

Quality of discharge water

The site has been subject to intrusive ground investigation works, conducted by Terrafirma in 2019 with subsequent interpretation by WSP.

The reports describe a site wide investigation of soil and controlled water conditions.

The ground investigation report included a contamination risk assessment supported by laboratory analysis of several samples collected from the soil and groundwater. The assessment indicated that there were no exceedances of residential General Acceptance Criteria (GACs) detected in soil samples taken during the investigation.

Soil leachate, groundwater and surface water analysis identified metal concentrations elevated above their relevant water quality standards (WQS) however, these elevated concentrations were considered to represent background concentrations. Therefore, WSP concluded that risks to groundwater and surface water were considered to be low.

To further assess this risk and to confirm the likely absence of specific substances within any potential discharge from the site, RSK attended site on 13 January 2026 to obtain additional surface water samples.

Advice received previously from Senior Permitting Officers is that *'in cases where it is not possible to test the final effluent, groundwater samples or water samples from on-site excavations / attenuation basins (or similar) would likely represent a suitable alternative'*. The site was pre-construction stage and as such, there was no 'effluent' (rainfall dependent surface water run off generated during the construction process) to sample and test. Therefore, an existing on-site pond was sampled and two samples from the receiving surface water course (Nant y Draenog upstream and downstream of the pond) were also scheduled for an appropriate suite of analysis.

The results of the analysis were assessed against environmental quality standard (EQS) presented in "The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015. Prior to the screening assessment, the bioavailability of certain metals (copper, zinc, manganese, and nickel) was determined using the metal bioavailability assessment tool (M-BAT).

The key output of the M-BAT tool is to estimate the bioavailable concentration of a metal under the surface water conditions found at a site, which can then be compared with the EQS_{bioavailable} to assess compliance. Chemical values for DOC, pH and calcium are required in the receiving watercourse to calculate the site-specific bioavailability of metals. The M-BAT tool was used to derive site-specific Predicted No-Effect Concentration (PNEC) values which replace the EQS for screening purposes.

The results of this assessment found that there were no exceedances of EQS / PNEC values for any potential contaminants of concern, with the exception of manganese within the existing pond which is likely to be associated with anaerobic conditions within the stagnant pond and / or agricultural runoff from the surrounding fields. It is understood that as part of the drainage strategy for the site, the water in the existing pond is being pumped out / removed and the pond is being extended / deepened to form Basin L. On this basis and given

the conclusions of the previous WSP interpretive report, risks to controlled waters are considered to be low and there will be no specific substances in any discharge from the site during the construction phase.

Consequently, the principal contaminant to surface waters is considered to be from mobilised silt (suspended solids), during surface water runoff, associated with exposed soils during the enabling and construction phases of the development.

It should be noted that the following two factors could influence the potential concentration of suspended solids within run-off prior to treatment. These include:

- Amount of exposed sediment available for mobilisation; and
- The volume of rainfall which generates site surface water drainage.

Regular sampling and monitoring will be undertaken at the designated discharge points to ensure the treatment is successful and that suspended solids have been removed such that the water is below the compliance limit of 40 mg/l.