SSSI Assessment for permit/licence and deployment applications	Cyfoeth Naturiol Cymru Natural Resources Wales

Part 1 – SSSI Assessment

1. Permitting officer/team	Jennifer McGuire Lead Specialist Officer, Installation and RSR Permitting Team
2. Permit application reference and site name	PAN-025929 – Withyhedge Landfill
3. a. SSSI name(s) b. location c. NRW Operational Area/Environment Team	Afon Cleddau Gorllewinol / Western Cleddau River SSSI - bordering the site boundary to the north of the site and Treffgarne Bridge Quarry SSSI – 1.5km to the NE of the site Pembrokshire Environment Team
4. Brief description of proposal	Resources Management UK Ltd have submitted an application to Natural Resources Wales (NRW) to change its environmental permit for Withyhedge Landfill (permit number EPR/MP3330WP). The proposed changes include: • Revised final restoration levels • Modified management and monitoring program for groundwater, surface water and leachate • New landfill gas compliance trigger levels

	• The addition of 50,000 tonnes of waste soils per year for restoration work under a new Waste Recovery activity • Consolidation and modernisation of the permit, including a review of existing Improvement Conditions and Pre-operational Conditions

What aspects of the proposed permission are likely to damage the SSSI features of special interest?

Treffgarne Bridge Quarry SSSI

Treffgarne Bridge Quarry is designated for a geological feature, a group of rocks known as the Lingula Flags, which have a widespread distribution throughout Wales. There are no Operations Likely to Damage Special Interest (OLDSI) relevant to the proposed activities at Withyhedge Landfill and it is not considered any of the proposed changes to the permit are likely to cause damage due to there being no potensial for any impact pathways to the site.

Western Cleddau River SSSI

Western Cleddau River SSSI is designated primarily for important populations of otter *Lutra lutra*, bullhead *Cottus gobio*, river lamprey *Lampetra fluviatilis* and brook lamprey *Lampetra planeri.* Special features also sea lamprey *Petromyzon marinus* and its range of river and riverside habitats.

Withyhedge landfill is bordered by Rudbaxton Water, which is a tributary of the Western Cleddau River and forms part of the SSSI. In determining if the proposal is likely to damage the SSSI features of special interest, we have assessed each change proposed and whether there is an impact pathway to the site.

The new restoration levels include the retention of additional waste overtipping from a previous operator and a new restoration design. An impact pathway to the SAC from this change includes changes to slope stability which could cause waste collapses which release waste and/or sediment into the water course.

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 the proposed changes. 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 configerations. The technical review concluded that as the SRA was based on a stepper slopes than the new restoration level is proposing, there is no increased risks arising from changes to slope stability and no further assessment is required. NRW's technical specialists have reviewed the evidence submitted by the applicant and are in agreement.

We have also considered the impact the overtip will have on the liner of the landfill. The Conseptual Site Model (CMS) for the site dentifies the River Rudbaxton as the main environmental receptor of the landfill activity, where groundwater flows beneath the landfill through bedrock and flows into the Rudbaxton Water. Any changes which pose a risk to the integrity of the landfill liner could lead to an increased risk of

leachate migration. The operator has assessed the original assessment 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. Detailed assessment carried out by way of assessing the acceptable strain limits indicated by the individual cell cylinder tests concluded that the additional pressure is still within the acceptable strain limits. New cylinder tests were also carried out, with conclusion supporting the lining as being sufficient to withstand the increased load.

NRW 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
- The leachate re-circulation system is being removed

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

Our assessment has concluded that there is no impact pathway to the site as a result of this change.

Modified management and monitoring program for groundwater, surface water and leachate

As discussed above, The Conseptual Site Model (CMS) for the site dentifies the River Rudbaxton as the main environmental receptor of the landfill activity. The permit includes limits on leachate levels, groundwater quality and surface water quality to protect this receptor. Any changes to these could have an impact on the SAC by reducing the level of protection granted by these. However, the applicant has provided a Hydrogeological Risk Assessment Review (HRAR) which justifies every change in limit and monitoring regime proposed. NRW's technical specialist have reviewed the HRAR, and additional information submitted in response to information requests, and are in justification provided for the changes proposed. From the information provided, we are satisfied the new permit limits and monitoring requirements remain protective of the Rudbaxton Water. A detailed description of all the permit's limits and monitoring changes and our assessment is available in the decision document accompanying the permit variation.

The variation is also update the surface water management system, including the details of a new Phase 2 surface water collection system. The system protects the water course by receiving any rainfall run-off from the landfill and providing sufficient retention time to allow settlement of suspended solids before the run-off is discharged to the Rudbaxton Water. We have reviewed the updated information provided and are satisfied the surface water management system is sufficient to prevent the ingress of sediment into Rudbaxton Water. Full details of the new system and our assessment can be found in the decision document accompanying the variation. A pre-operational measure for future development has been imposed, requiring the operator to confirm the surface water management system design for Phase 3 before any landfill cells are constructed.

We have decided to remove the limits on the flow rate from the discharge points from the surface water ponds from the permit as part of a regulator initiated change. 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. This variation does not remove the requirement to monitor and report on the water quality of the discharges.

New landfill gas compliance trigger levels

There is no anticipated impact pathway anticpated from changes relating to landfill gas monitoring.

The addition of 50,000 tonnes of waste soils per year for restoration work under a new Waste Recovery activity

Potential risks to the adjacent watercourse from the proposed waste recovery activity primarily relate to the mobilisation of particulates or contaminants from restoration soils. However, the applicant has outlined a comprehensive surface water management system designed to intercept and control any such mobilised materials. This system includes regular monitoring of surface water quality, with thresholds set within the permit to trigger intervention if necessary. Furthermore, only inert soils will be used in the restoration process, and their quality will be assured through a Construction Quality Assurance (CQA) protocol.

Our assessment has concluded that there is no impact pathway to the site as a result of this change

Consolidation and modernisation of the permit, including a review of existing Improvement Conditions and Pre-operation Conditions

There is no impact pathway anticipated impact from this change which is mainly administrative.

5. Summary of any informal advice received from internal experts (if required and including pre-app advice)	N/A – filed for audit
6. Recommendation	The proposed permission is **not likely to damage** any of the flora, fauna or geological or physiological features which are of special interest.
7. Signature and date assessment made	Jennifer McGuire 18/09/2025
8. Officers name and job title	Jennifer McGuire Lead Specialist Officer