

Natural Resources Wales permitting decisions

Bespoke permit

We have decided to grant the permit for Glyn Rhonwy Pumped Hydro Storage Facility operated by Snowdonia Pumped Hydro Limited.

The permit numbers are EPR-AB3392CJ & EPR-AB3392FB.

The discharge is for the dewatering and operational activities at the site, which allow for the generation of hydroelectric power at Glyn Rhonwy.

Permit to regulate discharges as a result of dewatering activities

To allow construction of the hydroelectric storage facility, two quarries at Glyn Rhonwy will need to be fully dewatered. The water from Quarry 1 (Q1) will discharge to the Nant y Betws at SH 55110 59660, and the water from (Quarry 6) Q6 will discharge to Llyn Padarn at SH 57290 61190.

Q1 holds 5,000m³ of water, and releases of water will be pumped at a maximum rate of 0.6m³/second. Groundwater/water from the lower strata of Q1 will pass through a settlement system or sediment trap prior to reaching the watercourse.

Q6 holds approx 50,000m³ of water. The application states a maximum discharge at a rate of 1000l/s. Due to the amount of spoil that could be saturated, the volume has been doubled to represent a worst case scenario of 100,000m³. The full volume of water will require removing to allow for construction activity. Q6 has the potential to contain unexploded ordnance.

Permit to regulate discharges as a result of operational activities

The proposed hydro storage facility will result in the creation of two water reservoirs. This permit regulates 4 activities:

- Spillway operation at Quarry 1 (Q1)
- Spillway operation at Quarry 6 (Q6)
- Relief valve operation at Q1
- Relief valve operation at Q6

When the scheme is operational, it is not intended to release any significant volume of water from Q1 or Q6. That is, the scheme should operate entirely separately from the wider water environment. The primary mechanism for drawdown of Q1 is via the penstock to Q6, and vice versa for the drawdown of Q6.

The relief valve from Q1 to Nant y Betws, and from Q6 to Llyn Padarn would only be used where:

- i) The penstock is unavailable, and there is a need to lower the water level behind the dam.
- ii) Maintenance as required, as per dam safety legislation.

Both the Q1 and Q6 spillway are only expected to discharge to the Nant y Betws and Llyn Padarn (respectively) after a long period of no operational activity where the water then reaches the spill level.

The need for a spillway at both reservoir is a requirement as per the Reservoirs Act.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

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
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Structure of this document

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation, web publicising and newspaper advertising responses

Key issues of the decision

Natural Resources Wales have decided to grant the (applied for) permissions to Snowdonia Pumped Hydro Limited on the basis that the conditions outlined within the environmental permits are adhered to. These conditions include – but are not limited to - the following:

Permit ref EPR-AB3392CJ

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

Table S1.1 Activities		
Activity reference	Description of activity	Limits of specified activity
A1	Discharge of trade effluent consisting of excavated groundwater and surface water run off from Q1 via outlet 1	N/A
A2	Discharge of trade effluent consisting of excavated groundwater and surface water run off from Q6 via outlet 2	N/A

2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by Natural Resources Wales.

Table S1.2 Operating techniques			
Activity reference	Description of documentation	Parts	Date Received
A1 & A2	Application	<ul style="list-style-type: none"> • Part A • Part B2 • Part B6 • Part F2 	08/09/2016
	Supporting documents and plans	<ul style="list-style-type: none"> • App B Nant y Betws Flood Risk • App C Water Management Plan • App D Silt Management Plan • App E Dewatering Environment Management System • App F Habitats Risk Assessment • App G Risk Assessment • App H H1 Assessment • App I WFD Addendum • App J Biosecurity • App L Code of Construction Practice • App M Ordnance Management Strategy 	08/09/2016

3.1.1 There shall be no point source emissions to water except from the sources and emission points listed in schedule 3.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.3.1 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by Natural Resources Wales.

Table S3.1 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements

Discharge source and discharge point ref. & location	Parameter	Limit (including unit)	Reference Period	Limit of effective range	Monitoring frequency	Compliance Statistic
Trade effluent consisting of excavated groundwater and surface water via outlet 1	Suspended solids (measured after drying at 105° C)	50 mg/l	Instantaneous (spot sample)	N/A	N/A	Maximum
	pH	6 to 9	Instantaneous (spot sample)	N/A	N/A	Minimum and maximum
	Visible oil or grease	No significant trace present	Instantaneous (spot sample)	N/A	N/A	No significant trace
Trade effluent consisting of excavated groundwater and surface water via outlet 2	Suspended solids (measured after drying at 105° C)	50 mg/l	Instantaneous (spot sample)	N/A	N/A	Maximum
	pH	6 to 9	Instantaneous (spot sample)	N/A	N/A	Minimum and maximum
	Visible oil or grease	No significant trace present	Instantaneous (spot sample)	N/A	N/A	No significant trace

Table S3.2 Discharge points			
Effluent Name	Discharge Point	Discharge point NGR	Receiving water/Environment
Trade effluent consisting of excavated groundwater and surface water	Outlet 1	SH 55110 59660	Nant y Betws
Trade effluent consisting of excavated groundwater and surface water	Outlet 2	SH 57290 61190	Llyn Padarn

Table S3.3 Monitoring points			
Effluent(s) and discharge point(s)	Monitoring type	Monitoring point NGR	Monitoring point reference
Trade effluent consisting of excavated groundwater and surface water via outlet 1	Effluent sample point	SH 55105 59937	Q1
Trade effluent consisting of excavated groundwater and surface water via outlet 2	Effluent sample point	SH 56766 60993	Q6

Permit ref EPR-AB3392FB

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

Table S1.1 Activities		
Activity reference	Description of activity	Limits of specified activity
A1	Discharge of trade effluent consisting of abstracted water and rainfall via the spillway at outlet 1	n/a
A2	Discharge of trade effluent consisting of abstracted water and rainfall via the spillway at outlet 2	
A3	Discharge of trade effluent consisting of abstracted water and rainfall via the relief valve at outlet 1	
A4	Discharge of trade effluent consisting of abstracted water and rainfall via the relief valve at outlet 2	

2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by Natural Resources Wales.

Table S1.2 Operating techniques			
Activity reference	Description of documentation	Parts	Date Received
A1, A2, A3 & A4	Application Forms	<ul style="list-style-type: none"> • Part A • Part B2 • Part B6 • Part F2 	08/09/2016
	Supporting documents and plans	<ul style="list-style-type: none"> • App B Excess water management strategy • App C Environment Management System • App D Risk Assessment • App E H1 Assessment • App F Biosecurity Plan • App G Habitats Risk Assessment • App H WFD Addendum 	

- 3.1.1 There shall be no point source emissions to water except from the sources and emission points listed in schedule 3.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.3.1 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by Natural Resources Wales.

Table S3.1 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements							
Activity reference	Discharge source and discharge point ref. & location	Parameter	Limit (including unit)	Reference Period	Limit of effective range	Monitoring frequency	Compliance Statistic
A1	Discharge of trade effluent consisting of abstracted water and rainfall via the spillway at outlet 1	Suspended solids (measured after drying at 105° C)	50 mg/l	Instantaneous (spot sample)	N/A	N/A	Maximum
		pH	6 to 9	Instantaneous (spot sample)	N/A	N/A	Minimum and maximum
		Visible oil or grease	No significant trace present	Instantaneous (spot sample)	N/A	N/A	No significant trace
A2	Discharge of trade effluent consisting of abstracted water and rainfall via the spillway at outlet 2	Suspended solids (measured after drying at 105° C)	50 mg/l	Instantaneous (spot sample)	N/A	N/A	Maximum
		pH	6 to 9	Instantaneous (spot sample)	N/A	N/A	Minimum and maximum
		Visible oil or grease	No significant trace present	Instantaneous (spot sample)	N/A	N/A	No significant trace

Table S3.1 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements

Activity reference	Discharge source and discharge point ref. & location	Parameter	Limit (including unit)	Reference Period	Limit of effective range	Monitoring frequency	Compliance Statistic
A3	Discharge of trade effluent consisting of abstracted water and rainfall via the relief valve at outlet 1	Suspended solids (measured after drying at 105° C)	50 mg/l	Instantaneous (spot sample)	N/A	N/A	Maximum
		pH	6 to 9	Instantaneous (spot sample)	N/A	N/A	Minimum and maximum
		Visible oil or grease	No significant trace present	Instantaneous (spot sample)	N/A	N/A	No significant trace
A4	Discharge of trade effluent consisting of abstracted water and rainfall via the relief valve at outlet 2	Suspended solids (measured after drying at 105° C)	50 mg/l	Instantaneous (spot sample)	N/A	N/A	Maximum
		pH	6 to 9	Instantaneous (spot sample)	N/A	N/A	Minimum and maximum
		Visible oil or grease	No significant trace present	Instantaneous (spot sample)	N/A	N/A	No significant trace

Table S3.2 Discharge points			
Effluent Name	Discharge Point	Discharge point NGR	Receiving water/Environment
A1: trade effluent consisting of abstracted water and rainfall via the spillway at outlet 1	Q1	SH 55110 59660	Nant y Betws
A2: trade effluent consisting of abstracted water and rainfall via the spillway at outlet 2	Q6	SH 57290 61190	Llyn Padarn
A3: trade effluent consisting of abstracted water and rainfall via the relief valve at outlet 1	Q1	SH 55110 59660	Nant y Betws
A4: trade effluent consisting of abstracted water and rainfall via the relief valve at outlet 2	Q6	SH 57290 61190	Llyn Padarn

Table S3.3 Monitoring points			
Effluent(s) and discharge point(s)	Monitoring type	Monitoring point NGR	Monitoring point reference
trade effluent consisting of abstracted water and rainfall via the spillway at outlet 1	Effluent sample point	SH 55105 59937	A1
trade effluent consisting of abstracted water and rainfall via the spillway at outlet 2	Effluent sample point	SH 56766 60993	A2
trade effluent consisting of abstracted water and rainfall via the relief valve at outlet 1	Effluent sample point	SH 55105 59937	A3
trade effluent consisting of abstracted water and rainfall via the relief valve at outlet 2	Effluent sample point	SH 56766 60993	A4

Internal Consultation

As per NRW's determination process, an internal consultation was circulated to all relevant technical specialists. Their comments are available below:

Environment Management comments:

PAN-000733

Q6 dewatering needs to be at such a rate so as not to cause disturbance. Any discoloration /suspended solids disturbed from the lake bed will be highly visible. Any suspended solids discharged from Q6 will also be highly visible. Any mobilisation of slate fines from Q1 or Q6 may result in an increase in metal concentrations markedly higher than those in the H1 screening. Specifically, Cu, Zn, Ni and most notably Al. I note there are no EQS values for Al. Note that P does not screen out of H1. Padarn had a significant Blue green algae outbreak in 2009. The EMS for the permit appears to show adequate control measures in Sections 3.3.5, 3.4.5, 3.4.6. However, for 3.8.2. SPH should make it clear what temporary environmental permits means.

PAN-000734

No specific comments.

Date: 18/10/16

Biodiversity comments:

NRW have considered a wide range of potential impacts on terrestrial a freshwater Biodiversity as a result of the application for discharge consent into Llyn Padarn and into the Nant y Betws.

Both receptors are considered to be highly sensitive areas, and both discharges affect aquatic SSSIs immediately or downstream, whilst the Nant y Betws eventually flows into a Natura 2000 SAC site.

The information provided by the applicant has reassured NRW that there should not be an adverse or significant impact on the receiving waterbodies as a result of us granting these permits through either (a) deterioration in water quality and (b) changes in flow quantity, both in relation to de-watering for the construction phase and then excess water release in the scheme operational phase.

Llyn Padarn SSSI

In particular, NRW considered the potential for contamination of Llyn Padarn by the release of nutrient rich (phosphate contaminated) water through the temporary or permanent (scheme operating) infrastructure. The programme of sampling and control measures in place have been considered alongside the numerous other documents submitted by the applicant. This conclusion applies to the other potential contaminants identified in the applicant's thorough baseline studies of the Glyn Rhonwy site.

NRW also considered the potential for adverse changes in lake temperature as a result of granting the Environmental Permit. Again, the documentation provided by the applicant indicates this will not be an adverse impact.

The excess water strategy reassured NRW that no scouring / flooding impact would be an issue.

Species of particular concern in considering Llyn Padarn were Arctic char, Floating water-plantain and the Atlantic salmon spawning area at Penllyn.

Afon Gwyrfai and Llyn Cwellyn SSSI and SAC

The main concerns here were the potential for importation of non-native invasive species from the Llyn Padarn catchment. Although no non-native invasive species of concern are currently in Llyn Padarn, the high recreational boating and watersport activity on Padarn presents an increased risk pathway for the importation of invasive invertebrates or plants into that site from elsewhere e.g. through wet uncleaned wetsuits, wet bilges etc. Although the applicant would not be responsible for this happening, should an invasive non-native species become established in Llyn Padarn, then there would be a significant risk that SPH operational activities (pump storage water transfer and then subsequent release in the Nant y Betws) could cause cross-catchment transfer of invasives. We are satisfied that the applicant's relevant documentation relating to invasive species does address these theoretical risks and that an effective response mechanism to control that risk has been outlined.

NRW also considered the potential for release of water into the Nant y Betws to cause scouring of that watercourse and for an adverse impact on aquatic habitat, some of which probably supports N2K features (Atlantic salmon / European otter). Again, NRW were satisfied that the information provided by the applicant was robust in showing that there should be no adverse impact.

NRW had some concerns that the release of poor water quality water during dewatering / scheme construction may also have an impact. Information and undertakings provided by the applicant (incl the CEMP and monitoring / mitigation) have given NRW confidence that there is no likely impact.

Date: 31.10.16

Geoscience Response:

Given that the dewatered waters are to be discharged to surface waters rather than ground, then Geoscience does not have any major concerns.

There is a potential for contamination to exist (particularly in Q6) as a result of the historic use of the site. Quarry 6 was used by the MoD to store and demolish ordnance. It is possible that the dewatering of Q6 could disturb potentially contaminated sediment, which could contaminate Llyn Padarn directly (sediment loading) and/or by causing contaminants to be leached back into the water as the sediment is agitated. While it is not our role in Geoscience to set the parameters for the discharge permit, we would advise that the contaminants that could potentially arise from the previous use of the site should be included or considered.

The DoE Industry Profiles on "Engineering Works: mechanical engineering and ordnance works", and also "Chemical Works – explosives, propellants and pyrotechnics manufacturing works" provide some useful guidance on chemicals associated with ordnance.

For information, we previously advised on the analytical suite that was proposed for the water quality monitoring that was carried out by the applicant to establish baseline conditions and gather information for the previous permit application. We advised that cyanide, magnesium and phosphorus be added to their proposed analysis at the time.

Date: 20/10/16

Flood Risk Management:

With regards to flood risk associated with both the dewatering (construction) activities and the operational activities, we note and agree with the content of the Technical Note (hydrology & Flood Risk- Nant Y Betws- Job No. 60334725) submitted in support of the applications. We note and support the statement –

“...Operational conditions will be in place for the operation of the scheme, and also for the dewatering phase prior to construction, to prevent release of water to the Nant y Betws during times of flood or high flow in the watercourse....”

Rates released to the Nant y Betws catchment should not exceed 0.6m³/s to ensure that the watercourse (and associated structures) are not overloaded.

The rates released to Llyn padarn are expected to be <1.0m³/s (section 3.1.2 of supporting document number (EPR/YB3190HR/A001)) and as such we would tend to agree with the statement that any increased flood risk downstream is negligible.

We are therefore generally satisfied with the documents submitted in support of the application with regards to Flood risk.

Date: 24/10/2016

Annex 1: decision checklist

This checklist should be read in conjunction with the Duly Making checklist.

Aspect	Justification / Detail	Criteria met
		Yes
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Responses to consultation, web publicising and newspaper advertising	The web publicising, consultation and newspaper advertising responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
Operator		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application.	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility including discharge points. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓
Biodiversity, Heritage, Landscape and Nature Conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat . A full assessment of the application and its potential to affect the site, protected species and protected habitats has been carried out as part of the permitting process. We consider that the application may affect the features	✓

Aspect	Justification / Detail	Criteria met						
		Yes						
	<p>of the site, protected species and protected habitat. Operational controls and relevant limits have been placed on the permit to mitigate against these effects.</p> <table border="1"> <tr> <td>Suspended solids (measured after drying at 105° C)</td> <td>50mg/l</td> </tr> <tr> <td>pH</td> <td>6 to 9</td> </tr> <tr> <td>Visible oil or grease</td> <td>No significant trace present</td> </tr> </table> <p>Formal consultation has been carried out with Gwynedd and Ynys Môn Natural Resources Management Team. The consultation responses (Annex 2) were taken into account in the permitting decision.</p>	Suspended solids (measured after drying at 105° C)	50mg/l	pH	6 to 9	Visible oil or grease	No significant trace present	
Suspended solids (measured after drying at 105° C)	50mg/l							
pH	6 to 9							
Visible oil or grease	No significant trace present							
Environmental Risk Assessment and operating techniques								
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p>	✓						
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. The proposed techniques / emission levels for priorities for control are in line with the benchmark levels contained in the TGN and we consider them to represent appropriate techniques for the facility.</p>	✓						
The permit conditions								
Incorporating the application	<p>We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.</p> <p>These are specified in the Operating Techniques table in the permit.</p>	✓						
Emission limits	<p>We have decided that emission limits should be set for the parameters listed in the permit.</p> <p>It is considered that the numeric limits described below</p>	✓						

Aspect	Justification / Detail	Criteria met
		Yes
	<p>will prevent significant deterioration of receiving waters. We have imposed numeric limits because either a relevant environmental quality or operational standard requires this.</p> <p>We have included a 50mg/l Suspended Solid limit on both permits. This limit was agreed by the local NRM Officer and Biodiversity Team Leader, and is based on the Suspended Solids limit for the nearby Llanberis Wastewater Treatment Works (permit ref: EPR-DB3590HX).</p> <p>The H1 risk assessment can be used to assess the impact of hazardous pollutants released within discharges to surface waters. The applicant completed and submitted the risk assessment alongside their application.</p> <p>We are satisfied with the conclusions that no hazardous substances are present within the waterbodies, based on the information provided to us.</p>	
Monitoring	We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods and to the frequencies specified.	✓
Operator Competence		
Environment Management System	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

Annex 2: Consultation, web publicising and newspaper advertising responses

As per NRW's determination process, the applications have been advertised on the external webpage, and in the local newspaper (see below).

The applications underwent formal consultation both internally and externally (see below).

	Date published/sent	Date comments/responses received
Bilingual advert published on the NRW external web page for a period of 28 days	12/10/2016	Various dates between 12/10/2016 - 09/11/2016
Bilingual advert published in the Denbighshire and Caernarfon Herald	12/10/2016	Various dates between 12/10/2016 - 09/11/2016
Applications sent for internal consultation with relevant technical specialists	10/10/2016	24/10/2016
Applications sent for external consultation with Environmental Health	27/10/2016	25/11/2016
Applications sent for external consultation with Ministry of Defence	31/10/2016	31/10/2016
Applications sent for external consultation with Snowdonia National Park	27/10/2016	10/11/2016
Applications sent for external consultation with Dŵr Cymru Welsh Water	26/10/2016	Refers to comment received in response dated 22/03/2016

Response received from

Public Health Wales

Brief summary of issues raised

"Provided the operations are undertaken in accordance with the management plans and controls defined within the application we have no grounds for objection based upon the public health."

Summary of actions taken or show how this has been covered

No action required.

Response received from

Ministry of Defence

Brief summary of issues raised

"I checked with our Explosive Ordnance Disposal (EOD) people and they can confirm that there have been no tasks to this area since April 2016. This in addition to the earlier confirmation that there have been no EOD tasks in the area from April 2014 to April 2016.

Just to repeat the caveat on the previous reply, this response does not negate the possibility of any unexploded ordnance being in the area as no formal clearance has been requested or carried out and therefore this response should, in no way, be taken as any form of statement that the area is clear of explosives."

Summary of actions taken or show how this has been covered

An investigation for unexploded ordnance (UXO) is proposed by the applicant. This UXO investigation is expected to be carried out in advance of the standard land contamination (LC) investigation. The desk study, which looks at what was used and/or disposed of at the site, should inform what the UXO investigation should include. It is not our remit to comment on the appropriateness of the UXO investigation, as this is a matter for the Planning Inspectorate. It is important to note that the findings of the UXO investigation could impact on the content of the standard LC investigation.

Response received from

Snowdonia National Park

Brief summary of issues raised

No concerns due to the proposed activity taking place outside of the boundary of the National Park.

Summary of actions taken or show how this has been covered

n/a

Response received from

Dŵr Cymru Welsh Water

Brief summary of issues raised

Highlighted the need for a Water Monitoring Plan, encompassing additional monitoring requirements should it be needed i.e. in the case of a pollution incident.

Summary of actions taken or show how this has been covered

The requirement to implement an appropriate Water Monitoring Plan prior to any discharge is conditioned within the environmental permit.

Representations to the web and newspaper advert

Both applications were published on the 12th October 2016. The adverts appeared in the Caernarfon and Denbigh Herald for one day, and on the NRW external website for the period of 28 days.

The full application, including supporting documentation was available to all interested parties via an online sharing system .

A total of 12 representations were received.

The following detail was published on the external website, and distributed to all individual who had submitted representations to the applications. The

document summarised the key points raised during the 28 day representation period. (The format of the doc has been changed to suit this Decision Document).

Responding to your representations December 2016

Snowdonia Pumped Hydro's Permit Applications for a proposed pumped storage scheme in Glyn Rhonwy; The aim of this document is to answer concerns submitted as part of the public consultation, as a result of the publication advertising the scheme (October 2016)

The document is summarised to provide a consolidated response. Please note: Natural Resources Wales are still undertaking technical determination of the applications. We are yet to conclude our decision.

Concerns surrounding recreation and amenity at Llyn Padarn

Natural Resources Wales (NRW) are very aware of the importance of Llyn Padarn for the wellbeing of the community around it. Ensuring that there is no deterioration in the water quality, ecology and recreational value of the lake is a key consideration during the determination process.

Whilst there may be short term disruption to recreational activities as part of the construction of this scheme, this is a matter for the Planning Authority. NRW would need to be satisfied that there will be no long term adverse impact on recreation should we decide to issue the Environmental

Permits. This includes craft based and immersive water sports. NRW is of the opinion that there is no potential for the outlet pipe, being several metres beneath the water surface, to adversely impact swimmers' safety or recreational use of the lake. Again, this has been addressed via the Planning Consent process.

Concerns surrounding potential munitions and unexploded ordnance

NRW has read the applicant's submission regarding this matter and believe they have provided a robust and risk-based assessment of the situation. The applicant has proposed an additional investigation into unexploded ordnance (UXO).

This UXO investigation is expected to be carried out in advance of the standard land contamination investigation. It is not NRW's remit to comment on the appropriateness of the UXO investigation. However, it is important to note that the findings of the UXO investigation could impact on the

content of the standard land contamination investigation. For example if a particular type of UXO is found on the site which typically contains particular chemicals then we would expect the standard land contamination to include inspection and analysis for those chemicals.

Finally, this is a Planning Consent issue, not an issue for the permit application currently being considered.

Concerns surrounding potential increased flood risk

AECOM (architecture, engineering, construction, operations, and management) have produced a Technical Note (Hydrology & Flood Risk-Nant y Betws. Job No: 60334725) to address and manage concerns previously raised for the Nant y Betws watercourse and the village of Waunfawr.

Operating conditions will need to consider and ensure that the outflows, suggested in the note, are followed to ensure that the proposal will not overload the watercourse. The watercourse will continue to have a flood risk associated with it, as it currently does for rainfall generated events for the catchment.

The developer has indicated that, during normal operation, excess flows would be routed to Llyn Padarn. As these flows would already enter the lake – either directly, through surface runoff, or indirectly through groundwater flows – we do not believe the proposals would result in an increased

flood-risk. It is accepted that there may be exceptional circumstances where discharges may be required from Q1 to Nant-y-Betws e.g. a prolonged period where the penstock between Q1 and Q6 is not in use. In these circumstances, Q1's relatively small catchment would mean that it would take some time

for levels to raise sufficiently to cause the reservoir to 'spill' into Nant-y-Betws. However it is accepted that this could occur if the penstock was inoperable for a sufficiently long period. It is worth noting that there will be some managed releases from Q1 to Nant-y-Betws on a periodic basis – in order to test the reservoir scour valve. We have received technical confirmation from the

applicant that the controlled releases would not overwhelm existing structures (culverts/bridges etc.) on the watercourse.

Concerns surrounding the sample data and monitoring of discharges

The applicant has undertaken a range of water quality samples which have been submitted to NRW as part of the permitting process. NRW needs to be satisfied that the data provided indicates that there should be no adverse impact on nearby protected sites. The methodology to implement

dewatering and excess water management indicates that there should not be any adverse impact on the local environment, and that sampling prescribed by the applicant to ensure that discharges meet the required standards will be adequate.

Monitoring to ensure compliance with the discharge permit conditions will be the responsibility of the developer and site operator. Data provided to NRW would be robustly examined. NRW retains the option to undertake its own monitoring, should it suspect the validity of the data and that permit conditions are not being met.

The information provided by the applicant indicates that there will be no deterioration caused to the surrounding environment. With regards to this environmental permit, NRW would need to be confident that there will be no deterioration in water quality as a result of granting the permit, and there will be no consequent impact on lake ecology nor on the status of the bathing water.

Concerns surrounding the protected species and protected features in both catchments

Any discharges would need to meet the required standard of the environmental permit.

Comments regarding the scheme's impact on choughs and nesting peregrine being disturbed in 2015 are considered by the Planning Inspectorate as part of the planning consent for the scheme.

A "Breeding Bird Method Statement" has been produced by the applicant. NRW has considered a number of documents and plans submitted by the developer relevant to the concern surrounding spawning salmonids in the Nant y Betws. NRW concludes the volumes of water to be discharged under any Environmental Permits will not cause adverse impact on salmonids, particularly *Salmo salar*.

The potential for siltation, scouring and flow deprivation have been considered amongst other factors and any environmental permit will specify water quality parameters necessary to avoid any adverse impact to both Llyn Padarn and the Afon Gwyrfai & Llyn Cwellyn.

The transfer of water and potentially non-native invasive species from catchment to catchment was a concern that NRW has considered in some detail. This was mainly around the potential for recreational watercraft or equipment to import an invasive non-native species into Llyn Padarn, and for that species to be drawn into the Glyn Rhonwy site, and subsequently find its way into the Gwyrfai catchment. However, we are satisfied that the biosecurity plan produced by the applicant addresses these issues and the risk will be controlled adequately.

Will NRW be on hand during the dewatering phase?

NRW would respond to incidents, and will undertake routine visits regularly. However, NRW would not be providing a continuous on-site presence during the dewatering phase.

As with all environmental permits, NRW would respond robustly to any incidences of permits conditions being breached.

The contamination of drinking water supplies in the Nant y Betws NRW has considered this to be a risk factor during the construction and operational phases of this development. The strict discharge conditions included in any Environmental Permit issued should ensure no adverse impact on drinking water supplies (private domestic). Nevertheless, there remains a conceivable risk pathway during the construction phase when dirty water from excavations and trackways could cause issues that are outside of the site boundary – this is not a matter controlled by this environmental permit. We expect the developer to control these risk as part of their Construction Environment Management Plan.

How will Natural Resources Wales regulate the site?

NRW is mindful of the potential for challenging site conditions due to rainfall and topography at this location. NRW would carry out joint regulatory liaison meetings and site visits with the Planning Authority during the construction phase.

Any breaches of water quality standards affecting controlled waters e.g. silt pollution, will be responded to as an environmental incident by NRW. Any pollution to controlled waters that sit outside of, or are in breach of, an Environmental Permit may result in enforcement action being taken, in line with our enforcement policy.

Ensuring that there is no deterioration in the water quality continues to be a key consideration of our determination process.

pH

The physical act of lining Q1 and Q6 with concrete, once set, should provide an inert liner to the ponds. Provided steps are taken to ensure no contamination during the construction phase, this should have no impact on the pH of the water within the system. The physical act of lining Q1 and Q6 with concrete should reduce the likelihood of scour and sedimentation.