A6. Disposal or recovery of non-hazardous waste – exclusion of activities covered by the urban waste water treatment Directive***

*A6.1 Point 5.3(a) and (b) of Annex I of the industrial emissions Directive each exclude activities covered by the urban waste water treatment Directive. Our view is that this excludes all activities conducted at sewage works for the treatment of ‘domestic waste water or the mixture of domestic waste water with industrial waste water and/or run-off rain water’ and ‘residual sludge, whether treated or untreated, from urban waste water treatment plants’ so long as they are dedicated to that treatment. Anaerobic digestion plants used for sludge treatment will therefore be covered by the exclusion, unless those plants also treat other waste material not derived from the sewage treatment process. However, the European Commission may express a view on this issue.”*

1. A review by the Environment Agency was subsequently undertaken to determine the applicability of the IED to sewage treatment works undertaking the biological treatment of sewage sludge. The Environment Agency set out an interim position that deferred the need for water companies to apply for permits.
2. On 2 April 2019, the Environment Agency informed a Strategic Steering Group meeting[[10]](#footnote-10) that it had determined that the IED applied to the biological treatment of sewage sludge and that it would be discussing the timetable and process for permit applications through the Water UK waste and recycling network. A sludge strategy was to be finalised by the end of 2019.
3. In July 2019 the Environment Agency wrote to water companies to confirm that the Environment Agency had decided to implement IED for biological treatments of sewage sludge. In order to agree the timetable implementation and to initiate the permitting process, the details of sites carrying out biological treatment of sludge was requested from TWUL. This letter did not purport to provide any form of guidance on the permitting process[[11]](#footnote-11).
4. Between 10 July 2020 and 21 August 2020, the Environment Agency consulted on draft technical guidance on ‘Appropriate measures for biowaste treatment’. The Environment Agency’s response to the consultation was published on 27 July 2021.
5. On 21 September 2022, the Environment Agency published ‘Appropriate Measures for the Biological Treatment of Waste’[[12]](#footnote-12). This is the first publication relevant to BAT published after the date that the Environment Agency concluded that the IED applied to anaerobic waste plants. There are several aspects of the ‘Appropriate Measures’ guidance that are both more cautious and more prescriptive than before, with tighter or more specific controls.
6. It is self-evident that the Environment Agency was still in the process of evaluating and determining what steps should be taken by operators as late as 2022. It is unrealistic to suggest that the regulatory position was settled when the principal relevant guidance was subject to consultation and finalisation over a two-year period.
7. On 29 June 2023, TWUL wrote to Georgina Collins, Director of Regulated Industry at the Environment Agency[[13]](#footnote-13), in the following terms:

*“We accept that the Environment Agency confirmed the need to obtain environmental permits for sludge treatment in July 2019. However, this was confirmed after the industry PR19 price review process and was therefore, not a directly funded activity within the AMP7 period (2020-2025).*

*…*

*In terms of what we need to deliver, and by when, it is already clear to us that we will not be able to comply fully with the ‘Appropriate Measures’ guidance issued in September 2022. The highly prescriptive approach set out in the measures goes far beyond the original BAT requirements to achieve compliance.*

*Our current estimate is that the cost of implementing IED aligned with the ‘Appropriate Measures’ guidance will be in the region of £480m Capex and a £40m increase in Opex per annum. This is a significant change to the assumptions made back in 2019. We need to do further work to scope out the detail of what is required, but a programme of that size will need to be delivered over more than one AMP, especially when considering the requirement to maintain overall treatment capacity during construction activity and the wide range of other infrastructure improvements that will be required in AMP8.*

*…*

*An additional important aspect that is causing us concern is the cost benefit of the requirements now being specified. As we mentioned in our letter to David Dangerfield of 15th May, we are concerned that we are collectively at risk of delivering poor value for our customers’ money, at a time when their ability to pay is stretched and when there are many other environmental improvements that will require to be funded in AMP 8.”*

## The 2019 Price Review (“PR19”)

1. Infrastructure improvements in order to achieve BAT compliance will carry with them significant financial outlay on the part of all water companies. The scope of this financial commitment has only become clearer since the publication by the Environment Agency of its guidance in September 2022 on ‘Appropriate Measures’ and as applications for environmental permits have been designed and submitted. As set out above, it was estimated in June 2023 that the cost of implementing IED aligned with the ‘Appropriate Measures’ guidance will be in the region of £480 million for TWUL alone. This figure has now been revised to £492.7 million.
2. PR19 set the funding for the 5-year asset management plan period of 2020/21 to 2024/25. This is known an AMP7. The Environment Agency’s position is that IED must be delivered in AMP7 (2020-2025).
3. PR19 plans were submitted to Ofwat in September 2018. At this point in time no formal communication of the introduction of IED for the biological treatment of sludge had been received and there was no inclusion or mention of possible IED requirements in the PR19 WINEP programme. The first direct communication to the water industry was the paper presented at Strategic Steering Group in April 2019, two months after Ofwat’s initial assessment of business plans in February 2019.
4. Companies received formal notice on 18 July 2019, informing them that they would need to submit IED permit applications, some five months after Ofwat’s initial assessment of business plans. TWUL were therefore unable to properly scope and apply for funding to Ofwat to meet the total cost of IED requirements in the PR19 Price Review.
5. Funding for IED improvements at Maple Lodge STC has not been allocated in the PR19 Business Plan. An enhancement cost claim by TWUL was rejected by Ofwat.

## The risk of enforcement action

1. Contravening a condition of an environmental permit is a strict liability criminal offence, pursuant to Regulation 38(2) EPR 2016. There is no maximum limit to a financial penalty imposed on a company for such a breach. Where an offence is found to have been committed by an individual, the maximum penalty is five years imprisonment.
2. The EA has not been shy in making it clear to TWUL that it has enforcement action in mind. The EA’s permit decision document at pages 5 and 6 reads[[14]](#footnote-14):

*“Where operators do not satisfy the requirements of the improvement condition by 31 March 2025, the Environment Agency may commence enforcement action against the WaSC. Failure of the WaSCs to achieve BAT or failure to take steps to implement BAT by the backstop will be at the operator’s risk.”*

1. The same document repeats at page 14[[15]](#footnote-15):

*“Where operators do not satisfy the requirements of the improvement condition by 31 March 2025, the Environment Agency may commence enforcement action for that failure [of] the WaSC. Failure of the operator to achieve BAT or failure to take steps to implement BAT by the backstop will be at the operator’s risk.”*

1. And on page 17[[16]](#footnote-16):

*“Where operators do not satisfy the requirements of the improvement condition by 31 March 2025, the Environment Agency may commence enforcement action for that failure [of] the WaSC. Failure of the operator to achieve BAT or failure to take steps to implement BAT by the backstop will be at the operator’s risk.*

*…*

*The permit also includes bespoke permit conditions alongside the ICs. These bespoke permit condition requires the operator to have the appropriate infrastructure installed on the site by 31 March 2025 Should the operator fail to implement the changes required by that deadline, the Environment Agency may undertake enforcement proceedings against the operator.”*

## The failures of the EA

1. It is consequently unreasonable for the EA to impose a deadline in an improvement condition that does not properly take the lack of funding into account. As repeatedly identified by the EA themselves, the very fact of the deadline brings with it the risk of criminal enforcement should the deadline not be complied with. It is not reasonable to impose a condition that the operator has clearly stated that it cannot comply with. To do so is to set TWUL up to fail, with the explicit threat of criminal liability.
2. Maple Lodge is an existing facility, not a new application. The EA has issued improvement conditions to require the implementation of upgrades to existing site infrastructure. In those circumstances, cost constraints on those proposed improvements cannot properly be ignored.
3. The fact that the EA have identified that the IED improvement programme is already overdue does not alter the fact that no funding is available.
4. The EA have suggested that their approach is both “pragmatic” and “proportionate”[[17]](#footnote-17). No attempt is made by the EA to define what they have meant by the term “pragmatic”. The EA’s approach does not take account of the significant practical obstacle facing TWUL, namely the lack of funding. Furthermore, no attempt to made by the EA to identify what its approach is “proportionate” to. It cannot be considered proportionate to impose on an operator millions of pounds of costs without reference to whether those costs are affordable by the operator in question.
5. What is set out above does not require the Planning Inspector to form any view on the content of any discussions between TWUL and Ofwat. Funding is and remains unavailable for IED improvements until AMP8.

# ICs 13, 14 and 15a, b and c

1. The Permit reads:

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| **Improvement conditions for enclosure of tanks storing (or treating) sewage sludge (pre-AD)** |
| IC13 | The operator shall submit a written ‘enclosure and abatement plan’ and obtain the Environment Agency’s written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of enclosures/covers and associated emission abatement systems in line with BAT 14 and BAT 53 for storage and treatment tanks pre-anaerobic digestion identified as the 4 picket fence thickeners, the surplus activated sludge tanks, the reception tank, and the sludge blending tank.The report shall include evidence that the tank enclosures/covers will be designed and installed in accordance with guidance, *Biological waste treatment: appropriate measures for permitted facilities*, and include the national grid reference for the abatement technique to be implemented in line with BAT 53.The plan shall be implemented in accordance with the Environment Agency’s prior written approval. | Within 6 months of permit issue or such other date as agreed in writing with the Environment AgencyImplementation of all required vessel cover improvements must be completed by 31/03/2025 |
| **Improvement conditions for enclosure of tanks undertaking AD** |
| IC14 | The operator shall submit a written ‘Primary anaerobic digestion vessel cover’ plan and obtain the Environment Agency’s written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of covers for vessels undertaking anaerobic digestion in the eight primary digester tanks. The plan shall also contain a detailed description of the proposed gas utilisation plant, gas storage infrastructure for the biogas produced during anaerobic digestion, pressure relief valves and gas pipe-work. The plan shall include but not be limited to the following components:* Evidence that the vessel covers, gas utilisation plant and ancillary equipment have been designed by appropriately qualified engineers.
* Evidence that the vessel covers, and gas utilisation plant will be designed and installed in accordance with guidance: *Biological waste treatment: appropriate measures for permitted facilities*.
* An updated Hazard and Operability Study (HAZOP) and DSEAR risk assessment.
* An assessment of gas storage capacity and gas utilisation capacity including proposals for additional gas utilisation plant.
* A program of works with timescales for the commissioning of the vessel covers, gas utilisation infrastructure and ancillary equipment.

The plan shall be implemented in accordance with the Environment Agency’s prior written approval. | Within 6 months of permit issue or such other date as agreed in writing with the Environment AgencyImplementation of all required vessel cover improvements must be completed by 31/03/2025 |
| **Improvement conditions for enclosure of tanks storing (or treating) stable and unstable digestate** |
| IC15a | The operator shall submit a written report, with supporting evidence, on the stability of digestate stored within the storage tanks, including the ‘Secondary Digesters’, and obtain the Environment Agency’s written approval to it. The report shall assess whether an effective digestion process has taken place within the anaerobic digestion tanks and whether biogas emissions from post digestion storage or treatment are minimised. The report shall assess digester stability and the potential for biogas production. The report shall include but not be limited to:* An assessment of residual biogas potential in accordance with the OFW004-005 [N6] methodology specified by *BSI PAS 110: Producing Quality Anaerobic Digestate* or an equivalent methodology for assessing residual biogas potential.
* An assessment of the stability of the digestion process in the anaerobic digesters to be undertaken in accordance with BAT 38 of the Waste Treatment BREF. The assessment shall be supported by process monitoring data recorded using an automatic and/or manual monitoring system (and sampling of the digester feed) for the following parameters over a period of one month:
* pH and alkalinity of the digester feed
* digester operating temperature
* hydraulic loading rate
* organic loading rate
* volatile fatty acids concentration
* ammonia
* liquid and foam levels in the digester
 | Within 6 months of permit issue or such other date as agreed in writing with the Environment Agency |
| IC15b | Unless the report approved under IC15a concludes that the digestion process is stable and the digestate has minimal potential for biogas production, the operator shall submit a written ‘anaerobic digestion vessel cover’ plan and obtain the Environment Agency’s written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of covers for vessels undertaking anaerobic digestion and storing or treatment of unstable digestate including the digestate storage tanks. The plan shall also contain a detailed description of the proposed gas utilisation plant, gas storage infrastructure for the biogas produced during anaerobic digestion, pressure relief valves and gas pipe-work. The plan shall include but not be limited to the following components:* Evidence that the vessel covers, gas utilisation plant and ancillary equipment have been designed by appropriately qualified engineers.
* Evidence that the vessel covers, and gas utilisation plant will be designed and installed in accordance with guidance, *Biological waste treatment: appropriate measures for permitted facilities*.
* An updated Hazard and Operability Study (HAZOP) and DSEAR risk assessment.
* An assessment of gas storage capacity and gas utilisation capacity including proposals for additional gas utilisation plant.
* A program of works with timescales for the commissioning of the vessel cover(s), gas utilisation infrastructure and ancillary equipment.

The plan shall be implemented in accordance with the Environment Agency’s prior written approval. | Within 6 months of the Environment Agency’s written approval of IC15a or such other date as agreed in writing with the Environment AgencyImplementation of all required vessel cover improvements must be completed by 31/03/2025 |
| IC15c | Should the report approved under IC15a conclude that the digestion process is stable and the digestate has minimal potential for biogas production, the operator shall submit a written ‘waste water and digestate storage enclosure plan’ and obtain the Environment Agency’s written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of enclosures/covers (and associated waste gas abatement systems) for waste water/stable digestate storage tanks identified as: ‘Secondary digesters’The report shall include evidence that the tank enclosures/covers will be designed and installed in accordance with guidance, *Biological waste treatment: appropriate measures for permitted facilities*.The plan shall be implemented in accordance with the Environment Agency’s prior written approval. | Within 6 months of the Environment Agency’s written approval of IC15a or such other date as agreed in writing with the Environment AgencyImplementation of all required vessel cover improvements must be completed by 31/03/2025 |

1. The Environment Agency has, after a distinct period of time and changing advice, withdrawn benchmark threshold limits stated in PAS110 for digestate stability.
2. Collaborative discussions are currently taking place between the WaSCs and the EA on the development of an industry benchmark on threshold limits for digestate stability.
3. There is no funding for such IED improvements in AMP7 at Maple Lodge STC.
4. No attempt has been made by the EA to assess how the deadline of 31 March 2025 may be met in practice, given the scale of the infrastructure improvements that are required.
5. The resulting position is that currently:
6. There is no agreed benchmark for the stability of digestate, yet it has been agreed with the Environment Agency that further work will be undertaken to arrive at a benchmark that can be used by the industry;
7. Deadlines currently do not take account of these ongoing discussions;
8. In addition, the current deadlines fail to take account of the financial constraints on TWUL and lack of funding for IED improvements;
9. There has been no suitable or proper assessment of the practicalities of timescales for the required improvements at Maple Lodge STC.
10. IC15b and IC15c are both predicated on the completion of a report under IC15a. It follows that the appropriate timescales specified in both IC15b and IC15c should allow for the development and finalisation of the relevant industry benchmark.
11. In other more recently issued permits, the EA have revised IC15, to remove the outcome of stability testing from the decision-making process on tank coverings. This change has not been made to Maple Lodge.
12. Further considerations required to be taken into account in the design and implementation plan for covering tanks include:
13. The wider health and safety, operational and regulatory compliance position of the existing wastewater treatment operation; and
14. The need to determine the level of residual fugitive emissions and then undertake a risk assessment to conclude what further interventions may be required;
15. Wider business implications of a single blanket deadline for all infrastructure improvements to relevant STCs, wider regulatory obligations imposed on TWUL and the need for funding.
16. The resulting position is that the final deadline of 31 March 2025 is unrealistic and unreasonable.

## Discussions on Tank Covers

1. There have been long running discussions at national level between the WaSCs and the Environment Agency.
2. On 23rd October 2018, the Environment Agency stated[[18]](#footnote-18) that they were open to alternatives to covers if the data showed no emissions.
3. In contrast, Appropriate Measures guidance published on 21 September 2022 reads:

*Section 7.1*

*“6. You must cover all bulk storage tanks. Where possible you must contain and vent tanks and vessels through suitable abatement, or direct emission to a gas recovery system.”*

1. Notwithstanding the publication of the Appropriate Measures guidance, at TAF level the EA stated[[19]](#footnote-19) that “there was no need for expensive RBP testing on open tanks, a simple optical gas gun will show emissions, therefore a cover is required **unless there is evidence to prove otherwise”** (emphasis added).
2. In an IED workshop meeting on 29 September 2022[[20]](#footnote-20), the EA were asked directly if there had been a change in approach “from an initial risk assessment requirement to now full cover and abatement even if it is low risk”. The EA’s response was:

*“Position has not changed, the aim being to prevent diffuse emissions as per BAT 14d. Undertake risk assessments and if there are no diffuse emissions then no requirement to cover.”*

1. In contrast, on 26 September 2023, the EA stated as part of a Schedule 5 request for information[[21]](#footnote-21):

*“Should the digestion process be identified as stable with the digestate having minimal potential for biogas production, the open tanks must still be covered in accordance with BAT conclusion 14d. A stable digestate does not allow the operator to continue to store the waste material within open tanks due to the nature and risk of the waste material.*

*We therefore require that Thames provide written confirmation that they will commit to covering the Primary Digesters (as these tanks have floating roofs in place which we believe are emitting diffuse emissions), and secondary digesters, and that biogas generated will (if appropriate) be utilised as a fuel or stored for utilisation off site.”*

1. Yet further inconsistency in the EA’s approach is set out the following exchange on 18 January 2024[[22]](#footnote-22) in response to queries raised by TWUL:

*“All open topped tanks are to be covered and emissions sent to CHP engines or Odour Control Units. We understand not just methane, but all potential emissions including methane, ammonia and odours. Correct if the contents of the tank are likely to be a source of polluting emissions to air.”*

1. As can be seen from the above, the position advocated by the Environment Agency is confused. On several occasions, the Environment Agency has repeatedly identified the need for a form of assessment of open tanks, as opposed to a blanket requirement for all tanks to be covered. On other occasions, the EA has required covering of all tanks irrespective of risk.

## Ongoing discussions on the development of an appropriate benchmark

1. The water industry and the EA have engaged for some considerable time on the issue of whether or not a benchmark for digestate stability can be found that can be measured and applied by the water companies. Initially, it was considered that BSI PAS 110, a published specification relating to anaerobic digestion, may provide the necessary criteria for a relevant benchmark.
2. On 20 February 2024, the Environment Agency stated that officers had been advised that PAS 110 limits were not applicable. However, the Environment Agency were involving biowaste industry experts on how best to determine stability and thus biogas production potential. At the same time, WaSCs were advised that they should continue to generate data in accordance with the PAS110 methodology.
3. On 21 February 2024, the TAF record reads:

*“WASCs to continue collecting data PAS110/RBG in order to inform and validate any benchmarking/industry standard. Clive in discussions with Steve Bungay. Timescales will depend on how long it takes to get enough data for a sufficient degree of confidence (statistical analysis). Correlation needed between the efficiency of the treatment process and the resultant gas emissions. Collect data for open tanks and for cake as emphasis is more likely to be on making the treatment process better than on cake pad management. The Improvement Condition regarding digestate in tanks is required in order to prove stability for BAT c38.”*

1. An earlier technical note, dated December 2023, prepared by Steve Bungay on ‘Residual Biogas Potential’[[23]](#footnote-23) (“RBP”) and the extent to which RBP might be used as a stability index for sewage sludge treated using anaerobic digestion had identified that more data was needed and that any test protocol needed agreeing and standardising.
2. On 24 April 2024, the TAF record reads:

*“Action on WASCs to collect stability data and issue to Clive - Clive does not require data interpretation at this stage.*

*Action on Clive to speak with Steve Bungay how to ensure consistency across the data collection by WASCs as methodology referenced does not go into detail required. Also written response to WASCs on the technical need for this data and what it is to be used for (verbal explanation given in meeting that it is required in order to derive an industry benchmark).*

*The IC worded "submit a written report, with supporting evidence, on the stability of digestate..." requires "the report shall assess..." - WASCs cannot assess the results if there is no current benchmark to assess against. Action on Clive to confirm in writing what the intension of this IC is, its linkage to a 'benchmark' and how that then links to the two follow-up ICs (b & c). Also mindful that some IC deadlines are approaching.*

*WASCs raised general concern to Clive that there is an availability/capacity issue in contractors able to carried out these assessments, so collection of data may take longer than expected.”*

1. On 15 May 2024, the TAF record reads:

*“WASC action remains open (1) -WASCs to collect stability data and issue to Clive .*

*Clive’s action remains open (2): Steve Bungay recently moved companies so Clive will discuss with him once settled in role.”*

1. On 19 June 2024, the TAF record reads:

*“(1) WASCs feedback that Steve Bungay is drafting a standard approach to RBP testing for the water industry to allow the comparison of future test results. More data will be collated on receipt of that guidance.*

*(2)(3) Clive updated that they are looking to redraft the wording on the IC to make it clear that digestate stability is a separate IC to covering tanks. Clive also advised RBP test applies to 'whole digestate' pre dewatering, not 'cake'. Clive to confirm new wording by 27th June. Clive also producing guidance document for internal staff on the requirements of the ICs - draft to be forwarded to WASCs (4) in order to ensure joint understanding and to inform Steve Bungay work.”*

1. The water industry continues to collate further data to be sent to Steve Bungay as of the date of this Statement of Case.

## 31 March 2025

1. In TWUL’s ‘Response to Maple Lodge Schedule 5 24th October 2023’ the company stated[[24]](#footnote-24):

*“Thames Water is committed to meeting the requirements of BAT. A full BAT risk assessment is required to determine the potential need to cover open topped tanks. Thames is not able to commit to covering tanks by the stated deadline of December 2024, delivery timescales will be subject to the outcome of PR24 and subsequent price review discussions.”*

1. The fact that TWUL have identified that it is not funded for covering tanks is recognised at page 13 of the Permit Decision Document[[25]](#footnote-25).
2. The deadline of 31 March 2025 is arbitrary and unreasonable. TWUL has explicitly stated this on a number of occasions. Cost and the requirement for available funding have been unreasonably ignored by the Environment Agency in determining appropriate timescales within the improvement condition.
3. Concerns raised above on the lack of funding available for improvements to secondary containment apply equally to tank covers. The EA has unreasonably chosen to ignore those funding constraints, leading to arbitrary and unreasonable deadlines imposed in the Permit itself.
4. Similarly, in light of the fact that there are ongoing discussions on the benchmark for digestate stability and the ongoing collection of data, it is unreasonable for the EA to ignore those discussions when setting a deadline for final compliance.

# Practicalities

1. Finally, the deadlines set by the EA for compliance with all mandated infrastructure improvements do not appear to have been informed by any assessment of what might be reasonably practicable within the relevant period[[26]](#footnote-26). By way of example, it is likely to take a number of years in order to satisfactorily cover all of the digester tanks at Maple Lodge, and yet this does not appear to have been factored in at any stage by the EA. TWUL has repeatedly identified that the programme of delivery will need to be phased in order to ensure that existing AD tanks are always in continued operation[[27]](#footnote-27).
2. The draft permit was issued on 28 February 2024. In the covering email[[28]](#footnote-28), the EA expressly stated that they were not asking for comments on the conditions that the EA had used.
1. TW1/1/9 [↑](#footnote-ref-1)
2. TW1/1/13-14 [↑](#footnote-ref-2)
3. TW1/2/40 [↑](#footnote-ref-3)
4. TW1/3/41-42 [↑](#footnote-ref-4)
5. TW1/4/45 [↑](#footnote-ref-5)
6. TW1/5/49 [↑](#footnote-ref-6)
7. TW1/6/51 [↑](#footnote-ref-7)
8. TW1/7/54 [↑](#footnote-ref-8)
9. TW1/8/89 [↑](#footnote-ref-9)
10. TW1/9/106 [↑](#footnote-ref-10)
11. TW1/10/108 [↑](#footnote-ref-11)
12. [Biological waste treatment: appropriate measures for permitted facilities - Guidance - GOV.UK](https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities) [↑](#footnote-ref-12)
13. TW1/4/45 [↑](#footnote-ref-13)
14. TW1/1/5-6 [↑](#footnote-ref-14)
15. TW1/1/14 [↑](#footnote-ref-15)
16. TW1/1/17 [↑](#footnote-ref-16)
17. TW1/1/14 [↑](#footnote-ref-17)
18. TW1/19 [↑](#footnote-ref-18)
19. TW1/19 [↑](#footnote-ref-19)
20. TW1/11/109 [↑](#footnote-ref-20)
21. TW1/12/115 [↑](#footnote-ref-21)
22. TW1/13/114 [↑](#footnote-ref-22)
23. TW/14/121-126 [↑](#footnote-ref-23)
24. TW1/15/128 [↑](#footnote-ref-24)
25. TW1/1/19 [↑](#footnote-ref-25)
26. The scale of IED improvements is set out in the attached spreadsheet, TW1/20 [↑](#footnote-ref-26)
27. TW1/16/136-156, TW1/17/157-168 [↑](#footnote-ref-27)
28. TW1/18/169 [↑](#footnote-ref-28)