

Natural Resources Wales permitting decisions

Bespoke Permit

We have decided to grant the permit for Cilgwyn Leachate Treatment Plant operated by Gwynedd Council.

The permit number is EPR/PP3539NV.

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 and web publicising responses

Key issues of the decision

Control of the Facility

Gwynedd Council are the Operator of the EPR permit and also own the installation premises. The Council have stated their intention to employ a contractor company to operate the installation for the first 12 months. However, in their role as operator, Gwynedd Council will maintain overall responsibility for the installation, instructing the contractor and exerting sufficient supervision. The technically competent management will be provided by the council. The technically competent individual is also the Site Manager for the installation and is an employee of Gwynedd Council. We are therefore satisfied that Gwynedd Council as the Operator have control over the operation of the facility. The management controls described in the application, have been incorporated into Table S1.2 of the permit as an operating technique.

Biodiversity, Heritage, Landscape and Nature Conservation

The following sites are within the relevant screening distances for a leachate treatment plant installation:

7 x European Sites within 10km:

- Abermenai to Aberffraw Dunes (SAC)
- Anglesey Coast: Saltmarsh (SAC)
- Afon Gwyrfai a Llyn Cwellyn (SAC)
- Menai Strait and Conwy Bay (SAC)
- Glynnllifon (SAC)
- Eifionydd Fens (SAC)
- Snowdonia (SAC)

There are no Sites of Special Scientific Interest within 2km of the installation.

31 x Local Wildlife Sites (LWS) within 2km:

- South Talysarn Quarry
- Nr. Talysarn
- East Talysarn Quarry
- Tal-eithin Quarry
- Below Talysarn
- Cilgwyn Tip
- Dyffryn Nantlle Slate Quarries (West)
- Carmel
- Clogwyn Melyn
- Dyffryn Nantlle
- Dyffryn Nantlle Slate Quarries (East)
- Warmlea
- Bwlch y Ffordd
- Mynydd y Cilgwyn
- West of Warmlea
- Moel Tryfan Quarry (East)
- Ty Newydd
- Bryntwrog
- Buarth Farm
- Nr. Bron Rhiw
- Plas y Braich
- Caeronwy-uchaf
- East of Warmlea
- Pen-y-bryn quarries
- Y Fron quarries
- Caeronwy-isaf
- Y Fron Slate Quarries
- Bwlch-y-llyn 1
- Bwlch-y-llyn 2
- Bryn Glas / Ty Cerrig
- Y Fron

With regard to the European sites, it is noted that there are no point source releases to air from the Cilgwyn Leachate Treatment Plant installation. Therefore for the habitats assessment, it is only necessary to consider SACs which are in direct hydraulic continuity with the installation.

Of the SACs listed above, only one is in direct hydraulic continuity with the installation. This is a small discrete section of the Glynllifon SAC which runs contiguous to the Afon Llyfni, approximately 5.5km downstream of the installation.

Glynllifon became an SAC on 20th April 2012 and is designated for its wooded habitats which are capable of supporting Lesser Horseshoe Bats. As treated leachate from the installation will be discharged into the Afon Llyfni only, we consider that it will not have any impact on the woodland habitat within the SAC.

In addition, it should be noted that untreated leachate is currently released from Cilgwyn Landfill site under the terms of an existing discharge consent (CG0369101). This consent was granted in 1996 and therefore pre-dates the designation of the Glynllifon SAC. As such, the discharge cannot be considered to be a new input to the SAC. Furthermore, the existing discharge consent limits will remain unchanged in the EPR permit.

On the basis of the above, we consider that treated leachate from the installation is not likely to give rise to any significant effect either alone or in combination with other permissions, plans or projects. The operation of the installation represents an improvement on the current situation, where untreated leachate is being discharged.

We consider that the impact of the discharge on the Local Wildlife Sites will remain unchanged, because the existing emission limits from discharge consent CG0369101 have been transferred into the EPR permit and remain unchanged. In practice, it is noted that the operation of the installation represents an improvement on the current situation, where untreated leachate is being discharged.

Environmental Risk

Point Source Emissions

The only point source emission from the installation is the discharge of treated leachate to surface water. There are no point source emissions to air, sewer, groundwater or land from the installation.

The leachate treatment plant (LTP) has been installed to treat the 800m³/day baseflow from an existing discharge originating from the Cilgwyn Landfill site. The landfill site itself no longer accepts waste and is closed. Furthermore, the LTP installation is only permitted to accept non-hazardous leachate originating from the landfill site. We consider that the operation of the LTP will

represent an improvement on the current situation where untreated leachate from the landfill site is discharged to surface water.

The impact of the existing discharge on the receiving waters has previously been assessed as part of the application for Environment Agency discharge consent CG0369101. On this basis, we agree with the operator's assessment that a H1 risk assessment is not required, because the existing discharge consent limits are not changing and are reflected in the EPR permit.

Fugitive Emissions

We are satisfied that the risk of fugitive emissions to air is low. This is based on the fact that leachate does not need to be stored prior to treatment. Also the LTP has been designed as an enclosed system thereby reducing the potential of fugitive emissions from vessels and tanks during filling and operation.

We are satisfied that the risk of fugitive emissions to surface water, sewer and groundwater is low. The treatment plant is situated on a 250 mm thick concrete plinth, which is impermeable to leachate. All subsurface pipework is constructed in HDPE which is butt-fusion or electrofusion welded. The subsurface pipework carries dilute leachate from the landfill site, which was previously discharged to the Afon Llyfni without treatment. On this basis, we are satisfied that a leak in the subsurface pipework would not represent a significant environmental risk. In addition, the LTP is configured so that in the event of no flow to the plant, an alarm signal is raised which reduces the potential for any leak from subsurface structures to go unnoticed for any length of time.

The above ground tanks, (Submerged Aerated Filter (SAF) tanks and dirty water tank) are fitted with probes to prevent overfilling. In addition, the installation has been designed with the capacity to store 3 x 1000 litre intermediate bulk containers (IBCs) of sodium hydroxide for supplementing influent alkalinity. If the storage of sodium hydroxide is required (see **Pre-operational conditions** section below), the operator has stated that the containers will be stored in a bunded area which is sized to contain 110% of the volume of one container. The IBCs will sit on an impermeable pad and will be situated within the secured complex to prevent vandalism. This statement has been incorporated into table S1.2 of the permit as an operating technique.

The operator will conduct a weekly inspection of tanks, pipework, bunding and surfacing to check for signs of leakage or damage. A maintenance plan is also being developed for the site which will include details on inspection and maintenance frequencies and procedures for all parts of the installation. This will form part of the installation's environmental management system (see **Environmental Management Systems** section below).

Odour

We are satisfied that there is no significant risk of pollution due to odour. Flow from the adit at Cilgwyn comprises leachate and groundwater, so the leachate is diluted and is non-odorous. The installation has also been designed as an enclosed system, so given the diluted nature of the leachate and the enclosed treatment systems, we agree that it is unlikely that odour will be generated by the process. We therefore consider that permit conditions 3.3.1 and 3.3.2 are sufficiently protective.

Noise

The operator has conducted a noise assessment, which was submitted as part of the Environmental Impact Assessment, produced in support of the planning application for the facility. A noise survey was undertaken at the two nearest receptors on 1st October 2009, at night when the landfill gas engine at the landfill site was turned off to establish background levels.

As background noise levels are low, they fall outside the scope of BS4142:1997 "Method for rating industrial noise affecting mixed residential and industrial areas". Therefore the operator adopted the approach that noise from the LTP should not exceed the existing background noise levels. This approach involved using standard acoustic formulae to determine what the maximum noise level at the LTP site boundary should be in order to prevent an exceedence of background levels at the nearest receptor. This maximum noise level is known as the Environmental Noise Criterion (ENC). A site boundary ENC of 71 dB(A) was calculated and includes the requirement that the LTP noise must not contain any tonal component.

The site boundary ENC of 71 dB(A) has been reflected in the planning consent for the development, which sets the ENC as a noise limit at the site boundary. The operator is required to comply with this condition and any measurements taken to verify compliance must be corrected to account for any tonal noise arising from the installation.

The main source of noise and vibration from the installation are the two air blowers, which will operate continuously. Each air blower is fitted with an acoustic enclosure comprised of steel outer and foam insulation inner. The purpose of the acoustic enclosures is to ensure that noise levels do not exceed the noise levels set in the planning conditions.

The operator has also established various management techniques to ensure that noise and vibration during maintenance work will be reduced. These techniques include ensuring:

- All plant is fitted with appropriate silencing equipment or enclosed;
- No operations liable to give rise to noisy conditions beyond the boundary will take place during evenings and at night;
- Switching off plant and vehicles when not in use; and

- Regular maintenance of plant and machinery in accordance with the manufacturer's instructions.

We consider that pollution due to noise is unlikely based on the physical attenuation in place around the air blowers and the other management techniques established by the operator. We also note that the planning consent for the site already sets a limit for noise at the site boundary, which the operator is required to comply with. On this basis, we consider that standard permit conditions 3.4.1 and 3.4.2 are appropriate and sufficiently protective.

Operating Techniques

Environment Agency sector guidance note IPPC S5.03 “Technical guidance for the treatment of hazardous and non-hazardous landfill leachate” sets emission benchmarks for discharges to water for the following types of treatment technology:

- Sequencing Batch Reactors (SBR);
- Membrane Bioreactors (MBR); and
- Reverse Osmosis (RO) plants

The Cilgwyn leachate treatment plant is an attached growth, biological treatment system, so no BAT emission benchmark for discharges to water exists for this type of treatment technology. In view of this, the plant has been designed to meet the emission limits within the existing Environment Agency discharge consent CG0369101. These limits have been transferred into the EPR permit.

It is noted that other options such as SBR and RO were considered for the on-site treatment of leachate at the planning and design stage. However none of these options were suitable as a package treatment system given the remote location of the site, its inaccessibility, the small footprint available, difficulty in supplying utility services and the unusually large volume of flow as leachate is considerably diluted by groundwater inputs.

Annex 1: decision checklist

This document should be read in conjunction with the application and supporting information and permit / notice.

Aspect considered	Justification / Detail	Criteria met
Consultation		
Scope of consultation	<p>The consultation requirements were identified and implemented. The decision was taken in accordance with EPR RGN 6 “Determinations Involving Sites of High Public Interest”, our Public Participation Statement and our Working Together Agreements.</p> <p>The consultation was sent to the relevant consultees on 8th & 9th May 2013. The consultees are:</p> <ul style="list-style-type: none"> • Gwynedd Council Environmental Health Department • Gwynedd Council Planning Department • Betsi Cadwaladr University Health Board • Food Standards Agency • Health and Safety Executive 	✓
Responses to consultation and web publicising	<p>The web publicising and consultation responses (Annex 2) were taken into account in the decision.</p> <p>The decision was taken in accordance with our guidance.</p>	✓
Operator		
Control of the facility	<p>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”.</p> <p>See Key Issues section.</p>	✓
The facility		
The regulated facility	<p>The regulated facility is an installation which comprises the following activities listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations:</p> <ul style="list-style-type: none"> • Section 5.4 A(1) (a) (i): Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities, and excluding activities covered by 	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>Council Directive 91/271/EEC concerning urban waste-water treatment – (i) biological treatment; and the following directly associated activities:</p> <ul style="list-style-type: none"> • Chemical dosing with sodium hydroxide to supplement influent alkalinity, if required. 	
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	<p>The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility including discharge points.</p> <p>A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.</p>	✓
Planning permission	We are satisfied that planning permission is in place and is appropriate for the relevant waste operation applied for.	✓
Site condition report	<p>The operator has provided a description of the condition of the site.</p> <p>We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports – guidance and templates (H5).</p> <p>The operator will draw up a site closure plan prior to decommissioning having regard for the data/evidence gathered in the SCR to demonstrate that, in its then current state, the installation can be decommissioned to avoid any pollution risk and return the site of operation to a satisfactory state. This commitment has been incorporated into Table S1.2 of the permit as an operating technique.</p>	✓
Biodiversity, Heritage, Landscape and Nature Conservation	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.</p> <p>A full assessment of the application and its potential to affect the habitats sites has been carried out as part of the permitting process. We consider that the application</p>	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<p>will not affect the features of the sites.</p> <p>We have not formally consulted on the application. The decision was taken in accordance with our guidance.</p> <p>See Key Issues Section.</p>	
Environmental Risk Assessment and operating techniques		
EIA	In determining the application, we have considered the planning permission approving the development.	✓
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> <p>See Key Issues Section.</p>	✓
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these those set out in IPPC S5.03 "Technical guidance for the treatment of hazardous and non-hazardous landfill leachate".</p> <p>The leachate treatment plant will incorporate the following techniques that are considered to be BAT:</p> <ul style="list-style-type: none"> • Use of mercury free sodium hydroxide • LTP designed as an enclosed system to reduce potential for fugitive emissions to air and odour from vessels and tanks during filling and operation • Inspection and maintenance programme for impervious surfaces and containment facilities • Bunding for sodium hydroxide IBCs sized to contain 110% of the volume of one container • Noise from air blowers attenuated by acoustic enclosures <p>The Cilgwyn leachate treatment plant is an attached growth, biological treatment system. There are no emission benchmarks for emissions to water for this type of treatment system.</p> <p>See Key Issues section.</p>	✓
The permit conditions		
Raw materials	We have specified limits and controls on the use of raw	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<p>materials and fuels in Table S2.1 of the permit.</p> <p>More specifically, sodium hydroxide, used to supplement the influent alkalinity, must be mercury free.</p>	
Waste types	<p>We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility in Table S2.2 of the permit.</p> <p>We are satisfied that the operator can accept this waste for the following reasons:</p> <ul style="list-style-type: none"> • The permitted waste type is non-hazardous; • The installation will only treat leachate draining from Cilgwyn Landfill site. There will not be any importation of leachate from other facilities; and • The installation has been designed specifically to treat leachate draining from Cilgwyn Landfill site. Therefore the operation of the LTP will result in an environmental improvement, when compared to the impact on receiving waters before the installation was operational. 	✓
Pre-operational conditions	<p>Based on the information in the application, we consider that we need to impose pre-operational conditions.</p> <p>The operator has stated that sodium hydroxide may be used in future to supplement the influent alkalinity to ensure that the nitrification of the leachate is not alkalinity limited. Based on the current effluent quality, alkalinity dosing is not required. However it may be required in future as effluent quality changes in response to the capping of the landfill.</p> <p>Pre-operational condition 1 requires the operator to:</p> <ul style="list-style-type: none"> • submit for approval a written report describing the chemical dosing regime to be adopted for the purposes of supplementing influent alkalinity should it become required. <p>The report shall state the proposed date on which dosing will commence and shall provide a comparison of the finalised chemical dosing system against the original design criteria described in the permit application report (AMEC</p>	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<p>report ref 25262/r492i2 dated 22 March 2013). The report shall also evaluate the proposed chemical dosing regime in terms of its effect on the overall performance of the LTP and impact on final effluent quality.</p> <p>Pre-operational condition 1 is required to be submitted to Natural Resources Wales 28 days before the commencement of chemical dosing.</p>	
Improvement conditions	<p>Based on the information on the application, we consider that we need to impose improvement conditions.</p> <p>We have imposed an improvement condition to ensure that appropriate management systems and management structures are in place to ensure compliance with all the permit conditions.</p> <p>As such, improvement condition (IC1), requires the operator to:</p> <ul style="list-style-type: none"> • submit a copy of the installation's Environment Management System (EMS) to Natural Resources Wales and make available for inspection all documents and procedures which form part of the EMS. The EMS shall be developed in line with Part 1 of "How to comply with your Environmental Permit" (version 6 – June 2013), and the additional requirements set out in Section 2.3 of IPPC S5.03 "Technical guidance for the treatment of hazardous and non-hazardous landfill leachate" guidance document. <p>IC1 is required to be submitted to Natural Resources Wales by 31/03/14.</p>	✓
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 descriptions are specified in the Operating Techniques table in the permit.</p>	✓
Emission limits	We have decided that emission limits should be set for the parameters listed in the permit.	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<p>Emission Limit Values (ELVs) have been set for the following substances:</p> <ul style="list-style-type: none"> • Biochemical Oxygen Demand 40 mg/l • Ammoniacal Nitrogen 50 mg/l • Total Suspended Solids 60 mg/l <p>These ELVs are in accordance with existing discharge consent CG0369101. In addition, an ELV for pH of 6-9 has been set, which will apply from the date that chemical dosing commences (see Pre-operational conditions section above).</p> <p>It is considered that the ELVs described above will ensure that significant pollution of the environment is prevented and a high level of protection for the environment secured.</p>	
Monitoring	<p>We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.</p> <p>These monitoring requirements have been imposed in order to ensure that the discharge complies with the emission limits stated in the permit.</p> <p>Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.</p>	✓
Reporting	<p>We have specified reporting in the permit to ensure that emissions remain within emission limit values (ELV) and that the installation is being operated in an efficient manner.</p> <p>The reporting frequencies are given in Schedule 4 of the permit. The reporting frequency for emissions to water has been set at six-monthly. All other parameters are required to be reported on an annual basis, the only exception being any waste returns required by permit condition 4.2.5.</p>	✓
Operator Competence		
Environment management system	The operator is developing an environmental management system (EMS) in line with Environment Agency guidance. In addition, the installation will follow	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<p>the management procedures set out for the operator's other waste management facilities, which are certified to ISO 14001. The elements of the EMS which are being developed are described in the permit application.</p> <p>We have set improvement condition IC1 to ensure that the EMS is delivered. (See Improvement Conditions section above). We are satisfied that this can be addressed as an improvement condition, (rather than a pre-operational condition). This is because by operating, the installation will achieve an improvement on the current situation where untreated leachate from the landfill site is discharged to surface water. Also the operation of the installation will not introduce any new emissions into the environment. Therefore the sooner the installation is operational, the sooner an improvement can be realised.</p>	
Technical competence	<p>Technical competency is required for activities permitted.</p> <p>The operator is a member of an agreed scheme. The operator's arrangements for minimum site attendance have been incorporated into Table S1.2 of the permit as an operating technique.</p>	✓
Relevant convictions	<p>The National Enforcement Database has been checked to ensure that all relevant convictions have been declared.</p> <p>No relevant convictions were found.</p> <p>The operator satisfies the criteria in EPR RGN 5 on Operator Competence.</p>	✓
Financial provision	<p>There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with EPR RGN 5 on Operator Competence.</p>	✓
OPRA	OPRA Score	The OPRA score for the installation is 57.
		✓

Annex 2: Consultation and web publicising responses

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process.

Response received from Gwynedd Council Environmental Health Department
Brief summary of issues raised
None – A copy of the application was forwarded to Gwynedd Council Environmental Health Department on 9 th May 2013. A reminder letter was sent on 30 th May 2013. No response has been received.
Summary of actions taken or show how this has been covered
None

Response received from Gwynedd Council Planning Department
Brief summary of issues raised
A copy of the application was forwarded to Gwynedd Council Planning Department on 9 th May 2013. A response was received on 17 th May 2013. The response confirms that a planning condition relating to noise has been set. Specifically, condition 9 of the planning permission states that the:
<ul style="list-style-type: none">“noise level arising from the operation of the leachate treatment facility shall not exceed 71 dB(A) measured at the boundary of the site compound.... Measurements taken to verify compliance shall have regard to the effects of extraneous noise and the tonal content of the noise arising from the development and shall be corrected for any such effects”.
In addition, Gwynedd Council have confirmed that there are no historic or recent enforcement actions relating to noise nuisance from the site. Also that there has been no reason to take any formal or informal action in relation to the noise impact of the development at Cilgwyn.
Summary of actions taken or show how this has been covered
We consider that pollution due to noise is unlikely based on the physical attenuation in place around the air blowers and the other management techniques established by the operator, (see Environmental Risk section above). We also note that the planning consent for the site already sets a limit for noise at the site boundary, which the operator is required to comply with. On this basis, we consider that standard permit conditions 3.4.1 and 3.4.2 are appropriate and sufficiently protective.

Response received from Betsi Cadwaladr University Health Board
Brief summary of issues raised
None – A copy of the application was forwarded to Betsi Cadwaladr University Health Board on 8 th May 2013. A reminder letter was sent on 30 th May 2013. Betsi Cadwaladr University Health Board responded on 4 th June 2013 and

stated that the application does not meet their public health screening assessment criteria. Therefore a response to the consultation has not been provided.

Summary of actions taken or show how this has been covered

None

Response received from

Food Standards Agency

Brief summary of issues raised

None – A copy of the application was forwarded to the Food Standards Agency on 8th May 2013. A reminder letter was sent on 30th May 2013. No response has been received

Summary of actions taken or show how this has been covered

None

Response received from

Health and Safety Executive

Brief summary of issues raised

None – A copy of the application was forwarded to the Health and Safety Executive on 9th May 2013. The Health and Safety Executive responded on 13th May 2013 declining to comment on the consultation.

Summary of actions taken or show how this has been covered

None

Response received from

Public Consultation

Brief summary of issues raised

None – There have been no responses to the advertisement on our website.

Summary of actions taken or show how this has been covered

None.