

Natural Resources Wales Permitting Decisions

**Resources Management U.K.
Limited (Withyhedge Landfill Site)
Decision Document**

DRAFT

Application for a Substantial Variation

The application number is: PAN-025929

The permit variation number is: EPR/MP3330WP/V004

The applicant / operator is: Resources Management U.K. Ltd

The Installation is located at: Bowling Farm, Rudbaxton, Haverfordwest, SA62 4DB

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account

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1. Summary

1.1. Application summary

Resources Management U.K. Limited have submitted an application to Natural Resources Wales (NRW) to change its environmental permit for Withyhedge Landfill Site (permit number EPR/MP3330WP).

This change, termed a 'variation', is a legal requirement under the Environmental Permitting Regulations (England and Wales) 2016 ('EPR').

The proposed changes include:

- Revised final restoration levels;
- Modified management and monitoring program for groundwater, surface water and leachate;
- New landfill gas compliance levels;
- The addition of 50,000 tonnes of waste soils per year under a new Waste Recovery activity; and
- Consolidation and modernisation of the permit, including a review of existing Improvement Conditions and Pre-operational Conditions.

Regulation 34 EPR permit review

In accordance with regulation 34 of EPR, whilst assessing the operator's proposed changes, we have reviewed other parts of the permit and made further changes.

These changes include:

- Updates and modernisation of the permit conditions;
- Removal of reference to any storage of waste before disposal (D15);
- Removal of reference to storm overflow from the permit; and
- A new requirement to monitor and report on depth to water/leachate in perimeter landfill gas monitoring boreholes

All changes, along with their justification and our assessments, are explained in detail throughout this document.

1.2. Our decision

We are minded to issue the variation for Withyhedge Landfill Site operated by Resources Management U.K. Limited.

In reaching this decision, we have taken into account all relevant considerations and legal requirements relevant to the variation application. A thorough and robust technical assessment has been undertaken, which is summarised in this document. We are satisfied that the permit will ensure the necessary level of environmental protection is maintained, in line with regulatory standards and our statutory duties.

2. Receipt of the application

The application was received on 31/05/2024 and allocated to a Permitting Officer on 21/02/2025. In order for us to be able to consider the application duly made, we needed more information. We requested the following:

- An additional application fee;
- An updated, clearer site plan;
- Updated pre-settlement levels drawings ;
- Waste Recovery Plan (WRP);
- Further information relating to the Stability Risk Assessment (SRA);
- Further information relating to the Hydrogeological Risk Assessment Review (HRAR); and
- An updated Surface Water Management Plan

A letter requesting this information was sent to the applicant on 28/02/2024. Upon receipt of this information, on 24/04/2025, we were able to consider the application duly made. This means we considered it was in the correct form and contained sufficient information for us to begin our determination, but not that it necessarily contained all the information we would need to complete that determination.

3. Confidential information

The applicant made no claim for commercial confidentiality, and we have not received information in relation to the application that appears to be confidential in relation to any party.

4. Legislation

The variation will be issued, under Regulation 20 of the Environmental Permitting Regulations (EPR). The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- a *landfill* as described by the Landfill Directive; and
- subject to aspects of the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 which also have to be addressed.

When we decide whether to issue or refuse an application, we must follow the law. This means we carefully consider all the legal requirements and make sure that any permit issued will protect the environment properly.

As part of this process, we assess how the proposed activities could affect air, water, land, and nearby wildlife or habitats. We also assess impacts on human health.

Natural Resources Wales (NRW) is responsible for controlling pollution that comes from within the boundaries of the site and that can be managed through the permit. We also have a duty to make sure our decisions are fair, balanced, and follow the correct procedures.

Holding an environmental permit does not remove the need for other required permissions. For example, operators may also need planning permission from the Local Planning Authority (LPA) or consents from other regulatory bodies, depending on the nature of the activities proposed. Whether or not the operator has these other permissions in place has no bearing on our decision on the permit application.

5. Consultation

5.1. Consultation on the Application

We have carried out consultation on the application in accordance with EPR, our statutory Public Participation Statement¹ and our Regulatory Guidance. Due to the high level of interest in the site, we considered it necessary to undertake additional engagement.

When considering additional communication and engagement options, we choose options that will be most appropriate for the specific application and achieve value for money; a principle we must follow as a public service organisation funded by the Welsh Government. For the consultation on this application, we decided that it was appropriate to advertise the process to ensure that everyone had a fair chance to comment. We sign posted members of the public to the consultation using press releases, social media and newsletters.

We used NRW's consultation hub to provide the public with a summary of the proposed changes and link out to key application documents. The full application was made available via our public register and information was given on how to request the documents if needed.

We also consulted with the following bodies, which includes those with whom we have "Working Together Agreements":

- Public Health Wales (PHW)
- Health and Safety Executive (HSE)
- Pembrokeshire County Council (PCC) – Planning
- Pembrokeshire County Council (PCC) – Pollution Control
- Carmarthenshire County Council (who assist PCC with Minerals and Waste)

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly.

¹ [Natural Resources Wales / Public participation: how you can take part in our permit and licence consultations](#)

The consultation started 23/05/2025 and ended on 20/06/2025.

A summary of consultation comments and our response to the representations we received can be found in Annex 1. We have taken all relevant representations into consideration in reaching our decision.

5.2. Draft Permit Consultation

We are now carrying out consultation on our draft decision. This consultation will begin on 26/02/2026 and end on 26/03/2026. The approach taken to this consultation is the same as what was taken for the initial consultation outlined above for the initial application consultation.

6. Requests for information

Further information was requested during determination by way of a Schedule 5 Notice requiring the applicant to provide further information relating to the WRP. The Schedule 5 Notice was sent on 18/06/2025 with a deadline for response of 02/07/2025. The applicant requested an extension until 09/07/2025, which we granted.

The applicant's initial response to the Schedule 5 Notice was provided on 09/07/2025. However, the information supplied did not fully satisfy the requirements of the Schedule 5 Notice and so further information was requested on 25/07/2025. The applicant provided further information on 30/07/2025 which we considered satisfied the request of the Schedule 5 Notice. A full assessment of the information submitted in regards to the WRP can be found in section 10.6 of this document.

A second Schedule 5 Notice was sent on 31/05/2025 with a deadline for response of 11/09/2025. This notice requested the applicant provide further information on the proposed nickel groundwater trigger levels. The applicant provided the requested information on 09/09/2025 which we considered satisfied the request of the Schedule 5 Notice. A full assessment of the proposed groundwater trigger levels for Nickel can be found in section 10.2.

A third Schedule 5 Notice was sent on 07/10/2025 with a deadline for response of 28/10/2025. This notice requested the applicant:

- Review the trigger and action levels/procedure for methane (in landfill gas);
- Provide a Landfill Gas Management Plan;
- Provide an Odour Management Plan;
- Provide a Leachate Management Plan;
- Update the HRAR; and
- Review and update the Monitoring Location Plans.

The applicant provided further information on 05/11/2025, 18/11/2025 and 16/01/2026 which we considered satisfied the request of the Schedule 5 Notice.

A full assessment of the information received can be found in the relevant sections of this document.

Several informal information requests were also made via email during the determination. The notices and any responses relevant to our determination are available on the public register.

7. The Installation

The regulated facility is classed as an *installation* under the Environmental Permitting (England and Wales) Regulations 2016, carrying out the following main activity listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations:

- Section 5.2 Part A(1) (a), the disposal of waste in a landfill

The facility will also carry out waste operations, which are defined in the Waste Framework Directive (Directive 2008/98/EC) as any activity involving the disposal or recovery of waste. Under the Waste Framework Directive, waste activities are classified using “R-codes” for recovery and “D-codes” for disposal.

The main installation landfill activity is also made up of several waste operations, including the deposit of waste into landfill (D1) and specially engineered landfill (D5).

An installation may also comprise “directly associated activities” (DAA). These directly associated activities are integral to the operation of the landfill and are therefore part

of the overall installation. Some of these activities are also classed as waste operations. These include:

- Landfill Gas Management – flaring of landfill gas
- Fuel storage
- Combustion of landfill gas for the purpose of electricity generation (R1 – Use of waste principally as a fuel to generate energy)
- Leachate management (D15 – Storage of waste pending disposal and R15 – Storage of waste pending any of the recovery operations)
- Surface water management – discharge of site drainage from the landfill (D6 – release to waterbody)

None of the above listed activities will be changing as part of this variation although as discussed further in section 12.1, we have removed reference to storage of waste before disposal (D15) as part of our permit review.

The variation will add the following new waste operation:

- Deposit of waste for recovery (R5)

This will allow the Operator to accept recovered waste at the site for use in engineering and restoration works. A full explanation of this activity, along with our technical assessment of the supporting information, can be found in section 10.6 of this report.

Together, these listed and directly associated activities (some of which are also waste operations) comprise the Installation.

8. Operator Competence

We require operators holding environmental permits to be competent to deal with the environmental risks associated with their activities. When an operator applies to vary their environmental permit, we are able to consider operator competence as part of our determination.

EPR requires us to identify the operator and make sure they continue to be in control of the operations. In this case, we are satisfied that the applicant is the person who

will have control over the operation of the Installation after the variation is issued; and that they will be managing day-to-day activities. This decision was made in accordance with Regulatory Guidance Note (RGN) 1 Understanding the meaning of operator².

We also need to assess:

- Environment Management Systems (EMS);
- Technical competence;
- Record of compliance (including relevant convictions); and
- Financial competence (including financial provision for some types of regulated facility).

This section will outline how we have considered each of these factors, in accordance with our duties under EPR and our guidance and RGN 5 Operator Competence³.

8.1. Environmental Management System (EMS)

Environmental permits require operators to have a written management system. This is a set of procedures describing what will be done to minimise the risk of pollution from the activities covered by a permit.

The applicant has stated in the application that they have an EMS that meets the requirements for an EMS in our “How to comply with your environmental permit” guidance⁴. A summary of the management system has been provided with the application and the applicant has identified areas of the management system which will need to be updated should this variation be granted.

Whilst the information provided is satisfactory for the purpose of a variation application, previous compliance history indicates that in the past, the systems have not been adequate and/or have not been adequately followed. We discuss compliance history in more detail in the rest of this document, see section 8.3.

² [RGN 1 Understanding the meaning of 'operator' \(naturalresources.wales\)](#)

³ [RGN 5 Operator Competence \(naturalresources.wales\)](#)

⁴ [Natural Resources Wales / Guidance to help you comply with your environmental permit](#)

Permit condition 1.1.1 of the permit is in place to ensure the operator will need to continue to manage and operate the permit in accordance with an EMS and we will continue to regulate against this condition.

As part of our permit review, we have implemented a new Improvement Condition (IC) requiring the operator to review and update their entire Environmental Management System (EMS). This will ensure that the EMS is aligned with the updated permit conditions and incorporates best practice operating techniques, thereby strengthening site management and improving environmental performance.

8.2. Technical Competence

Technical competence for waste activities refers to the knowledge, skills, qualifications, and experience required to manage waste operations in compliance with environmental regulations. It ensures that waste is handled and disposed of in a way that protects human health and the environment.

Permit condition 1.1.4 requires the operator to comply with the requirements of an approved competence scheme and we require there to be a Technically Competent Manager (TCM) on site. Applicants are therefore required to demonstrate technical competence by providing evidence of registration with an approved scheme.

The applicant has confirmed the names of those who have joined the approved scheme run jointly by the Chartered Institution of Waste Management (CIWM) and Waste Management Industry Training and Advisory Board (WAMITAB).

We have confirmed that the named persons are registered with the CIWM/WAMITAB competence scheme. Based on this, we are satisfied that, following the variation, the operator complies with the requirements of an approved technical competence scheme and that a TCM will be in place.

8.3. Record of compliance (including relevant convictions)

When considering a permit variation application, we review the operators record of compliance. At Worthyhedge Landfill, the operator has been subject to warning letters and enforcement notices relating to odour and other pollution concerns. This track

record of non-compliance led to the site being ranked as the worst-performing permitted installation in Wales in both 2023 and 2024. There are also further on-going investigations into the operators compliance with its permit.

We fully acknowledge the level of discontent in the communities surrounding Withyhedge Landfill that has been caused by the odour issues at this site. However, we must also consider how the operator has been co-operative in addressing the non-compliances, voluntarily closing the site between May 2024 and January 2025 to carry out site improvements and heavily investing in the site's infrastructure. This permit variation application reflects a commitment to modernising the permit and ensuring it is fit for purpose. These changes are expected to support improved compliance in the future.

We have also considered relevant offences by relevant persons. Relevant offences are those unspent convictions under legislation as listed on "Relevant convictions for environmental permits" (GOV.UK)⁵. Relevant persons include the company who are the operators of the permit, directors, company secretaries or similar officers associated with that company, as well as other companies those persons were part of when they were convicted.

The applicant has declared in their application they have no relevant convictions. However, since the application was submitted, Atlantic Recycling Limited, who share a common director with Resources Management U.K. Limited, has been convicted under the Environmental Permitting (England and Wales) Regulations 2016, Regulation 38 (2) and 39 Waste. The sentencing resulted in a fine on 06/01/2026 and is considered unspent in accordance with the Rehabilitation of Offenders Act 1974 and is therefore relevant when considering operator competence as part of this application.

We have considered the operators poor performance, the relevant conviction and the environmental impact of the changes proposed to the permit as part of this application (detailed in this report). We consider that issuing the variation is considered the most pragmatic, practical and environmentally beneficial decision. An outcome of the

⁵ [Relevant convictions for environmental permits - GOV.UK](#)

decision will be a modernised consolidated permit that reflects current site conditions and clearly outlines the conditions, emission limits and operating techniques the operator must comply with. These strengthened controls provide a stronger regulatory framework for managing the risks at this site.

This decision is in no way condoning the previous action of the operator and does not bear any influence on any on-going or future enforcement actions.

8.4. Financial Provision

We only issue a permit if we believe the operator will be capable of meeting the financial obligations of the permit. The applicant has declared they have no current or past bankruptcy or insolvency proceeding against them. There is no known reason to consider that the operator will not be financially able to comply with the permit.

The Landfill Directive requires an operators of landfill sites to make sufficient financial provision prior to the operation of the landfill, adequate to discharge the obligations of the permit (including closure and aftercare). Operators of landfill sites must demonstrate they have fulfilled this requirement in accordance with our requirements, i.e. sufficient, secure and available to the operator.

An updated legal agreement relating to this sites financial provision was drawn up for this site and an NRW led variation was issued on 13/05/2025 to update the financial provision condition. As explained in the decision document for this variation⁶, available on the public register, the agreement has been reviewed and is fit for purpose for the changes made by this variation.

9. The site

There are no changes to the site boundary proposed as part of this variation. The applicant has however provided an updated site plan which we consider is satisfactory, showing the extent of the site of the facility. The plan will be included in the permit and the operator will be required to carry out the permitted activities within the site boundary.

⁶ <https://publicregister.naturalresources.wales/Search/Download?RecordId=185279>

Updated plans showing the locations of the permit's monitoring points for groundwater, surface water, landfill gas and leachate have also been provided:

- Surface Water Monitoring Points (drawing number 2365/9r2, dated October 2025);
- Groundwater Monitoring Wells (drawing number 2365/10r2, dated October 2025);
- Leachate Monitoring Wells (drawing number 2365/11, dated October 2025); and
- Perimeter Landfill Gas Monitoring Wells (drawing number 2365/12, October 2025)

These plans will form part of the permit, referenced in the relevant emissions and monitoring tables and the permits operating techniques table (Table S1.2). Any amendments to these plans, made as the landfill develops, will need to be agreed in writing with NRW.

10. Technical Assessment of the Proposed Changes

The next sections of this document explain how we have approached the critical issue of assessing the likely impact of the proposed changes to the permit on human health and the environment. Whilst effort has been made to clearly define each of these issues, there is overlap between the assessment required for the proposed changes which is explained in the sections below where relevant.

10.1. Revised final restoration levels

The landfill has been developed in three phases. Phase 1, located to the east, has been completed and permanently capped with a flexible membrane liner covered by topsoil. Phase 2 is also complete but currently has some temporary capping, while Phase 3, to the west of the site, is currently being developed consisting of active cells and land yet to be developed.

There are discrepancies between the approved permitted restoration plan landform topography and the actual built topography of the completed phases. While the approved plan showed a "whale-back" profile oriented west to east, the as-built profile does not reflect this design.

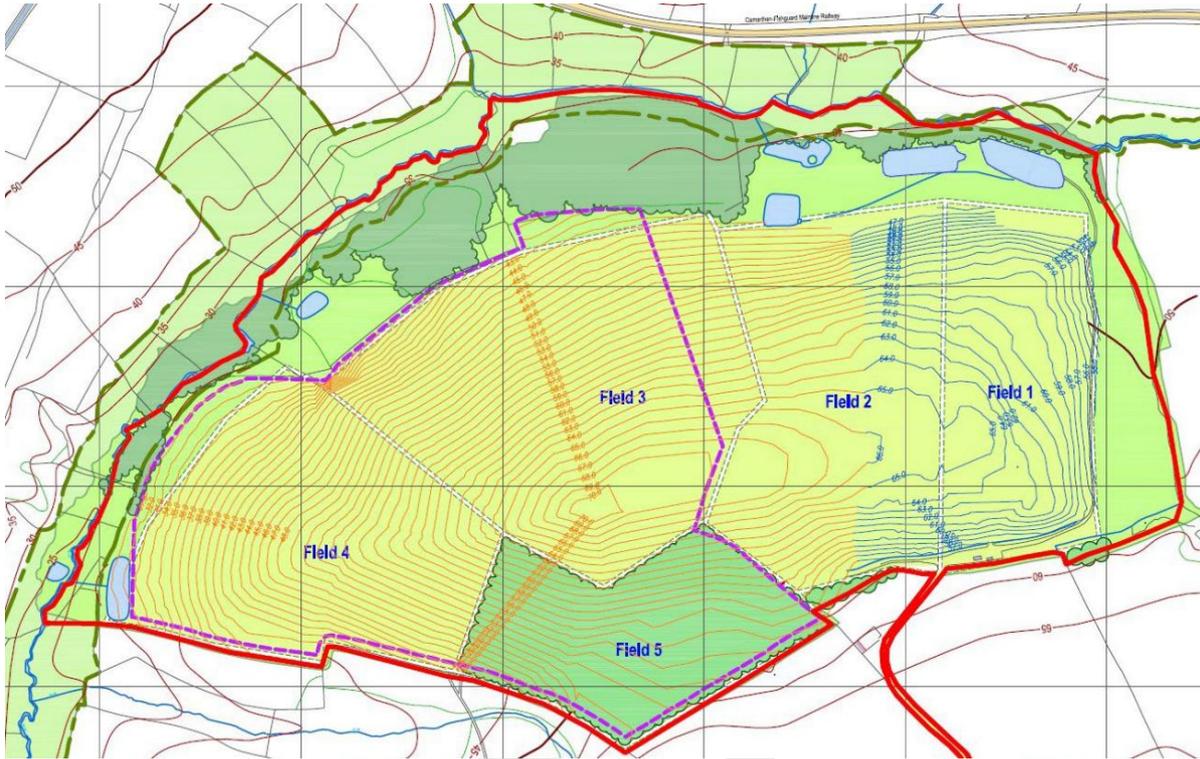


Figure 1: Previously approved restoration levels showing “whale back” profile (drawing reference WHV5)

The Operator has shown, using the Propeller Platform⁷, that the northern edge of the site has been overfilled by up to 6 meters (m) in some areas and there is underfilling of up to 2m in others. The difference between the as built profile, to the permitted profile, equates to an estimated additional 406,500m³ of waste deposited. These deviations occurred under the previous and current permit holder, and the current operator has stated in the application they do not know the reasons behind them.



⁷ The Propeller Platform is a tool that helps landfill operators see detailed, up-to-date 3D maps of the landfill site, based on drone surveys and compare these to approved plans.

Figure 2: Plan showing thickness of historical over tipping (red showing 4.5m or more, orange showing 3-4.5m, yellow between 1.5-3m, no colour/grass shows levels are within 1.5m of the original restoration level) (figure taken from applicants "Supporting Information" document, document reference 2365r1v1d0524, May 2024)

To support keeping the existing landform as is and updating the permit accordingly, the operator has completed a risk assessment. A revised final landform for Phase 3 has also been proposed which has been included in the assessment. The new design features a natural, curved profile in accordance with the surrounding landscape.

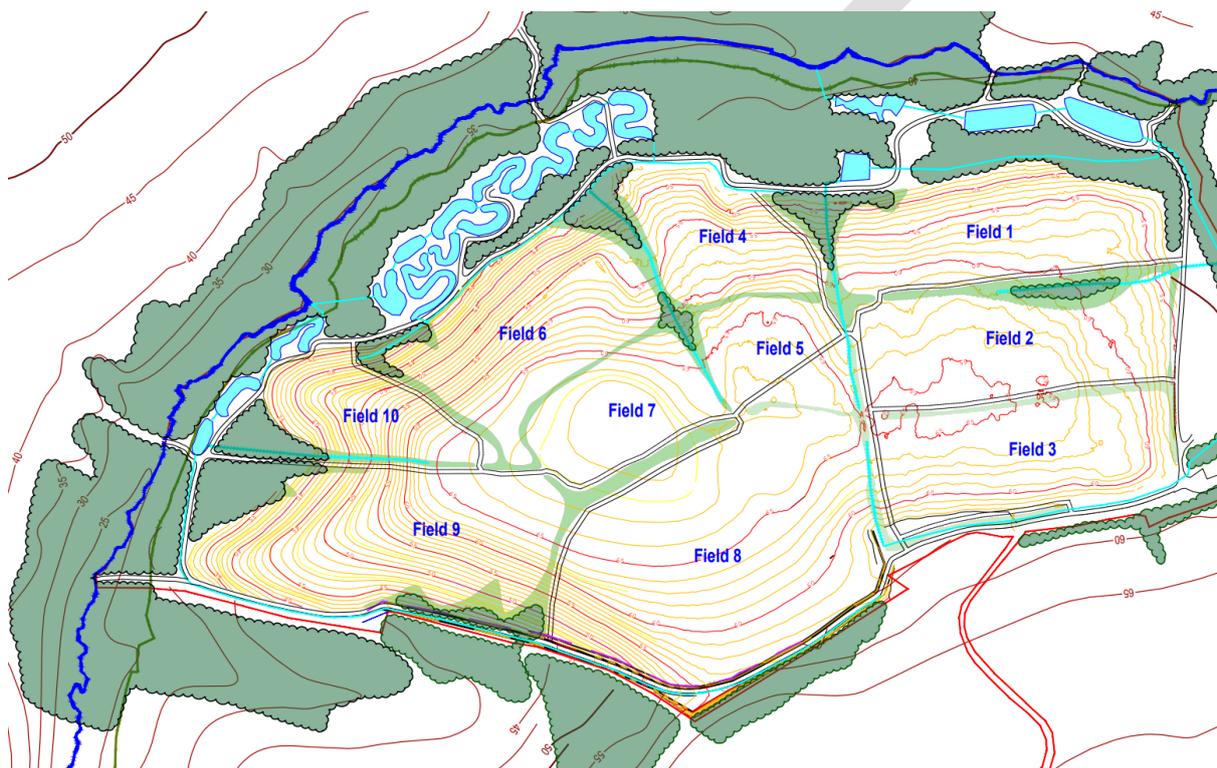


Figure 2: Proposed new restoration landform design (extract from 'Proposed Pre-Settlement Landform and Landscaping Details' (drawing reference 2365/4) dated 03/2025).

The proposed revised landform results in a total waste volume of 6,916,867m³, which is 320,307m³ more than the previously permitted volume of 6,596,560m³. This increase accounts for some of the overfill identified (406,500m³) and is not a request for additional future waste capacity.

This variation application seeks to replace the currently approved restoration contours (document reference: WHV5) with the revised version (document reference: 2365/4).

The applicant has assessed the environmental and engineering risks associated with the revised landform, including the additional waste which has been deposited. The following elements have been considered:

- Hydrogeological conditions;
- Slope stability;
- Liner integrity; and
- Landfill gas production

We will discuss each of these in detail below.

Hydrogeological conditions

A Hydrogeological Risk Assessment (HRA) is an assessment of risk posed from an activity on the surrounding water environment. A HRA is required when a landfill operation is proposed and it is a requirement of modern permit conditions for the HRA to be reviewed, taking account of monitoring results, every 6 years. The Operator has carried out a Hydrogeological Risk Assessment Review (HRAR) to satisfy the permit's review requirement, but also to support the changes proposed as part of this permit variation application.

The HRAR presents a new Conceptual Site Model (CSM) using previous and new data collected over the past 30 years. A CSM identifies potentially sensitive receptors surrounding a landfill site and how pollution may reach them. The operator's new CSM, assumes the changes being proposed as part of this variation. NRW have reviewed the new model and are in agreement with the updates. A separate CSM has been developed for Phase 1 which as discussed, is now closed.

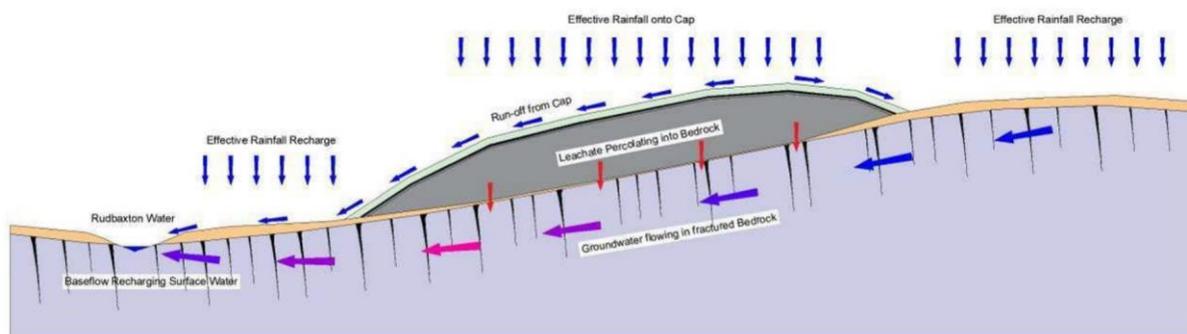


Figure 1: Simple Phase 1 CSM, taken from applicant's HRAR (document reference: "Hydrogeological Risk Assessment Review, report number 2365r2v1d0524)

A further CSM has been developed for Phase 2 and Phase 3, which acknowledges the fact these phases have/will be developed in accordance with the Landfill Directive. The Landfill Directive requires that landfill sites are designed and built to strict engineering standards, such as liners and leachate collection systems which help prevent pollution of soil, groundwater, and surface water.

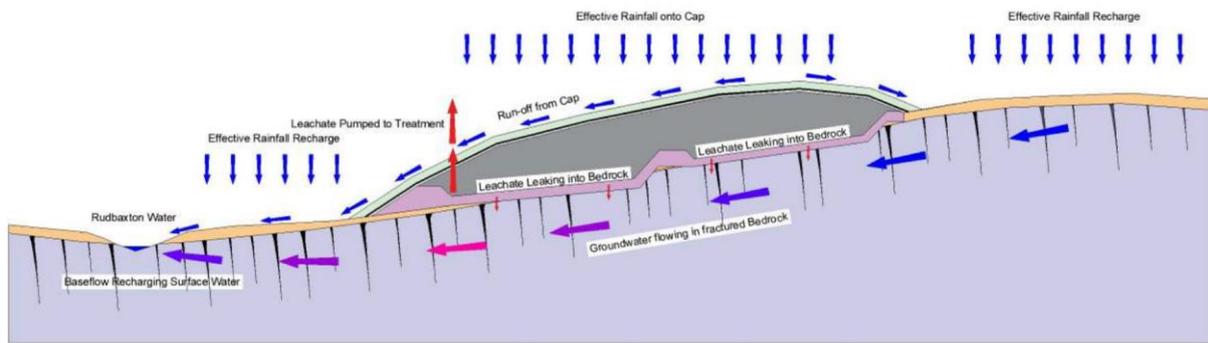


Figure 1: Simple Phase 2 and 3 CSM, taken from applicant's HRAR (document reference: "Hydrogeological Risk Assessment Review, report number 2365r2v1d0524")

The new CSM continues to identify the main environmental receptor of the activity as Rudbaxton Water, the watercourse running east to west along the north of the site. The underlying assumption from the CSMs, which is used by the operator in their assessments, is that groundwater beneath the site, flows through the bedrock and into the Rudbaxton Water. Therefore, groundwater flow under the landfill is a key pathway to the river from the landfill activity.

The operator has run updated LandSim⁸ modelling based on the revised CSM, using conservative assumptions that intentionally overestimate potential impacts. We agree with these assumptions and note that this approach provides greater protection for the local environment. We have reviewed the LandSim model input parameters and consider it suitable for predicting impacts from the site and for ensuring the HRAR reflects reality.

The updated CSM and modelling assumes the new proposed final restoration levels have been approved and help determine the impacts of this should we grant the variation. The HRAR has not indicated that there will be any negative impacts as a

⁸ A LandSim model is a computer program that helps predicts how pollution, such as leachate, from a landfill may behave over time.

result of this change. The HRAR recommends changes to the management and monitoring program based on the updated modelling and monitoring data and these will be discussed in detail in section 10.2 (Changes to groundwater management and monitoring) and 10.4 (Changes to leachate management) below.

Slope stability

Slope stability is important in landfill assessments because unstable slopes can lead to waste collapses, damage to liners, and the release of pollution into the surrounding environment. The new restoration levels include the retention of additional waste overtopping and the operator has reviewed the existing Stability Risk Assessment (SRA) for the site to determine if any further assessment is required as a result of this change.

The previous Stability Risk Assessment for the site was carried out in 2008 to support the “Valley Cell” application (infilling of the void between Phase 1 and Phase 2). The operator has reviewed this assessment and has identified that although it remains appropriate for the site, it does not account for the steeper northern slopes which occurred after the assessment was conducted.

A review of the assessment by the operator concluded that assumptions in the original risk assessment were based on steeper and longer geometric assumptions with the aim of determining the upper limits of stability and not the final (at time of writing) slope configurations. The technical review concluded that as the SRA was based on a steeper slopes than the new restoration level is proposing, and so no further assessment is required.

NRW’s technical specialists have reviewed the information provided to support this decision and agree that there is no anticipated issues with slope stability as a result of the new restoration levels. It was noted however that the SRA assumes the use of soils sources from the site (“site won soils”) for use in restoration layers. The variation includes the proposal in import waste soils (recycled soils) under a Waste Recovery activity to serve this purpose for the remainder of the sites as the site won source as been depleted. This difference, and the impact on the SRA conclusions, is discussed in further detail in section 10.6.

Liner integrity

The overtip will mean greater pressure on the base of the landfill. To support the proposal to retain the overtip as part of the revised restoration landform levels the operator has carried out an assessment to check that there is no risk of the lining system integrity being compromised where pressure on the liner would be greater than anticipated when the relevant cells were originally constructed.

The operator has assessed the original cylinder tests⁹ and liner specification for the cells which have been historically overtipped and found that 6 of the 7 cells identified may be experiencing a pressure which is greater than that estimated when designing the landfill: Valley Cell North 1, Valley Cell North 2, Cell 3 North, Cell 4 North, Cell 5 North, Cell 4/5 South.

Detailed assessment carried out by way of assessing the acceptable strain limits indicated by the individual cell cylinder tests for Valley Cell North 1, Valley Cell North 2 and Cell 4/5 south concluded that the additional pressure is within the acceptable strain limits. New cylinder tests have been carried out to assess Cell 3 North, Cell 4 North and Cell 5 North. These tests concluded the lining is sufficient to withstand the increased load.

During our assessment, we asked how the applicant had considered how the additional waste volume will generate extra leachate (and additional weight) in their assessment. A technical note was provided which justified there not being any additional pressure of the landfill liners because:

- The waste is deeper but covers less area, so the total leachate volume shouldn't increase, even if it's more concentrated;
- The permits leachate depth limits (max 1 m above the cell base) will remain; and
- The leachate re-circulation system is being removed.

⁹ A landfill cylinder test is a laboratory compression test where waste is placed in a cylindrical mould and loaded to replicate the pressures it will experience in a landfill. This test is standard practice in landfill design and helps estimate how much pressure the landfill liner needs to be able to withstand.

NRW's technical specialists have reviewed the assessments provided and agree that from the information provided in the application, there will be no risk of the basal liner being comprised as a result of the new restoration profile.

Landfill gas production

Landfilling of waste can generate gases which can pose a risk to human health and the environment. A Landfill Gas Risk Assessment (LGRA) is required when changing final restoration contours because changes to waste depth, slope, or surface profile can affect how much gas is produced and how it migrates. A LGRA for the site was last carried out in 2013 when waste streams were very different to what they are today as a result of increased waste segregation and recycling. The assessment predicted that landfill gas should be generating 2,200m³ / hour. However the monitoring data has shown generation rates are below this.

To inform an updated LGRA, an updated GasSim model¹⁰ has been run using updated waste composition inputs using actual site records and current/future waste projections. A comparison of the updated modelling with the original LFGA, showed that as the original assessment was based on depositing more organic waste types, landfill gas generation is expected to peak at 1,420m³/hour which is less than the original assessment which predicted (2,200m³/hour). The updated modelling results have been corroborated by the landfill gas engine monitoring data.

The applicant has concluded that as the modelling indicates that the site is not generating as much gas as the existing model estimated (which is largely due to the change in waste streams), the additional waste will not have had a detrimental effect on how much landfill gas will be generated. NRW are in agreement with this conclusion.

10.2. Changes to groundwater management and monitoring

There is an established groundwater monitoring network with boreholes located at less than 50 metre intervals around the landfill. The main aim of the groundwater

¹⁰ Gas Sim is a computer modelling tool which is used to predict landfill gas production.

monitoring at this site is the protection of the river bordering the north of the site, Rudbaxton Water.

To help determine groundwater flows and quality, groundwater levels and chemistry data is monitored at boreholes, downgradient of the site between the landfill and river, upgradient of the site and cross gradient (to the sides) of the site. Monitoring at all these boreholes is important to check the landfill is having no negative impacts.

An environmental permit for a landfill specifies what groundwater monitoring needs to be done and also specifies trigger levels for some of the monitoring boreholes for a variety of determinands.

In accordance with the findings of the HRAR, which is based on additional data and an improved understanding of the CSM, the operator has proposed a number of changes to the permit's groundwater limits and monitoring requirements.

Proposed new monitoring program

The existing permit specified the following monitoring frequencies of groundwater monitoring boreholes:

For boreholes referenced TP1, TP9, TP10, TP11, TP12, GW01:

Monitoring frequency	Parameter
Monthly	groundwater level, temperature, pH, electrical conductivity 20°C, ammoniacal nitrogen, chloride, biological oxygen demand, dissolved oxygen
Quarterly	TON, TOC, calcium, magnesium, sodium, potassium, alkalinity, sulphate, iron, manganese, mercury, cadmium, chromium, copper, cyanide, nickel, lead, zinc, sulphide, phenols, naphthalene, mecoprop
Bi-annually (every 6 months)	mineral oil
Annually	hazardous substances

For boreholes referenced BH101, BH105, BH1, BH2, BH3, BH6, BH9, BH15, BH18, BH20, BH21 and BH23 and any additional monitoring boreholes as agreed in writing:

Monitoring frequency	Parameter
Monthly	groundwater level, temperature, pH, electrical conductivity 20°C, ammoniacal nitrogen, chloride, dissolved oxygen

Quarterly	alkalinity, biological oxygen demand, chemical oxygen demand, nitrate (for ton), nitrite (for ton), total organic carbon, sodium, potassium, calcium, magnesium, sulphate, iron, manganese, cadmium, copper, chromium, lead, phenols, naphthalene, mercury, mecoprop, nickel, zinc, ionic balance, monitoring point base
Annually	hazardous substances

The operator has applied for these to be varied so that the following monitoring frequencies apply:

Monitoring frequency	Parameter	Monitoring Boreholes
Monthly	groundwater level	BH17, BH18, BH19A, BH24A, BH25, BH26 GW1, BH27, BH28, BH34, TP10, TP9, TP11, TP12, BH104, BH14, BH15, BH16, BH33, BH10, BH11, BH12, BH13, BH29, BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH9, BH30, BH38
	pH, electrical conductivity, ammoniacal nitrogen, chloride	
Quarterly	temperature, dissolved oxygen, nickel, cadmium, mecoprop, naphthalene, phenol, phenols (total), copper, calcium, magnesium, sodium, potassium, alkalinity, sulphate, cyanide, iron, manganese, mercury, chromium, lead, zinc, nitrate, nitrite	
Annually	hazardous substances	
	well depth	

The proposal includes the decommissioning of the following boreholes: BH19, BH20, BH31, BH32, BH35, BH36, BH37, BH105 and BH18 to be replaced with BH18R.

NRW have reviewed the proposed frequencies and locations of the monitoring boreholes and are in agreement with the changes. The parameters and frequencies proposed will allow for sufficient data to monitor the impact of the landfill. Table S3.8 of the permit has been updated to detail the groundwater monitoring regime.

Removal of trigger limits for upgradient boreholes (BH105 and BH20)

As well as a requirement to monitor groundwater quality, the permit includes groundwater trigger limits. These are numerical limits set out for different substances in the permit. If monitoring shows these limits are exceeded, this will be considered a permit breach.

The existing permit sets trigger limits (or “compliance limits”) for BH105 and BH20 which are upgradient boreholes. The operator has applied to remove these limits from the permit. As discussed, monitoring at these boreholes, which are not impacted by the landfill activity, helps understanding of the site hydrogeology as data can be compared to monitoring results from boreholes downgradient which may be affected by the landfill activity. However, NRW agree that trigger limits for these boreholes can be removed as the landfill will not impact on the chemistry at these boreholes due to the direction of flow of the groundwater. As outlined in the section above, the operator will still be required to monitor these boreholes to inform ongoing and future hydrogeological assessments.

New trigger limits for cross-gradient boreholes

Whilst reviewing the permit, NRW determined there to be a requirement for trigger levels to be included in the permit for some of the cross gradient boreholes bordering Phase 3. This is to set a control in the permit against any leachate migration or breakout when this Phase is being developed.

The operator proposed to add borehole monitoring points BH10, BH11, BH12, BH29 and BH33 to the permit’s monitoring regime outlined in the HRAR. BH12, BH29 and BH33 will have emission limits associated with them in the permit.

Mecoprop and Naphthalene groundwater trigger limits

Monitoring of mecoprop and naphthalene is important in landfill monitoring because both are indicators of contamination and can pose environmental and human health risks should they enter surface water. The operator has applied to increase the groundwater trigger limits for mecoprop and naphthalene as follows:

Borehole monitoring point	mecoprop (mg/l) existing	mecoprop (mg/l) proposed	naphthalene (mg/l) existing	naphthalene (mg/l) proposed
TP9	0.0001	0.018	0.00001	0.002
TP11	0.0001	0.018	0.00001	0.002
TP12	0.0001	0.018	0.00001	0.002
BH104	0.0001	0.018	0.00001	0.002
BH1	0.00003	0.018	0.00003	0.002
BH2	0.0001	0.018	0.00006	0.002
BH3	0.0004	0.018	0.00006	0.002
BH4	0.0001	0.018	0.00001	0.002

BH5	0.0001	0.018	0.00001	0.002
BH6	-	0.018	-	0.002
BH30	-	0.018	-	0.002
BH8	-	0.018	-	0.002
BH20	0.0001	Remove	0.00001	Remove
BH21	0.0001	Remove	0.00001	Remove
BH22	0.0001	Remove	0.00001	Remove
BH23	0.0001	Remove	0.00001	Remove
BH105	0.0001	Remove	0.00001	Remove

The proposed new limits are in accordance with Environmental Quality Standards (EQS) set for surface water. EQS are maximum acceptable concentration of a chemical or physical substance in surface water that ensures water is safe for its intended uses (drinking, recreation, agriculture, fisheries) and protects aquatic life. They are derived from legislation, such as the Water Framework Directive. The EQS have been checked against the lists produced by the Environmental Agency^{11,12} and agree the new limits are representative of the relevant EQS. We also agree with the proposal to have one limit across all boreholes which will help with monitoring and regulation.

The CSM and associated modelling has demonstrated that chemicals entrained in the groundwater are diluted before they reach the the Rudbaxton Water. Therefore they have justified this change as being conservative where if the EQS is not breached in groundwater, there will be no breach in the river. NRW agree with this justification and the trigger limits will be updated (in Table S3.4) as per the above table as part of this variation.

As part of the monitoring program, the operator has proposed to use 'control levels'. The aim of a control level, which will be set at a lower limit than the trigger level in the permit, is to ensure investigations and preventative actions are taken before a permit breach occurs. The operator has set the control level for mecoprop and naphthalene as 50% of the EQS which we are in agreement with.

¹¹[Freshwaters specific pollutants and operational environmental quality standards.ods](#)

¹²[Freshwaters priority hazardous substances priority substances and other pollutants environmental quality standards_1_ods](#)

Nickel, cadmium and phenol groundwater trigger limits

The existing permit sets the following trigger levels:

- Nickel
 - TP9, TP11, TP12, AIGH BH104, BH20, BH22/GA2, BH23, BH21 – 0.05 mg/l
 - BH1, BH2, BH101 and BH102 - 0.02 mg/l
 - BH105 – 0.031 mg/l
- Cadmium - 0.0095mg/l
- Phenol - 0.15mg/l

The HRAR acknowledges that nickel, cadmium and phenol have been detected at concentrations above EQS in upgradient groundwater. However, this is in contrast to the LandSim modelling results which predicts that emissions of these substances, from the landfill as being very low.

The operator has proposed improvements to the sampling of nickel, cadmium and phenols. This will include filtering of the sample to allow a better understanding of the determinant at the site. The operator has proposed to review the trigger levels using updated data in 3 years' time (from the date of the HRAR). In the meantime, they propose to keep the levels mostly as they are currently permitted, although the monitoring boreholes will be updated as previously discussed. In line with the overall monitoring philosophy, the trigger level for nickel will also be standardised so that all boreholes have one trigger level of 0.05mg/l. We identified that this would mean for BH1, BH2, BH4 and BH5, the trigger level will be higher than what is previously permitted (0.02 mg/l). We asked the operator to provide further justification for this change. The operator explained that as analysis indicates that both groundwater and surface water in the area are naturally mineralised with trace metals, including nickel. Supporting data from the HRAR show that background (already occurring) concentrations of nickel can exceed EQS, likely due to the natural weathering of pyrite in the Meidrim shales, which releases trace metals and can lead to occasional acidic pH events. Although nickel is detectable in leachate, modelling predicts that concentrations leaving the site will be below detection limits, suggesting it is not a contaminant of concern. Given its natural occurrence and the modelling outcomes, the operator argued that it could be said that a trigger level is no longer necessary. However, they have taken a conservative approach by setting a single trigger value of

0.05 mg/l, which will be subject to review following several years of further monitoring. Furthermore, in accordance with the general monitoring philosophy, the control level will be set at 50% of the trigger level which is 0.025mg/l, which remains consistent with the previous limit of 0.02 mg/l and continues to ensure environmental protection.

NRW have reviewed the information provided and are in agreement with this approach. We have specified an improvement condition in the permit for the operator to carry out an interim HRAR for taking into consideration the data they have committed to gathering in this application's HRAR (see Annex 1). Should this data indicate the trigger and control levels can be increased, this must be agreed in writing with NRW following a review of the updated report.

Ammoniacal nitrogen groundwater trigger limits

Monitoring ammoniacal nitrogen in landfill groundwater is important because it's a key indicator of organic waste decomposition and leachate impact. The operator has applied to amend the trigger levels as follows:

Borehole	existing trigger level (mg/l)	proposed trigger level (mg/l)
TP9	12	12
TP11	12	12
TP12	12	12
BH104	12	12
BH20	12	Remove
BH23	12	Remove
BH22	12	Remove
BH21	1.328	Remove
BH2	5.2	12
BH1	12	12
BH101	25.4	Remove
BH102	25.4	Remove
BH105	0.5	Remove
BH5	1.18	12
BH4	1.45	Remove
BH3	-	12
BH6	-	12
BH30	-	12
BH8	-	12

The change will mean a single limit of 12 mg/l across all monitoring boreholes. Whilst this limit is the same as previously permitted for the majority of the boreholes, it will mean, for some boreholes the limit will be increase (BH1, BH2, BH5). The change has been justified by surface water monitoring showing that the EQS for ammoniacal

nitrogen has not been breached in the Rudbaxton Water in recent years. NRW agree with the justification provided and the trigger limits (in Table S3.4) will be updated as per the above table as part of this variation. Control levels will be set at 50% (6 mg/l) of the trigger level in accordance with the updated monitoring philosophy.

Changes to the Chloride trigger levels

Monitoring chloride in groundwater near landfills is important because chloride acts as a good indicator of leachate contamination. The operator has applied to increase the groundwater trigger limits for chloride as follows:

Borehole	Existing Trigger Level (mg/l)	Proposed Trigger Level (mg/l)
TP9	250.0	500.0
TP11	250.0	500.0
TP12	250.0	500.0
BH104	250.0	500.0
BH20	250.0	-
BH23	250.0	-
BH22	250.0	-
BH21	180.0	-
BH2	180.0	500.0
BH1	117.0	500.0
BH101	116.4	-
BH102	116.4	-
BH105	50.0	-
BH5	50.0	500.0
BH4	64.7	500.0
BH3	-	500.0
BH6	-	500.0
BH30	-	500.0
BH8	-	500.0

The EQS for chloride is 250 mg/l. The HRAR justifies setting a groundwater trigger of 4 times this (i.e. 1000mg/l) based on the amount the groundwater is diluted before it enters the Rudbaxton Water. However, 500 mg/l (2 x the EQS) is proposed by the operator for additional protection of the waterbody. The 'control level' (see section below) will be set at 250 mg/l (the EQS). In the last five years, the highest maximum recorded sampling result from the site is 300 mg/l. NRW agree with this justification and the trigger limits will be updated as per the above table as part of this variation.

Control levels

As part of the monitoring program, the operator has proposed to use 'control levels'. The aim of a control level, which will be set at a lower limit than the trigger level in the permit, is to ensure investigations and preventative actions are taken before a permit breach occurs. The operator has set the control levels at 50% of the proposed permit trigger levels. The control level for each substance will be the same for all monitoring boreholes. The operator has proposed a flow diagram indicating actions to be taken in the event a control level or trigger level is breached. NRW have reviewed this and are satisfied sufficient protocols are in place should the control levels be exceeded. The control levels will form part of the permits operating techniques (Table S1.2).

Hazardous substances groundwater trigger limits

The operator has applied for hazardous substances to be sampled every 2 years but has proposed no trigger or control levels. We requested further justification for this during the duly making of the application. The operator confirmed that a number of determinants which previously were classed as hazardous are now (as a result of increased scientific understanding and updated regulatory positions) classed as non-hazardous and will be retained in the permit. For those still classified as hazardous, the currently available data indicates that hazardous substances are not persistently present at high concentration to warrant permitted trigger levels. Hazardous substance will still be monitored and HRA reviews will allow for monitoring data to be reviewed and provide a mechanism for future changes to be made if needed.

We have reviewed the full justification and data provided by the applicant and are in agreement with the proposed monitoring schedule for hazardous substances

10.3 Changes to surface water management and monitoring

An existing surface water collection pond system exists to the north of Phase 1. The ponds receive run-off water from the landfill and allows suspended solids to settle out before the water is discharged via gravity to Rudbaxton Water via permitted discharge point 'D1'. As part of this variation application, the operator has applied to update the permits surface water management techniques for Phase 2 and Phase 3.

The existing system, which has a capacity of 14,064 cubic metres (m³) is currently serving Phase 1 and Phase 2. The new surface water collection system has been

designed to provide a similar capacity of the existing system which has been proven to collect and treat surface water runoff from the site. The new system will have a capacity of 15,293 m³, more than doubling the site capacity for surface water attenuation.

The objective is for the Phase 2 ponds to provide greater capacity per unit area as provided by the Phase 1 system which has been proven to effectively collect surface water and provide attenuation to allow settling of suspending solids from Phase 1 and the restored areas of Phase 2. The operator plans for the existing system to serve Phase 1 only and the new system to service Phase 2 only.

A third surface water collection system will be provided to the north of final develop phase, Phase 3. Each pond system is to have its own discharge point.

The ponds characteristics are summarised below:

Phase	Ponds Description	Capacity (m ³)	Surface Area (m ²)	Discharge Point
Phase 1 (existing)	6 ponds	14,064	7,032	D1
Phase 2	10 ponds	15,293	14,078	D2
Phase 3	3 ponds	5,994	2,997	D3

We have reviewed the information supporting the design of the new surface water management system, including additional information received in response to an informal information request on 20/08/2025 and are in agreement with the proposed update. The Phase 2 ponds have been approved separately whilst this permit variation was being determined.

The requirement to monitor from D3 will be required once the Phase 3 surface water management system is agreed in writing with NRW and constructed.

As part of our permit review, we have decided to remove the flow limits from the discharge points associated with the surface water ponds (D1, D2 and D3). This decision is based on annual reporting data, which consistently shows actual flows to

be significantly below the existing limits. We do not consider there to be any environmental benefit in restricting flow from the ponds, particularly as rainfall falling on the landfill must ultimately discharge into the Rudbaxton catchment. We have also removed reference to 'storm overflows' from the permit as we know these are no longer in use and the new surface water management systems are capable of managing all run off from the site.

The existing permit includes a requirement to monitor the water quality of the Rudbaxton. During determination, the applicant indicated they wish to also update the location of these monitoring points to better understand the water quality of the wider catchment. We have reviewed the justification for this and the location of the new monitoring points and agree with the change proposed. Monitoring points 'SP10, SP11, SP12' will be replaced with 'SP1, SP3, SP5, SP7 and SP9' and detailed in the permit Table 10.11 Surface water – other monitoring requirements. SP10, SP11 and SP12 will be retained as additional further monitoring points should additional data be required.

10.3. Changes to leachate management

Leachate levels in Phase 1

The existing permit requires the operator to extract 1,278 m³ / year of leachate from Phase 1. However, whilst attempting to extract that amount, wells have been found to be dry and as such it has not been feasible for the extraction volume to be achieved. The operator is therefore proposing that the permit is varied to specify that instead of a volume of extraction, a leachate head of 1m above the cell base is maintained. This is the practical minimum level which has been achieved by the operator under the current pumping regime and this is supported by the HRAR, indicating that maintenance of this head has shown downgradient concentrations of monitored substances do not adversely impact the Rudbaxton. NRW have reviewed the full justification provided and are in agreement with the proposal.

The leachate level limits in Table S3.1 will be updated to 1m above the base of the cell as part of this variation.

Removal of leachate re-circulation

The permit previously included provision for leachate to be re-circulated to improve landfill gas yield. Attempts at this by the previous operator have proven re-circulation to not result in improved quality and quantity of landfill gas. The operator has applied to remove leachate re-circulation from the permit. We have no objections to this proposed variation and have removed all references to leachate re-circulation from the permit as part of this variation.

Leachate monitoring

For the Phase 2 leachate monitoring points, the operators application proposed monthly monitoring. However, we consider it more appropriate to retain the existing permits monitoring frequency which is weekly, only reducing to monthly once the entire cell is capped.

Leachate monitoring points

The existing permit required the operator to monitor leachate quality at monitoring point "SWSump". As part of this variation application, the operator requested that this requirement be removed to reflect a previous agreement with NRW that monitoring at this location is no longer necessary. We have reviewed this request and are satisfied that removal of leachate quality monitoring at this point is appropriate.

During determination, the operator also requested the removal of several sealed sumps as routine monitoring points for leachate level. The operator justified the removal as these sumps are difficult to access for dipping and the presence of pumping infrastructure and condensate makes it challenging to obtain reliable leachate level measurements. We are satisfied that this justification is reasonable and that removal of these sumps from routine level monitoring does not compromise environmental protection.

10.4. Changes to landfill gas monitoring and management

New perimeter ground gas monitoring points

During the determination, the operator has proposed an update to the perimeter ground gas monitoring points references to reflect installation of the dedicated gas wells in August 2025. These new ground gas wells have been installed in the same

approximate geographical positions as the groundwater wells previously used for landfill gas monitoring but are wells specifically designed for ground gas monitoring.

Table S3.5 Landfill gas in external monitoring boreholes has been updated to reflect these changes which are summarised below.

In Phase 1, BH24, BH25, BH26, CW1, BH27, BH28, TPR10, TPR9, TPR11, TPR12 and BH104 will be replaced with BH25G, BH26G, GW1G, BH27G, BH28G, TP10G, TP9G, TP11G, TP12G and BH105G.

In Phase 2 and Phase 3, BH10, BH15, BH17, BH18, BH33, BH11, BH1, BH2 and BH3 will be replaced with BH10G, BH33G, BH11G, BH12G, BH13G, BH14G, BH15G, BH15G, BH16G, BH17G, BH19AG, BH1G, BH2G, BH3G, BH4G, BH5G, BH6G, BH30G.

The operator also requested monitoring frequency of these monitoring points be reduced Monthly to Quarterly. However, we consider it appropriate for monitoring frequency to remain at Monthly in accordance with the relevant guidance.

New landfill gas compliance trigger levels

Methane

Methane is the main indicator of landfill gas migration because it makes up the largest proportion of landfill gases and is subject to less interference than other gases such as carbon dioxide.

The current permit includes emission limits (trigger levels) at landfill perimeter gas monitoring boreholes of 2.3% v/v in Phase 1 landfill gas monitoring boreholes and 1% v/v in Phase 2. The operator has applied to remove these limits and replace them with a single limit of 1% across the whole site. The operator proposed that the trigger level will act differently to a standard permit limit whereby exceedance of the trigger level on one occasion will not need to be reported as a breach but will act as a prompt to remeasure immediately upon detection. NRW did not consider this approach appropriate and requested the operator revise the proposal to include a permit limit and revised actions in the event of a breach.

The operator has revised the proposal, identifying a 1.2% trigger level across the sites landfill gas monitoring boreholes and an updated proposal for actions to be followed in the event of a breach.

The use of a compliance limit of 1% above background is recognised by Industry Code of Practice (ICoP) for Perimeter Soil Gas Emissions Criteria and Associated Management¹³. The operator has justified the use of a 1.2% v/v/ trigger level with 3 years of monitoring data which indicate that background levels are essentially zero. We consider the new trigger levels proposed appropriate and will include them in the varied permit.

The action plan to be followed in the event of a trigger level breach will be incorporated into the permit's operating techniques.

Carbon Dioxide

The existing permit does not include emission limits for carbon dioxide (CO₂) at landfill perimeter gas monitoring boreholes. Instead "carbon dioxide assessment levels" are used. The existing agreed levels are as follows:

Monitoring Location	CO ₂ Level	Assessment
WH/AIGBH101	5.8	
WH/AIGBH102	5.5	
WH/AIGBH103	3.3	
WH/AIGBH104	5.5	
WH/AIGBH105	2.1	
WH/BH1	11	
WH/BH15	8.2	
WH/BH18	8.6	
WH/BH2	5.8	
WH/BH20	10.1	
WH/BH21	-	
WH/BH23	-	
WH/BH4	1.1	

¹³[Industry Code of Practice \(ICoP\) for Perimeter Soil Gas Emissions Criteria and Associated Management](#)

WH/BH5	1.1
WH/BH6	-

The approach of having CO₂ assessment levels (or “action levels”) is in accordance with the ICoP. As part of this variation, the operator has proposed to replace all the above individual assessment levels with one action level of 5% v/v for all monitoring boreholes. This level has been chosen in accordance with the ICoP guidance which specifies for background levels between 0-5%, as demonstrated at this site, action levels should be set as the maximum background figure plus 1%. We consider the new action levels proposed appropriate for this site. The action levels and actions to be followed in the event of breach will be incorporated into the permit’s operating techniques.

10.6. Waste Recovery Activity

Recovery means using waste in a useful way, instead of disposing of it. It’s when the waste is put to good use, either by turning it into something new, using it to make energy, or using it to replace other materials.

The applicant has applied for a new Waste Recovery activity (50,000 tonnes / year) to use recovered waste for landfill cell engineering and for restoration. To support this, a WRP has been submitted to demonstrate the activity can be considered a waste recovery activity, not a disposal activity.

We have assessed the WRP assessed against the relevant external guidance¹⁴ and internal guidance (Operational Guidance Note 222 Waste Recovery for Permanent Deposits of Waste). We agree that the activity is a recovery operation based on the information provided in the WRP. The applicant has provided sufficient evidence to demonstrate there is a need to use recovered waste as a result of a general obligation. The waste types proposed will be suitable for the function they will be fulfilling and are all typical wastes used for a recovery activity in line with our guidance¹⁵. We agree that the detailed design of the scheme, including waste types and engineering specifications for cell construction and restoration layers, will be agreed with NRW through the CQA process. As a proportion of the future waste quantities for

¹⁴ [Natural Resources Wales / Prepare a waste recovery plan](#)

¹⁵ [Natural Resources Wales / Check waste types used in a typical deposit for recovery activity](#)

engineering have been based on estimates, the permit will require that the WRP waste quantities be reviewed every five years to ensure the permitted recovery volume remains appropriate.

Full details of our assessment can be found on our assessment form here: [PAN-025929 – Waste Recovery Plan Assessment Form](#).

Slope stability

As discussed in section 10.1, the original SRA has been reviewed as part of this variation application to support the revised restoration levels. The original SRA was deemed to still be sufficient for the site despite the proposed changes in pre-settlement levels. We note that the original SRA assumes the use of soils which have engineering properties which are of a natural soil source. As discussed, whilst restoration to date has used sub-soil which are derived from the site, these have now been depleted hence the proposal to use recovered waste.

We queried this with the applicant who confirmed that soils imported for recovery will undergo testing to ensure geotechnical and chemical properties are suitable for the purpose they are to be used for. These design specifications will be agreed with NRW via the CQA plan. In the event that a material chosen does not have similar properties to those assumed in the SRA, the calculations underpinning the SRA will be re-run to ensure there is no anticipated impact on slope stability. NRW are in agreement with this approach.

Waste Acceptance Procedures for Recovered Waste

In response to an information request from NRW during the determination of the application, the operator has also provided a Waste Acceptance Procedure for the recovery activity. We have assessed this procedure and are satisfied there will be sufficient waste acceptance criteria and procedures in place. The procedure will form part of the permits operating techniques.

10.7. Odour assessment

None of the changes proposed by the operator as part of this variation are anticipated to increase odour emissions from the site. However, as outlined in Section 8.3, the site has a recent history of odour pollution which has impacted the local community.

While the proposed changes do not increase the odour risk, the issue remains a key consideration.

Condition 3.3.1 in the permit will require that emissions from the activities are free from odour at levels likely to cause pollution outside the site. Condition 3.3.2 provides a mechanism for the Odour Management Plan to be reviewed and updated should there be any future issues at the site.

The operator is reviewing the current Odour Management Plan to incorporate additional measures implemented recently to rectify the issues at the site. The provision of this updated plan has been incorporated into this permit via the variation as an Improvement Condition.

10.8. Noise and vibration assessment

We are aware of noise complaints received for the site during the determination of this application. However, none of the changes proposed by the operator are anticipated to increase noise or vibration from the site.

Conditions 3.4.1 of the permit requires noise from the activities to be below that which could cause pollution outside the site. Should noise become an issue at the site, the condition 2.4.1 of the permit required a noise management plan is approved and implemented.

11. Impact on National Site Network Sites, SSSIs and non-statutory sites

A full assessment of the variation application and its potential to affect the identified sites has been carried out as part of the permit determination process. National Site

Network sites, Sites of Special Scientific Interest (SSSI) and non-statutory conservation sites will be discussed separately below.

11.1. The National Site Network

The site is bordered by Rudbaxton Water, which is a tributary of the Western Cleddau River which in turn forms part of the Cleddau Rivers SAC.

A Habitat Regulations Assessment was completed to assess the potential to affect any of the sites identified. The project was screened for likelihood of significant effects and is considered not likely to have a significant effect on any National Site Network site (as documented in section 3.2 of OGN 200 Form 1, or section 5 if applicable). The full assessment is available to view on the public register, see here: [PAN-02529 – OGN 231 Form 1 HRA](#).

11.2. SSSI

The following SSSIs are located within 2 km of the installation:

- Western Cleddau River SSSI
- Treffgarne Bridge Quarry SSSI

As a Section 28G Authority as defined in the Countryside Rights of Way Act 2000 permitting teams within NRW have a legal duty, under Section 28I of the Wildlife and Countryside Act 1981, to consult with NRW for formal advice when permitting an activity which has been determined to be likely to damage the features of a SSSI.

To determine if consultation is required, a SSSI Assessment was completed. The assessment concluded that the proposed permission is not likely to damage any of the flora, fauna or geological or physiological features which are of special interest.

A copy of the assessment is available to view on the public register, please see here: [PAN-025929 - OGN 231 Appendix 4 SSSI Assessment Form](#)

11.3. Non-statutory conservation sites

A search for relevant non-statutory sites located within 2 km of the installation identified numerous ancient woodland sites. Based upon the information in the application we are satisfied that there will be no adverse impact to the non-statutory conservation sites identified as there is no potential impact pathway from the changes to the permit proposed by the operator.

12. The Permit Conditions

12.1. Updating permit conditions during consolidation

This variation has consolidated (combined) the original permit, subsequent variations, and any other changes to the permit conditions and limits as agreed in writing with NRW since the permit was granted. We have also updated parts of the permit as applied for as part of this variation application and as identified in our permit review.

We have updated and modernised some of the previous permit conditions as part of permit consolidation. Key changes are summarised in the table below:

Condition	Description of change
1.4 and 1.5	Generic condition amended/added to reflect the requirements of the Waste Framework Directive.
2.6.7.	Condition amended to require the operator to submit a CQA Validation report within 4 weeks of completion of the relevant landfill infrastructure construction (as opposed to as soon as practical)
2.7.1	Modernised condition to reflect banned wastes in accordance with current guidance and legislation
2.7.2	Condition added to separately identify the waste types and quantities that can be accepted for restoration.
2.7.7	Drawing reference updated to reference new pre-settlement levels drawings
2.10.2	Revised gas management condition requiring a landfill gas management plan to be in place
3.1.1	Generic condition imposed on all activities to simplify sub-conditions
3.1.6	Revised conditions require hydrogeological risk assessment reviews are submitted 4 years after the granting of the permit and every 6 years following
3.2	Generic condition added to control emissions of substances not controlled by emission limits. Replaces fugitive emissions of substances condition.
3.5.4.	Generic condition added to ensure access to monitoring locations are accessible
3.6.2	Condition added to require a pest management plan should NRW notify the operator that one/an update is required.

4.2.2.	Condition amended to include the requirement fo include level 3 waste validation test results in the annual report
4.2.4	Generic condition added related to quarterly reporting of was accepted and removed from the site
4.2.5	Generic condition added regarding provision of a report to detail measures to prevent or minimise pollution if requested by NRW
4.3.	Generic notifications condition added

The operator has agreed that the new conditions are acceptable.

12.2. Schedule 1 – Operations

Activities

Table S1.1 Activities has been updated to add limits on the primary disposal activity in accordance with modern requirements.

To incorporate the changes proposed in the variation, a Deposit of Waste for Recovery activity (R5 – Recycling/reclamation of other inorganic materials) has been added to the permits Directly Associated Activities list with appropriate limits (activity reference A7).

As part of our review, we have removed storage of waste before disposal (D15) in accordance with our understanding of the current activity. The operator has reviewed this change and is in agreement.

Operating techniques

The operating techniques table (Table S1.2.) lists management plans and techniques the operator should be operating the site in accordance with. The existing list of consolidated operating techniques table was extensive and many plans/techniques are no longer relevant to the activity or have been superseded. We have reviewed the list of operating techniques and noted the ones which are now no longer relevant to the activity. We have also created an archive list so that the main permit table list focuses on more modern operating techniques.

We have added new operating techniques, specifying that the operator must operate the permit in accordance with descriptions in this variation application. These have been detailed throughout this document in the relevant sections. As part of our review,

we have also added in some techniques we have approved outside of the variation, but which are fundamental to the permitted activity.

Improvement program requirements

The improvement program requirements table (Table S1.3) has been reviewed and any complete or superseded requirements have been archived to a separate list.

As part of this variation, we have included new improvement conditions which the operator must address. These have been explained through this document and can be seen in Annex 1.

Pre-operational measures

The pre-operational measures (Table S1.3) has been reviewed and all measures are considered complete or superseded. We have therefore removed these from the main permit but have retained them on a separate list as to retain a record.

Pre-operational measures for future development

The pre-operational measures for future development table (Table S1.4) has been reviewed and any complete or superseded requirements have been archived. Some measures have been updated in order to reflect modern requirements. We have also added new pre-operational measures as part of this variation. These include:

- Updated measures for asbestos disposal including reference to updated guidance;
- Requirement to review groundwater monitoring data before any cell construction in Phase 3; and
- Requirement to provide a CQA plan for the Phase 3 surface water management system before any cells are constructed.

Annual waste input limits

Table S1.5 has been amended to add wastes for restoration and the associated limit (50,000 tonnes / year).

13.2. Schedule 2 – Waste Types

Table S2.1 (Permitted waste types for disposal for non-hazardous waste) has been reviewed and exclusions applied for any wastes containing wood or recyclables in accordance with The Prohibition on the Incineration, or the Deposit in Landfill, of Specified Waste (Wales) Regulations 2023. Any wastes containing asbestos have been removed and put a separate table (Table S2.3. Permitted waste types for disposal in the asbestos cell).

We have added Table S2.1A (Waste types previously permitted for disposal) to record wastes which may have been disposed of in Phase 1. The purpose of this table is to maintain an accurate record of the sites activities and does not permit the disposal of these wastes in any part of the landfill.

Table S2.2 has been added to specify the wastes the operator can use for restoration as per the WRP.

12.3. Schedule 3 – Emissions and monitoring

Changes to permit emission limits and monitoring requirement have been outlined and assessed in section 10. Where we have agreed to those changes, the associated emission table has been updated in the permit.

As part of our permit review, we have added in Table S3.12 'Particulate matter in ambient air – monitoring requirements' which specify air quality monitoring the operator will need to do should they ever deposit asbestos waste.

12.4. Schedule 4 – Reporting

There has been no substantial change to the permit's reporting requirements as part of this variation. We have created an updated suite of reporting forms.

14. OPRA

We have reviewed the OPRA score as part of this variation. The new agreed score is now 227 (was 260). This will form the basis for ongoing subsistence fee's.

ANNEX 1: Pre-Operational Conditions

Table S1.4 Pre-operational measures

Reference	Pre-operational Measures
1-4	Pre-operational measures stipulated prior to the issuing of permit variation EPR/MP3330W/V004 have been consolidated in a separate document referenced 'Table S1.4 and S1.4A Withyhedge Landfill Pre-operational Measures'. These are considered completed (or superseded).

Table S1.4 Pre-operational measures for Future Development

Reference	Pre-operational Measures
1-5, 7, 8	Pre-operational measures for future development stipulated prior to the issuing of permit variation EPR/MP3330W/V004 have been consolidated in a separate document referenced 'Table S1.4 and S1.4A Withyhedge Landfill Pre-operational Measures'. These are considered completed (or superseded).
6	<p>Prior to the construction of a new cell for the deposit of asbestos wastes in Phase's 2 or 3 of the landfill.</p> <p>Detailed construction design proposals shall be submitted for approval and shall include consideration of impact of design upon existing leachate management infrastructure, access to asbestos cell – if across closed cells a review of assumptions made in Stability Risk assessments for closed cells, asbestos waste acceptance and placement methodology and an asbestos monitoring procedure.</p>
9a	<p>Prior to the construction of a new cell for the deposit of asbestos wastes in Phase's 2 or 3 of the landfill.</p> <p>The operator shall review the particulate risk assessment in light of the increased rate of waste deposit and future construction activities and shall submit a written proposal, for approval, for 12 months dust deposition and particulate monitoring along the site boundary to assess impacts from dust with a view to establishing the need for permanent monitoring and particulate emission limits.</p> <p>The proposed plan shall be prepared in accordance with the relevant standards contained within Environment Agency guidance documents:</p> <ul style="list-style-type: none"> • Monitoring emissions to air, land and water (MCERTS): Monitoring guides for air

Table S1.4 Pre-operational measures for Future Development

Reference	Pre-operational Measures
9b	<p>On completion of 9a, the Operator shall submit the particulates risk assessment for approval prior to the commencement of construction of a new cell for asbestos wastes in Phase's 2 or 3 of the landfill.</p> <p>Upon completion of 12 months monitoring data the operator shall review and submit the Agency the particulates risk assessment. The review shall include:</p> <ul style="list-style-type: none">• Quantification of emissions from the site;• Identification of off site receptors and impacts• An assessment of the effectiveness of control measures including a detailed appraisal of alternative control measures; <p>Recommendations, and timetable for implementation, for the establishment of alternative control measures and ongoing monitoring of dust and particulates emissions at the installation where identified as necessary.</p>
10	<p>Prior to the construction of any new landfill cells within Phase 3, the Operator shall undertake a review of groundwater monitoring data to assess if any control measures are required to ensure an unsaturated zone of 1.0m is maintained beneath the base of the engineered lining of the cell.</p> <p>The findings of the review, including the monitoring data and justification for any control measures (or no control measures) shall be documented and submitted within the CQA Plan for the cell. The CQA Plan must be approved by Natural Resources Wales prior to the cell being constructed.</p>
11	<p>Prior to the construction of any new landfill cells within Phase 3 (including any enabling works such as soil stripping), the Operator shall construct a surface water management system capable of effectively managing surface run-off from the whole development area C.</p> <p>A CQA Plan for the surface water management system and its construction should be submitted to Natural Resources Wales. The CQA Plan must be approved by Natural Resources Wales, and the surface water system fully operational prior to the cell being constructed.</p> <p>Alternatively, the Operator should submit evidence to prove that the existing surface water management system for Phase 3 is capable of effectively managing the additional surface run-off.</p>

ANNEX 2: Improvement Conditions

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
1 - 19	Improvement conditions stipulated prior to the issuing of permit variation EPR/MP3330W/V004 have been consolidated in a separate document referenced 'Table S1.3 Wthyhedge Landfill Improvement Conditions'. These are considered completed (or superseded).	-
20	<p>The operator shall review and update its Environmental Management System (EMS) to reflect all the changes introduced by the variation. This includes, but is not limited to, an updated:</p> <ul style="list-style-type: none"> • Landfill Gas Management Plan • Leachate Management Plan • Odour Management Plan <p>The updated EMS shall take into account all relevant guidance and:</p> <ul style="list-style-type: none"> • detail any revised operational procedures and controls • update roles and responsibilities where applicable • include any new monitoring, reporting, or record-keeping requirements and; • include evidence of staff training or awareness related to the changes. <p>The operator shall submit the updated EMS to Natural Resources Wales for approval by the date specified.</p>	<p>Within 6 months of EPR/MP3330WP/V004 permit issue or as otherwise agreed in writing with Natural Resources Wales.</p>
21	The operator shall produce an interim review of the Hydrological Risk Assessment (HRA) for the site.	31st December 2027

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
	<p>The HRA shall take into consideration data gathered following implementation of the new monitoring programme, outlined in 'Hydrogeological Risk Assessment Review (report number 2365r2v2d1025, dated October 2025)</p> <p>The operator should submit the review to Natural Resources Wales for approval.</p>	

ANNEX 3: Consultation Responses

1. Advertising and consultation on the Application

Section 5.1 of this document explains how we have approached the advertising and consultation of this application. Below summarises the responses we received to the consultation and NRW's response to the comments received.

Consultation Responses from Statutory and Non-Statutory Bodies

Response Received from Pembrokeshire County Council - Pollution Control Team	
Brief summary of issues raised:	Summary of action taken / how this has been covered
No objections to the variation providing the Waste Recovery Plan (WRP) is fully implemented and adhered to and waste acceptance protocols are robust and enforced.	<p>Section 8.3 summarises our assessment of the WRP and associated Waste Acceptance Criteria (WAC).</p> <p>The permit variation incorporates the WRP - into the permit and permit's operating techniques. Compliance with the plan will form part of the on-going compliance at the site.</p>
Monitoring commitments should be maintained, particularly for leachate, groundwater, and surface water	The permit contains conditions requiring the operator to carry out monitoring in accordance with the permits schedules and operating techniques. We have assessed the changes to the proposed monitoring program and are in agreement with the changes as discussed in section 10 of this document.
Ground gas monitoring arrangements should be reviewed and retained unless formally varied.	<p>No changes to ground gas limits or monitoring have been proposed as part of this variation.</p> <p>As part of our permit review we have reviewed Table S3.6 'Landfill gas emissions from</p>

	capped surfaces for cells that have accepted non-hazardous biodegradable waste – monitoring requirements’ and have decided to retain the existing permit requirements which are in accordance with current guidance.
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Response Received from Pembrokeshire County Council - Planning	
Brief summary of issues raised (via NRW’s Noise proforma for local authority):	Summary of action taken / how this has been covered
Confirmed that there have been no noise complaints at the site	-
Confirmation the applicant needs to apply for a new planning application	This is not relevant to the permitting decision.

Response Received from Public Health Wales	
Brief summary of issues raised:	Summary of action taken / how this has been covered
No adverse risks to public health is foreseen as a result of the proposed variation to the permit. Strong recommendation for the regulator to be completely satisfied with the proposal.	As summarised in this document, NRW have assessed all aspects of the proposed changes. We are satisfied the proposal meets the requirements of the relevant legislation and guidance.
The proposal to import inert material for restoration should not cause odour issues. Improvements to the site are welcomed. The regulator should ensure activities are well managed and the permit is complied with as to not cause off-site odour issues.	
Any additional information in relation to these comments should be sent for consideration.	Additional information was received throughout the determination but as none of it was relating to specific concerns raised, no further consultation was considered necessary. We will however, notify PHW on our draft decision consultation.

Consultation Responses from members of the public and community Organisations

We received 46 responses from individual members of the public. This included a response sent on behalf of the community campaign group ‘Stop the Stink’. There are common themes to the comments received so we have summarised the key issues raised and our responses to these in the table below.

Response Received from	
Brief summary of issues raised:	Summary of action taken / how this has been covered
<p>Objections to the variation being granted due to concerns relating to Operator competence where the operator:</p> <ul style="list-style-type: none"> • Has a history of previous environmental prosecutions, raising concerns about operator suitability • Is subject to ongoing criminal proceedings for alleged environmental offences (and the application should not be determined until the proceedings are concluded) • Has a poor permit compliance record 	<p>Section 8 of this document explains how we have considered operator competence as part of our determination of this variation application.</p> <p>As explained in that section, our decision to issue this variation is in no way condoning the previous action of the operator and does not bare any influence on any on-going enforcement actions.</p> <p>As part of our permit review, we have specified an improvement condition for the operator to review its entire Environmental Management System and agree this in writing with NRW.</p>
<p>Objections to the permit variation being granted because of the history of odour pollution from the site and the impact this has had on human health.</p>	<p>We acknowledge the impact odour emissions have had on the local community and take this issue seriously. As outlined in Section 10.7, we have assessed the proposed changes and do not anticipate any increased odour risk.</p> <p>The variation includes updated controls to improve site regulation.</p>
<p>Concerns relating to the proposed Waste Recovery Activity, in particular concerns:</p> <ul style="list-style-type: none"> • the increase in waste volume will increase the site's environmental impact • the waste soil will be contaminated (with heavy metals and chemicals including sulphates) • the operator has a poor compliance record with the current permitted waste limits and should not be permitted to accept more waste 	<p>Section 10.6 of this document explains what Waste Recovery Activity is and how we have assessed the operators proposal.</p> <p>As outlined in section 5, and as per the correspondence and notices available on the public register, we requested further information from the operator to support the recovery of waste at the site. This included additional information on the pre-acceptance measures in place to ensure the recovered waste is suitable. We are satisfied with the measures proposed. Conditions have been included in the permit to ensure the operator carries out the activity in accordance with the information specified in the application.</p> <p>The permit variation does not change the permitted limits for waste disposal.</p>
<p>Comments related to it not being made clear in the application that the site is permitted to accept and dispose asbestos waste.</p>	<p>No changes to asbestos waste activities were proposed as part of the operator's variation.</p> <p>However, as part our permit review, we have reviewed and strengthened requirements for asbestos waste acceptance in accordance with</p>

	modern requirements as detailed in this document. This includes updated pre-operational measures the operator will need to comply with should they want to dispose of asbestos waste, and air quality monitoring.
Comments related to NRW's response to the operator's compliance with the permit to date	These comments are not relevant to the decision on this application.
Concerns that the permit variation application should not be determined until the site has had planning permission granted.	Planning and permitting are separate but complementary systems. As per Planning Policy Wales ¹⁶ / PPS23 ¹⁷ , our determination considers only matters within the scope of the Environmental Permitting Regulations. It is the operator's responsibility to ensure all necessary permissions are in place.
Objections to the variation on the basis that the operator should be resolving current issues, not developing the site further.	The variation does not propose any expansion beyond what is already permitted.
Comments relating to the impact on tourism, traffic and visual impacts (including lighting) of the landfill.	These matters are outside the scope of the permitting decision. They may be within the scope of the planning process.
Queries as to what material is being disposed of at the landfill.	There are no changes to the disposal activity as part of this variation. Table S2.1 of the permit outlines the wastes the operator is permitted to dispose at the site.
Comments relating to climate change adaption not being assessed by the operator.	<p>We agree that operators of environmental permits need to carry out a climate change risk assessment because climate change is already increasing the frequency and severity of extreme weather events. We are expecting more intense rainfall and flooding, prolonged heatwaves, drought conditions, sea level rise and tidal surges, as well as stronger storms and a higher risk of wildfires.</p> <p>These changes present significant risks to permitted operations. Without proper planning, extreme weather could lead to non-compliance with permit conditions and/or fugitive emissions.</p> <p>By identifying and assessing climate-related risks, operators can take steps to reduce the likelihood and severity of these impacts. This helps to maintain compliance and protect the environment in the event of a changing climates.</p>

¹⁶ [Planning policy Wales | GOV.WALES](#)

¹⁷ [Planning Policy Statement 23](#)

	As part of on-going work, outside of this permit application, NRW have already issued operator a Regulation 61 Notice ¹⁸ requiring them to provide us with a Climate Change Risk Assessment which we will review once received. This work is ongoing and separate from the current variation.
Queries as to how noise impacts have been considered.	See section 10.8 of this document.
Queries as to whether the new water quality data 2026 will be available for public scrutiny.	Permit condition 4.2.2 requires an annual monitoring report, which will include water quality data. This will be made available on the public register unless subject to commercial confidentiality.
Queries as to if Climate Action Wales being consulted?	Section 5.1 outlines who has been consulted as part of this application. Climate Action Wales has not been consulted.
Comments related to dust from current operation.	Concerns about existing dust emissions should be reported to NRW as an incident.

¹⁸ A Regulation 61 Notice is a formal request issued under Regulation 61 of the Environmental Permitting (England and Wales) Regulations 2016. It allows the Environment Agency (EA) or Natural Resources Wales (NRW) to require an operator to provide specific information related to their environmental permit.