

14050/LW

26 November 2025

Natural Resources Wales
Maes Newydd
Llandarcy
SA10 6JQ

For the attention of Harriet Power

Planning Application: P2022/0589 – Earlswood Depot, Jersey Marine

We write further to regulatory response received from Natural Resources Wales (NRW) Planning Department Ref. CAS-289935-L3M0 dated 3rd November 2025 relating to planning application P2022/0589 and provide the following further information to the queries raised.

For ease of reference below we have cited the original queries in italics.

Please note that this response should be read in conjunction with Revision B of the Supplementary Site Investigation Report and Controlled Waters Risk Assessment, Report No. 14050/LW/25/SSI/RevB dated November 2025.

Conceptual Site Model:

We generally agree with the inferred conceptual site model. We note there is some discussions with regards to groundwater flow. Based on the monitoring levels provided, we have inferred an approximately southerly flow towards River Neath.

We note that there are two surface water sample locations. The report refers to an up and down gradient surface water sample location. We would consider both surface water sample locations depicted within the figures section of the appendices as downgradient sample points.

Access to the River Neath to safely obtain water samples was limited. Due to the physical access restrictions and health and safety concerns, sampling points were limited to those shown on Figure 2a of the report.

As stated above by NRW, an approximately southerly flow direction has been inferred. When considering the sample locations, the location of the site, and the inferred southerly flow direction, whilst not significantly up gradient of the site, sample RMD01 is more down gradient than sample RSC01 and was the best that could be safely obtained.

Data Analysis, Limits of Detection and Water Quality Standards Discussion:

Interpretation of environmental monitoring data for PFAS is difficult given that published limits for environmental exposure are limited as are laboratory analysis techniques with differing limits of detection. Integral Geotechnique have provided a sensible and risk-based discussion about the laboratory limit of detections available to their sample analysis and use of water quality standards.

We note that soil analysis have been assessed with regards to the risk to human health. We would welcome some discussion in relation to what sort of concentrations of PFAS and the properties of PFAS in soils may be an indicator for presenting a risk to controlled waters. This would help our understanding as to whether the soils within the site boundary are considered an ongoing source of PFAS contamination.

Long chain PFAS compounds such as PFOS, PFOA, PFHxS and the 6:2FTS and 8:2FTS precursors within soils are less mobile and have a stronger adsorption to soil and organic matter. Therefore, whilst they may still leach and be transported within water, the potential risk decreases with higher organic carbon concentrations. The soils at the site have organic carbon concentrations of typically 3.0 to 4.5% which is considered to be moderate to relatively high meaning the soils have a good capacity to sorb PFAS, especially the longer chain compounds like PFO, PFOA, PFHxS and the 6:2FTS and 8:2FTS precursors.

Currently there are no published soil thresholds in England and Wales that are explicitly derived for the soil to groundwater pathway.

In the absence of such published soil thresholds, the risk to groundwater should be evaluated from a site-specific source-pathway-receptor model as demonstrated within the Supplementary Site Investigation Report and Controlled Waters Risk Assessment.

As discussed within Supplementary Site Investigation Report and Controlled Waters Risk Assessment, Report No. 14050/LW/25/SSI/RevB dated November 2025, the PFAS concentrations above the laboratory limit of detection were limited to one location on site only, WS201 within the made ground.

The detected concentrations are considered to be low and reflective of the site history of the storage of PFOS containing AFFF.

Within the site, the underlying made ground is encapsulated below thick hardstanding in an overall good condition or the training facility building itself, and the site is served by formal drainage. Additionally, as discussed previously, water used in the new training facility is recirculated. It is therefore considered that the potential for water infiltration into the ground, and subsequent leaching of PFOS from the made ground and the potential for vertical migration to impact on the underlying groundwater is considered to be low.

Considering the above, the following conclusions can be made:

- Concentrations of PFAS in soil limited to one location only,
- Infiltration into the ground reduced by site surface hardstanding and formal drainage,
- Moderate to high organic carbon content in soils will sorb long chain PFAS and limit/slow migration.

It is therefore considered that the site soils do not present a significant source of ongoing PFAS contamination.

We welcome the discussion with regards to the use of WQS for PFAS compounds, we note Integral Geotechnique have not however set out the WQS used for the other contaminants of concern. We advise these are included within the report for completeness.

Discussion of the WQS used for the contaminants of concern are outlined in Section 6.5 of Revision B of the Supplementary Site Investigation Report and Controlled Waters Risk Assessment.

Input Parameters:

Table 6 provides a summary of input parameters. This appears incomplete. Some of the sensitive input parameters and their sources are not discussed such as half-life and decay rate of contaminations of concern. We advise that a comprehensive summary table is provided for the input parameters of contaminants of concern being assessed.

Table 6 has been updated within Revision B of the report, to include the half-life of the contaminants. It should be noted the decay rate is calculated within the RTM worksheets from the half-life parameter, but has also been summarised in the updated Table 6.

Table 6 suggests the aquifer material is a silty clay, the borehole logs provided however show the groundwater body sitting within fine to coarse sand. We therefore require some discussion as to whether the parameters used are fit for purpose.

The aquifer material parameters are based on silty clayey fine to coarse sand material. The updated Revision B of the supplementary site investigation report and controlled waters risk assessment now includes a sensitivity analysis of the parameters used within the original model and alternative parameters based on coarser aquifer material.

With regards to compliance points, please refer to the following guidance: Land contamination groundwater compliance points: quantitative risk assessment - GOV.UK. Note that a default compliance point of 50m should be adopted for hazardous substances. This is applicable to PFAS compounds.

The updated Revision B of the Supplementary Site Investigation Report and Controlled Waters Risk Assessment now includes an additional compliance point of 50m for the hazardous substances.

Please provide some clarification around the target concentrations used within the Remedial Targets Methodology (RTM). Some target concentrations within the sheets provided in Appendix L don't correspond to the water quality standards proposed for use e.g. The PFOS target concentration is 0.0003ug/l however the report proposed to use the EQS annual average of 0.003ug/l.

The RTM worksheets have been double checked and the target concentrations are consistent with proposed water quality standards stated within the report.

Conclusion

To reiterate the conclusions made within Revision B of our report, it is considered that since the PFAS containing materials are no longer used/stored on site, the site benefits from existing hardstanding with formal drainage and the new training facility encapsulates and recirculates water, reducing infiltration into the ground, that all reasonable and practicable measures have been taken to minimise/reduce the impact on controlled waters.

Given the extremely low concentrations of PFAS compounds recorded, and as described above, the existing mitigation measures in place to limit and prevent entry of water into the ground, and any subsequent generation of leachate, physical remediation works are not only considered impractical but also unlikely to be achieved at reasonable cost, if remediation of such low levels of PFAS is even possible.

Therefore, taking all factors into consideration, the overall potential risk to controlled waters is considered to be low and no further remedial works are required.

We trust the above and enclosed are to your satisfaction. However, if you have any queries or require any further information, please do not hesitate to contact us.

Yours faithfully,

L. Williams

Lowri Williams

For

Intégral Géotechnique (Wales) Limited