Gefn Graianog Quarry – Bespoke Permit Application
Environmental Risk Assessment

Client: TG Group

Ref No.: K0642-ENV-R002-04
Date: August 2025

Document control

Revision	Revision/ Review Date	Details of Issue	Authorised		
			Prepared By	Checked By	Approved By
00	May 2024	Draft	O Smith	J Baxter	J Baxter
01	June 2024	Updated following comments from Client	O Smith	J Baxter	J Baxter
02	July 2024	Updated following meeting with NRW	O Smith	J Baxter	J Baxter
03	April 2025	Updated for resubmission to NRW	O Smith	C Heward	J Baxter
04	August 2025	Updated following NRW comments	G Sharkey	E Greenhalgh	J Baxter

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1 Introduction

1.1 Report Objectives

This report has been produced by Ayesa on behalf of TG Group (the Operator) in support of a new bespoke permit application for a proposed soil recycling / recovery activity in an area within Cefn Graianog Quarry located in Llanllfni, Caernarfon, North Wales, LL54 6SY.

The National Resources Wales (NRW) horizontal guidance on risk assessments for environmental permits currently follows the Environment Agency (EA) guidance[1].The guidance referenced identifies the following step process to risk assessments which can be summarised as:

- Identify risks;
- Identify receptors;
- Identify possible pathways
- Assess relevant risks; and
- Control risks.

The guidance indicates that the following parameters require assessing:

- Any discharge;
- Accidents;
- Odour;
- Noise and vibration;
- Fugitive emissions;
- Visible emissions; and
- Release of bioaerosols.

The guidance requires that receptors are considered with regard to the proximity of the Site. Table 1 of this report identifies the most likely sensitive receptors adjacent to the Site and has been compiled using information available through internet-based searches.

This Environmental Risk Assessment is in support of a bespoke permit application for a site located within 500 m (415 m south, downgradient) of a Site of Special Scientific Interest (SSSI).

The following key documents and data sources have been consulted in the preparation of this variation application report including:

- Risk assessments for your environmental permit - GOV.UK (www.gov.uk)

[1] Risk assessments for your environmental permit - GOV.UK (www.gov.uk)

- Magic Map Application (defra.gov.uk)
- Online maps & routes for walking, cycling and running | OS Maps
- Google Earth
- Data - Met Office
- Wind Forecast - United Kingdom - WillyWeather
- First Nature Website for Cors Gyfelog Nature Reserve (https://www.first-nature.com/waleswildlife/n-nnr-corsgyfelog.php)

The guidance requires that receptors are considered with regard to the proximity of the Site. Table 1 of this report identifies the most likely sensitive receptors adjacent to Site and has been compiled using information available through internet-based searches.

The guidance also requires information to be presented in the form of risk assessment tables, one table for each actual or possible hazard identified. Identification of accident scenarios and their prevention through operational management should also be detailed. Each table should identify the hazard, the process that causes the hazard, the potential receptors and the pathway from the hazard to those receptors. In addition, the tables should also include the preventative risk management practices to be employed along with an assessment of the mitigated risk.

1.2 Site Details

The proposed permit area covers an area of land comprising approximately 0.54 hectares and is located at an approximate Grid Reference SH459488 at the Cefn Graianog Quarry, an active sand and gravel pit operated by TG Aggregates, approximately 4.4 km south/southwest of Penygroes village centre. The north/eastern boundary of the Site is bordered by an access track, and the western boundary of the Site is defined by a conveyor, and beyond this, a large surface water lagoon. The southern boundary is undefined by surface features and comprises quarry workings and the quarry yard/offices further south. Farmland surrounds the Site in all directions, and a forested area lies just 65 m northeast of the Site. Several residential and farming buildings are located in the area surrounding the Site, the nearest residential property of which is situated approximately 205 m east/southeast of the Site, on the track to the Site entrance. The other properties are located over 450 m away from the Site.

1.3 Assessment of Environmental Risk

The NRW/EA guidance requires that everyone applying for a new environmental permit (other than a standard permit) should present information in the form of risk assessment tables, one table for each actual or possible hazard identified. Identification of accidents scenarios and their prevention through operational management should also be detailed. Each table should identify the hazard, the potential receptors and the pathway from the hazard to those receptors. In addition, the tables should also include the preventative risk management practices to be employed along with an assessment of the mitigated risk.

2 Scope of the Assessment

2.1 Current Operations

There are currently no permitted activities taking place on the proposed permit area or the wider Cefn Graianog Quarry Site. The proposed permit area is located within the north of the active quarry site, just east of a large surface water lagoon, and approximately 130 m north/northwest of the quarry offices and yard area. This area is currently used as a stocking area.

2.2 Proposed Operations

It is understood that the proposed activity would fit the criteria of the Standard Rules permit SR2010 No. 12 (treatment of waste to produce soil, soil substitutes and aggregate – up to 75,000 tonnes) apart from the proximity of the Cors Gyfelog SSSI and Corsydd Eifionydd/Eifionydd Fens Special Area of Conservation (SAC) to the Site, both 415 m south of the proposed permit boundary. Hence, a bespoke permit application which considers the specific risks to the SSSI/SAC is required and are consequently considered in more detail in Section 3 of this report.

TG Group wishes to apply for a bespoke environmental permit for the following:

- Dry processing, limited to screening and associated handling of material within the proposed permit boundary;
- Treating up to 50,000 tonnes per year with up to 20,000 tonnes (~10,000 m^3) stored at any one time within the permit boundary;
- Waste types are proposed to include the following:
    - 01 04 08 waste gravel and crushed rocks;
    - 01 04 09 waste sand and clays;
    - 17 05 04 soil and stones other than those mentioned in 17 05 03;
    - 17 01 01, 17 01 02, 17 01 03 concrete, bricks, tiles and ceramics;
    - 17 01 07 mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06;
    - 17 03 02 road base and road plannings (other than those containing coal tar) only;
    - 17 05 06 dredging spoil other than those mentioned in 17 05 05, and,
    - 20 02 02 soil and stones.
- The activity is proposed to be undertaken on permeable hardstanding; and,
- Surface water run-off from the permitted area is to be contained and drained into a small lagoon located within the east of the permitted area, which will then be pumped into a larger lagoon to the west of the permit boundary.

The primary entrance to the Site is from the signposted track just off the A487.

2.3 Potential Hazards

2.3.1 Odour

The proposed wastes received at the facility for processing at the Site are very unlikely to be a significant source of odour. The low or negligible organic content results in negligible landfill gas generation and no production of malodorous leachate or smell.

Nevertheless, the risk of odours will be reduced to as low as practicably possible by the following operational management techniques:

- Waste Acceptance Protocols and very limited range of wastes accepted effectively removes odour potential;
- All incoming waste will be checked for particularly malodours waste and any particularly odorous wastes will be rejected and dispatched from Site as soon as practical;
- Regular olfactory monitoring will be conducted and will take account of meteorological conditions and potential impacts of odour (however unlikely) on receptors; and,
- A complaints procedure is in place onsite, and all complaints and remedial action will be recorded in accordance with the Site's Environmental Management System (EMS).

The risks associated with fugitive odour emissions are detailed in Table 2 and will continue to be managed in accordance with the Sites EMS.

2.3.2 Noise and Vibration

The dry processing will be limited to screening and the associated handling of material. The risk of noise and vibration emissions associated with the activity will include the transport and handling of waste, in addition to movement and operation of site plant during screening and processing using a mechanical screener. Screening is currently undertaken onsite for site won sand material and imported sand material with the activity being applied for to allow limited to the importation of similar wastes material (e.g. waste sand).

Receptors are identified in Table 2.6 with noise sensitive receptors considered to be residential and public use receptors. The closest residential property (>200 m) is located on the quarry haul road and is owned by the quarry operator therefore this has been factored in when considering the potential impact on the residential property from noise and vibration emissions. The other properties are located over 325 m away from the Site.

The Site is located within the active sand and gravel quarry, with plant operating onsite and lorries arriving and departing through currently consented hours. The north/eastern boundary of the Site is bordered by an access track, and the western boundary of the Site is defined by a conveyor, and beyond this, a large surface water lagoon. The southern boundary is undefined by surface features at present and comprises quarry workings and the quarry yard/offices further south. Farmland surrounds the Site in all directions, and a forested area lies just 65 m northeast of the Site.

As the proposed activity will use the same/similar plant and machinery to what is already used as part of the quarrying operation, the noise emissions produced by the proposed soil recycling/recovery activity are unlikely to have any impact on noise and vibration emissions and consequently on noise sensitive receptors than those already are produced by the processes involved in the current quarrying activity. The proposed activities are consistent with those currently undertaken at the quarry and additional noise mitigation is to be implemented consequently.

Therefore, it is considered that a separate noise risk assessment is not required as part of the application.

A number of standard noise mitigation measures are implemented to ensure operations will not impact significantly upon the amenity of the area in general and the nearest sensitive receptors in particular. These can be summarised as follows:

- all operations are carried out in adherence to the hours stipulated by the Site's planning permission;
- a proposed surface water retention bund along the southern permit boundary will be constructed before the site becomes operational. This will join the existing eastern boundary bund, which will be enhanced to improve both visual and noise screening between the processing area and the potential noise receptor (residential property along the quarry access road);
- noise limits specified and monitoring required by the planning permission;
- plant and vehicles are checked at the recommended service intervals and maintained in accordance with the manufacturer's instructions, particular attention is given to the condition of any fitted silencers;
- where reversing alarms are employed onsite on mobile plant and equipment, only broadband multi-frequency sound alarms (white sound) shall be used;
- as part of the procurement of additional plant and equipment, consideration is given to noise emission specifications;
- site roads are maintained with smooth pothole free surface;
- vehicles are subject to speed limit of 10 mph, and where practicable engines will be switched off when not in use;
- drop heights of materials are minimised where possible;
- site personnel are instructed to carry out all routine operations in a manner that does not cause unnecessary levels of noise; and,
- where reasonably practicable, select quiet working methods should there be a suitable alternative with a lower noise impact.

A complaints procedure is in place, and all complaints and remedial action will be recorded in accordance with the site's EMS. The risks from noise emissions and proposed management measures are discussed further in Table 3.

2.3.3 Fugitive / Visible Emissions

Only the permitted waste types listed in Section 2.2 above will be accepted for processing at the Site. These are very unlikely to contain materials which could present a risk of windblown litter. They are also unlikely to contain anything to attract pests or vermin. Litter, pests and vermin will not be considered further in this ERA.

2.3.3.1 Dust

The existing onsite quarry activity has the potential to generate fugitive emissions. A Dust and Emissions Management Plan has been prepared by Ayesa for the Site (K0642-ENV-R005) and is attached as Appendix 1 The activity is proposed to encompass the dry processing including screening and associated handling of waste which could potentially generate dust.

Particulate emissions can arise from the deposit of potentially dry or dusty wastes, uncovered dusty waste deposits, un-vegetated areas vehicle movements on unpaved or dusty roads and settlement of surface water run-off laden with suspended solids. A number of measures are in place onsite to manage dust including:

- The operator will continue to enforce strict waste acceptance protocols to manage the deposit of potentially dusty wastes;
- All site haul roads are maintained and cleaned as necessary to minimise the accumulation of mud or dusty materials;
- All vehicles onsite shall not exceed the onsite speed limit of 10 mph;
- All vehicles are sheeted so as to prevent spillage or dust blowing from their loads;
- Drop heights are minimised where possible;
- Site staff will check departing vehicles for mud and vehicles will be cleaned on site if necessary;
- A road sweeper will be employed as necessary;
- A water bowser, which will be towed by a tractor, will be maintained onsite at all times to supress dust on roads and surfaces during periods of dry and / or windy weather conditions;
- All site staff will receive appropriate training in order to ensure that employees are conversant with the Site Dust Action Plan;
- During meteorological conditions that are likely to lead to fugitive dust emissions, suitably trained site staff will monitor the Site at least once per day to ensure that dusty conditions do not prevail; and,
- If a dust nuisance is identified an investigation will be undertaken to identify the source and remedial measures put in place in accordance with the Site's EMS (e.g. reduce / suspend activities, additional dust suppression, additional wheel cleaning, additional use of road sweeper).

During drought conditions, if the large surface water lagoon dries up operations that pose any risk to creating dust will be suspended. Operations will not recommence until the water source has replenished or an alternative source is found. A complaints procedure is in place onsite, and all complaints and remedial action will be recorded in accordance with the Site's EMS. The risks from fugitive emissions of dust and proposed management measures are discussed further in Table 4.

2.3.3.2 Mud

The main access road from the A487 to the main site and yard area is currently surfaced with tarmac. The haul road to the west of the Site is also surfaced with tarmac. Internal unpaved roads will be

regularly graded and surfaced with suitable hardcore so that it does not become a source of mud and debris on the wheels of site traffic. Any holes of soft spots that develop will be repaired immediately.

Traffic on the roads will be directed to and from entrance to the point of discharge or receipt of material. Vehicles leaving the Site will be inspected for mud and wheels will be cleaned on site if necessary.

Notwithstanding this, the Site's access routes will be inspected daily, and should there be evidence of mud and debris being carried onto the public highway, it will be removed using a road sweeper as soon as practical.

A complaints procedure is in place onsite, and all complaints and remedial action will be recorded in accordance with the Site's EMS. The risks from fugitive emissions for mud and proposed management measures are discussed further in Table 5.

2.3.4 Accidents

There is potential for accidents to occur during the operation of the landfill which may have a detrimental environmental impact. This can include spillages of fuels or other polluting liquids; fires causing damage to containment measures or generating contaminated liquid; or deliberate vandalism resulting in pollution similar to the aforementioned. The risks of pollution occurring from accidents and the proposed management measures are discussed further in Table 6.

2.3.5 Migration of Contaminants into Controlled Waters

The proposed activity will be undertaken on an area of permeable hardstanding, as indicated on Drawing K0642.1003. The management of surface water is also illustrated on the drawing. The wastes proposed to be accepted at the site are listed within those accepted in the standard rules SR2010 No.12 permits. The proposed wastes have low to negligible leachability potential and the primary potential pollutant within waters at the site will be suspended solids.

2.3.5.1 Surface Water

Any surface water run-off from the permitted area is to be contained within a collection point within the east of the permitted area. Water from this collection point will be pumped into a larger existing quarry settlement lagoon to the west of the permitted area. The existing lagoon has raised embankment bunds at around 1m high, around the perimeter, of which the inner slopes are lined with clay/silt to minimise water losses from system and is managed in accordance with the Site's EMS. Water from the larger settlement lagoon will be re-used on the wider quarry site (e.g. washing / grading of aggregates, as well as dust suppression). There will be no releases of surface water outside of the quarry. The lagoon forms part of the wider quarry silt and surface water management system. The Site has a current discharge licence which allows pumped groundwater to be discharge into the Afon Dwyfach to the south of the quarry. However, the Operator states no water has been discharged at this discharge point in over a decade.

The existing bund located to the southeast of the permitted area is to be extended northwest and east along the south of the proposed permit boundary prior to waste operations commence. The extension of the surface water bund using cohesive materials such as clay/silt or if more granular materials are used the inner slopes will be lined with clay/silt. Extended bund will be to a height of

1.5m. This will ensure surface water is contained within the collection point and will not drain off site into drainage ditches or surrounding water courses.

Surface water management procedures are in place and detail the inspection requirements of the infrastructure and equipment used to manage surface water on site. Inspections of the lagoons and pipework are required on a daily basis, when in use, as part of the wider quarry safety inspections, of which the check sheets are attached as Appendix 2. Following these inspection procedures will ensure leaks within the pipework during pumping do not occur unnoticed and any repairs can be made in good time.

2.3.5.2 Groundwater

The activities are to be undertaken on permeable hardstanding. There is limited potential for rainwater/surface water to permeate through the hardstanding and migrate into the underlying superficial sands and gravels, and siltstone bedrock (Secondary B Aquifer). Cors Gyfelog Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC) is located 415 m south and down hydraulic gradient of the proposed permit area. NRW historically conducted monitoring of boreholes installed along the southern perimeter of the quarry which has demonstrated that the groundwater levels in Cors Gyfelog are charged independently from Bwlch Mawr to the west rather than the quarry. This is discussed further in Section 3.2.

Given the waste types proposed to be accepted and processed at the Site are inert soils and gravels originating from dredging, excavation and demolition activities (detailed in Report Ref: K0642-ENV-R003-01, Waste Acceptance Criteria Report), it is very likely these materials will contain low or negligible concentrations of potentially polluting substances. Hence there is a low likelihood for contaminants to leach out of the waste into groundwater.

The site is not located within a Source Protection Zone (SPZ). The standard rules SR2010 No.12 Section 2.4 (Operating Techniques) allows for permitted wastes to be stored treated on hardstanding when the permit area is located outside of any SPZ.

No further mitigation is required with respect to risk to groundwater.

2.4 Potential Hazard Pathway

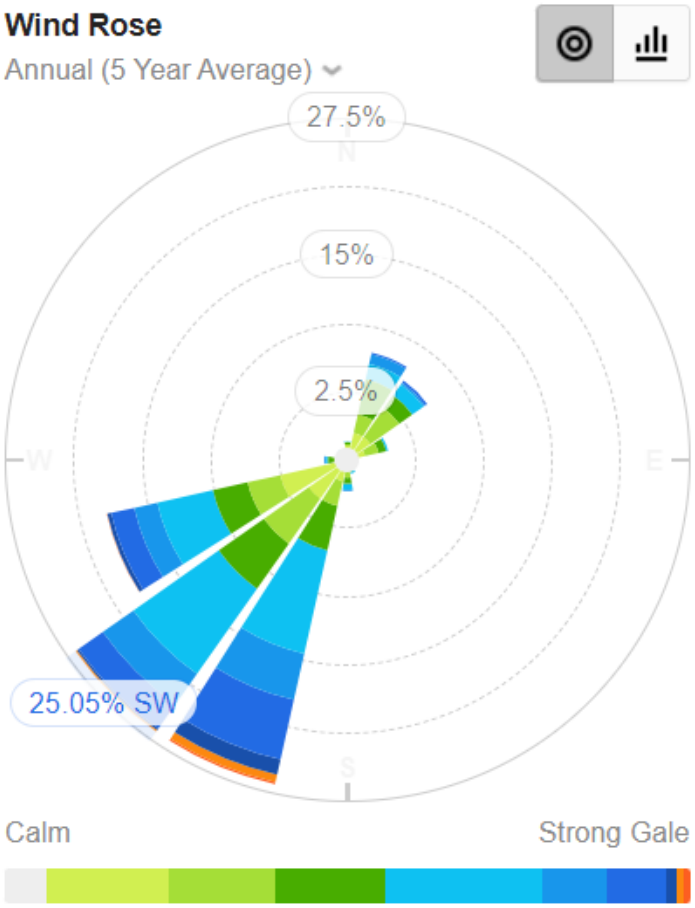
When identifying the receptors, the closest and the most sensitive (if different from the closest) have been considered in each direction from the hazard. Account has been taken of the mechanism of transport to the sensitive receptor e.g. proximity to highway access / egress points for mud and wind direction for airborne dust. Recent wind direction data has been used to establish hazard pathways to adjacent to the Site.

2.4.1 Meteorological Conditions

Weather and wind statistics are taken from Porthmadog Weather Station[2] located 14.9 km southeast of the Site. The wind rose shows that the dominant wind direction is from the southwest blowing towards the northeast (Figure 1).

[22] https://wind.willyweather.co.uk/wl/gwynedd/porthmadog.html

Figure 1 Windrose Diagram for Porthmadog



2.5 Probability of Exposure

Probability of exposure is determined by the distance of the receptor to the Site and the likelihood of the hazard reaching the receptor i.e. frequency of prevailing wind in that direction. The probability of exposure is irrespective of the type of hazard presented.

2.6 Hazard Receptors

Table 1 identifies the most likely sensitive receptors adjacent to the Site, this has been compiled using information available through internet-based searches. The locations of these receptors are indicated on drawing K0642-1002.

Table 1 Sensitive Receptors within 1000m

Receptor Number	Receptor	Receptor Type	Approx. Distance from Site Boundary (m)	Direction from Site	Freq (%) Prevailing Wind Direction
1	Residential/farming properties/campground	Residential / Agricultural	325 – 780	W - NW	0.3 - 0.5
2	Residential property located on access track to quarry	Residential / Agricultural	205	ESE	0.8
3	Properties off A487	Residential / Agricultural	780 - > 1000	NE - SE	0.9 - 25.1
4	Cors Gyfelog	Site of Special Scientific Interest	415	S	1.4
5	Corsydd Eifionydd/Eifionydd Fens	Special Area of Conservation	415	S	1.4
6	Cors Gyfelog	National Nature Reserve	455	SSE	0.0
7	Public Footpath	Public Footpaths	140	S	1.4
8	Public route of access	Public route of access	Along northeastern boundary of the Site	NE	25.1
9	Traffic free off-road cycle route along old railway track	Cycle route	150	E	1.8
10	Ancient Semi Natural Woodland	Ancient Semi Natural Woodland	892	NW	0.3
11	Unnamed roads and A487	Highways	0 - 1000	All directions	0.3 – 7.3
12	Silt Lagoons associated with quarry	Waterbody	30 – 220	W	0.5
13	3 No Inland river not influenced by tidal action	Watercourse	205 - 241	N - NE	2.4 – 25.1
14	4 No Inland river not influenced by tidal action	Watercourse	119 - 229	E - SE	0.9 - 1.8
15	2 No Inland river not influenced by tidal action	Watercourse	157 - 235	S - SW	1.4 – 7.3
16	1 No Inland river not influenced by tidal action	Watercourse	205	N	2.4
17	Afon Desach	Watercourse	800	WNW	0.3 - 0.5
18	Purple moor grass and rush pastures	Protected Habitat	57	NE	25.1
19	Graianog North Site of Importance for Nature Conservation (SINC)	Site of Importance for Nature Conservation (SINC) / Local Wildlife Site	19 - 300	NNW	1.1
20	Cefn Graianog Site of Importance for Nature Conservation (SINC)	Site of Importance for Nature Conservation (SINC) / Local Wildlife Site	145 - > 1000	NNE - SSE	0.0 - 25.1

3 Risk Assessments and Accident Management Plans

3.1 Risk Assessment

The site-specific risk assessments completed for odour, noise and vibration, dust and mud are detailed in Tables 2 to 5 below. Where there is an inter-relationship between the specific risk assessment and meteorological conditions, this has been identified. The pathway is determined by the location of the receptor relative to the Site, the distance from the boundary (m) and the frequency (likelihood) the prevailing wind will blow in the direction of the receptor (%) as determined by historical wind rose data for Porthmadog Weather Station located 14.9 km southeast of the Site boundary.

The mitigated risk is the residual risk presented by the hazard after control measures have been implemented. This is the most realistic representation of the risk as effective controls will be maintained under the requirements of the environmental permit, planning consent and management procedures set out in the Operator's EMS.

3.2 SSSI/SAC

The Cors Gyfelog Site of Special Scientific Interest (SSSI) which is also classified as a Special Area of Conservation (SAC) and contains a National Nature Reserve is located 415 m south and down hydraulic gradient of the proposed permit area. This is a lowland site containing a wide range of habitats, including wet woodland and wet acid heath with one of the largest strands of transition mire and quaking bog habitats in Wales. This area is home to mature willow carr Salix cinerea, supporting lichen and some very rare wildflowers such as Hammarbya puludosa and the Marsh Helleborine Epipactus palustris, among many other species. Several rare species of insects such as the Silver Fly Acrometopia whalbergi, Scabious Sucissa pratensis and the semi-aquatic weevil Bagous frit.

The following measures have been employed to mitigate any impact on the SSSI/SAC.

Surface water from the proposed waste processing and storage area will be contained and drained into a collection point within the permit boundary (see drawing K0642-1003 Site Layout and Drainage Plan). This collected water will then be pumped west into the existing silt lagoons. Prior to the commencement of waste operations, a bund will be put in place along the southern permit boundary to contain the surface water within the permit boundary. Therefore, there will be very little/no surface water running downslope towards the SSSI, hence there is no pathway for suspended solids originating from the proposed activity to enter the SSSI. Mitigation measures are in place as part of the wider quarry works which include a below ground clay barrier constructed to the south of the Water Management Pond (No. 1) along the southern boundary of the site, regular monitoring of boreholes installed along the southern perimeter of the site by NRW to prevent any potential contaminated groundwater from entering the adjacent Cors Gyfelog SSSI and SAC. Groundwater within the quarry is independent from groundwater within the Cors Gyyfelog SSSI and SAC as demonstrated by data published by RIGARE on behalf of NRW.

Active dust control measures are proposed and the prevailing wind direction for the area is from southwest towards the northeast. The SSSI is located 415 m south of the proposed permit area, therefore if any dust is produced from the activity, it is unlikely to be carried towards the SSSI (frequency of the wind blowing southwards is 1.4%). Therefore, this is not considered a feasible pathway for any dust originating from the proposed activity to reach the SSSI. Nevertheless, during periods of higher risk (i.e. dry and strong winds towards the south) waste processing operations will cease, until more favourable conditions prevail.

The proposed small-scale activity is very unlikely to contribute any more noise than is currently being produced by the mineral activities with the quarry. In addition, the SSSI/SAC/Nature Reserve is mainly designated for rare species of plant life and insects, which are less sensitive to noise. Therefore, noise is unlikely to pose any further risk to the SSSI when compared to the present mineral operations.

3.3 Protected Habitat and Sites of Importance for Nature Conservation (SINCs)

Following the feedback (PAN026461, annex 1) from the first submission of this application, NRW informed us of additional sensitive receptors within a nearby proximity to the proposed permit area, of which were not picked up in the original screening from the available sources. The following SINCs (otherwise known as Local Wildlife Sites) were identified:

- Graianog (north), 19 m north/northwest; and,
- Cefn Graianog, 145 m northeast.

In addition to this, one protected habitat was identified:

- Purple moor grass and rush pastures, 57 m northeast.

Plans illustrating the locations/extents of the abovementioned SINCs and protected habitat from the basic NRW habitats and conservation screening have been attached as Appendix 2. Any further information regarding these receptors is not publicly available.

The following mitigation measures have been employed to mitigate any impact on the protected habitat and SINCs.

Surface water from the proposed waste processing and storage area will be contained and drained into a collection point within the permit boundary (see drawing K0642-1003 Site Layout and Drainage Plan). This collected water will then be pumped west into the existing silt lagoons. Prior to waste operations commencing, a bund will be put in place along the southern permit boundary, and the existing bund will be extended toward the northwest to contain the surface water within the permit boundary. Both the SINCs and protected habitat lie upgradient of the proposed permitted area and therefore it is unlikely that any water will migrate upwards towards these receptors.

Active dust control measures are proposed, detailed in Table 4. The prevailing wind direction for the area is from southwest towards the northeast.

The Graianog (north) SINC is located north/northwest of the Site, therefore any dust produced from the activity is unlikely to be carried towards this receptor (frequency of wind blowing north/northwest is 1.1%). Therefore, there is not considered a feasible pathway for any dust originating from the proposed activity to reach the Graianog (north) SINC.

However, both the protected habitat and part of the Cefn Graianog SINC are located northeast of the proposed permitted area, in the prevailing wind direction. The frequency of wind blowing in the northeast direction is 25.1%. To reduce the likelihood of any dust generated during the activity travelling toward these receptors, during periods of higher risk, such as long periods of no rainfall resulting in dry ground conditions and during high wind conditions as defined by Scale 9 of the Beaufort Wind Scale[3], waste processing operations will cease, until more favourable conditions

[3] https://weather.metoffice.gov.uk/guides/coast-and-sea/beaufort-scale

prevail. Additionally, materials in stockpiles within the storage area will be dampened down/sheeted if weather conditions deem it necessary.

The proposed activity will use the same/similar plant and machinery to what is already used as part of the quarrying operation. The dust produced by the proposed soil recycling/recovery activity are unlikely to have any impact on the total dust emissions produced by the quarrying activity, consequently there is unlikely to be any further impact on nearby sensitive receptors regarding dust than those already produced.

3.4 Environmental Accidents

The Agency guidance requires the completion of an Accident Risk Assessment Management Plan. This should assess potential hazards associated with the proposed activity not described in the sections above.

An accident management plan is detailed in Table 6.

Table 2 Odour Risk Assessment and Management Plan

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc .**	**Freq (%)**					
Odour through the Air: from exposed waste and wastes received.	1	325 – 780	W - NW	0.3 - 0.5	Low – no source & distant	High – odour annoyance (residential)	Medium	Waste Acceptance Protocols ensure wastes have low organic content and therefore negligible gas / odour potential. Regular olfactory monitoring will be conducted and will take account of meteorological conditions and potential impacts of odour (however unlikely) on receptors. A complaints procedure is in place onsite, and all complaints and remedial action will be recorded in accordance with the Site's EMS.	Low
	2	205	ESE	0.8	Low – no source	High – odour annoyance (residential)	Medium		
	3	780 - > 1000	NE - SE	0.9 - 25.1	Low – no source & distant	High – odour annoyance (residential)	Medium		
	4	415	S	1.4	Low – no source	Low – not sensitive to odour (SSSI)	Low		
	5	415	S	1.4	Low – no source	Low– not sensitive to odour (SAC)	Low		
	6	455	SSE	0.0	Low – no source	Low – not sensitive to odour (nature reserve)	Low		
	7	140	S	1.4	Low – no source	Low – transient odour annoyance (footpath)	Low		
	8	Along northeastern boundary	NE	25.1	Low – no source	Low – transient odour annoyance (public route)	Low		
	9	150	E	1.8	Low – no source	Low – transient odour annoyance (cycle path)	Low		
	10	892	NW	0.3	Low – no source & distant	Low – not sensitive to odour (ancient woodland)	Low		
	11	0 - 1000	NW-SW	0.3 – 7.3	Low – no source	Low – transient odour annoyance (road)	Low		
	12	30 – 220	W	0.5	Low – no source	Low – not sensitive to odour (lagoon)	Low		
	13	205 - 241	N - NE	2.4 – 25.1	Low – no source	Low – not sensitive to odour (rivers)	Low		
	14	119 - 229	E - SE	0.9 - 1.8	Low – no source	Low – not sensitive to odour (rivers)	Low		
	15	157 - 235	S - SW	1.4 – 7.3	Low – no source	Low – not sensitive to odour (rivers)	Low		
	16	205	N	2.4	Low – no source	Low – not sensitive to odour (rivers)	Low		
	17	800	WNW	0.3 - 0.5	Low – no source & distant	Low – not sensitive to odour (river)	Low		

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc .**	**Freq (%)**					
Odour through the Air: from exposed waste and wastes received	18	57	NE	25.1	Low – no source	Low – not sensitive to odour (protected habitat)	Low	As above.	Low
	19	19 - 300	NNW	1.1	Low – no source	Low – not sensitive to odour (SINC)	Low		
	20	145 - > 1000	NNE - SSE	0.0 - 25.1	Low – no source	Low – not sensitive to odour (SINC)	Low		

Table 3 Noise Risk Assessment and Management Plan

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc.**	**Freq (%)**					
Noise through air: from dry processing and screening	1	325 – 780	W - NW	0.3 - 0.5	Medium – moderate proximity to Site	High – noise annoyance (residential)	Medium	Activity is unlikely to generate noise in excess of current quarrying activity. Onsite speed limit of 10mph will be enforced and internal site roads will be maintained. Bund construction along southern boundary and southeast corner along with raising and thickening of existing bund along eastern boundary will provide noise screening between the processing area and closest potential sensitive noise receptor. Appropriate maintenance of site plant / vehicles in accordance with the manufacturers or supplier's instructions, particular attention will be given to the condition of any fitted silencers. As part of the procurement process consideration will be given to the noise emission specifications. Where reversing alarms are employed onsite on mobile plant and equipment, only broadband multi-frequency sound alarms (white sound) shall be used. Planning condition restricts site operational hours. Where practicable, engines to be switched off when not in use.	Low
	2	205	ESE	0.8	Medium – moderate proximity to Site	High – noise annoyance (residential)	Medium		
	3	780 - > 1000	NE - SE	0.9 - 25.1	Low – distant from Site	High – noise annoyance (residential)	Medium		
	4	415	S	1.4	Medium – moderate proximity to Site	Medium – potential to disturb wildlife (SSSI)	Medium		
	5	415	S	1.4	Medium – moderate proximity to Site	Medium – potential to disturb wildlife (SAC)	Medium		
	6	455	SSE	0.0	Medium – moderate proximity to Site	Medium – potential to disturb wildlife (nature reserve)	Medium		
	7	140	S	1.4	High – close proximity to Site	Low – transient noise annoyance (footpath)	Medium		
	8	Along north eastern boundary	NE	25.1	High – close proximity to Site	Low – transient noise annoyance (public route)	Medium		
	9	150	E	1.8	Medium – moderate proximity to Site	Low – transient noise annoyance (cycle path)	Low		
	10	892	NW	0.3	Low – distant from Site	Low – not sensitive to noise (ancient woodland)	Low		
	11	0 - 1000	NW-SW	0.3 – 7.3	High – close proximity to Site	Low – transient noise annoyance (road)	Medium		
	12	30 – 220	W	0.5	High – close proximity to Site	Low – not sensitive to noise (lagoon)	Medium		
	13	205 - 241	N - NE	2.4 – 25.1	Medium – moderate proximity to Site	Low – not sensitive to noise (rivers)	Low		

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc.**	**Freq (%)**					
Noise through air: from dry processing and screening	14	119 - 229	E - SE	0.9 - 1.8	High – close proximity from Site	Low – not sensitive to noise (rivers)	Medium	As above.	Low
	15	157 - 235	S - SW	1.4 – 7.3	Medium – moderate proximity to Site	Low – not sensitive to noise (rivers)	Low		
	16	205	N	2.4	Medium – moderate proximity to Site	Low – not sensitive to noise (rivers)	Low		
	17	800	WNW	0.3 - 0.5	Low – distant from Site	Low – not sensitive to noise (river)	Low		
	18	57	NE	25.1	High – close proximity from Site	Low – not sensitive to noise (protected habitat)	Low		
	19	19 - 300	NNW	1.1	High – close proximity from Site	Low – not sensitive to noise (SINC)	Low		
	20	145 - > 1000	NNE - SSE	0.0 - 25.1	Medium – moderate proximity to Site	Low – not sensitive to noise (SINC)	Low		

Table 4 Fugitive (Dust) Emissions Risk Assessment and Management Plan

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc.**	**Freq (%)**					
Dust through Air: from vehicle movements, deposits/stock piles of wastes and dust generated from dry processing.	1	325 – 780	W - NW	0.3 - 0.5	Medium – moderate proximity to Site, infrequently downwind	High – dust annoyance (residential)	Medium	No excessively dusty wastes to be accepted at the Site. Site staff will be appropriately trained and enforce strict waste acceptance protocols to manage the deposit of potentially dusty wastes. All vehicles transporting materials to and from Site will be sheeted and will be regularly maintained in accordance with the manufacturer's instructions. Onsite vehicle speed limit of 10 mph enforced to ensure that vehicle movements do not generate excessive dust. Dampening of site roads/surfaces as necessary using a tanker/bowser during dry periods. Daily visual inspection by appropriate site staff at suitable locations taking account of the prevailing wind direction. All vehicles will be inspected prior to leaving site for mud and wheels cleaned if necessary to prevent mud / dust being trailed onto adjacent roads and creating a hazard / nuisance.	Low
	2	205	ESE	0.8	Medium – moderate proximity to Site, infrequently downwind	High – dust annoyance (residential)	Medium		
	3	780 - > 1000	NE - SE	0.9 - 25.1	Medium – distant from Site but frequently downwind	High – dust annoyance (residential)	Medium		
	4	415	S	1.4	Medium – moderate proximity to Site, infrequently downwind	Medium – potential to deposit on sensitive wildlife (SSSI)	Medium		
	5	415	S	1.4	Medium – moderate proximity to Site, infrequently downwind	Medium – potential to deposit on sensitive wildlife (SAC)	Medium		
	6	455	SSE	0.0	Low – moderate proximity to Site, never downwind	Medium – potential to deposit on sensitive wildlife (nature reserve)	Low		
	7	140	S	1.4	High – close proximity to Site, infrequently downwind	Low – transient dust annoyance (footpath)	Medium		
	8	Along north eastern boundary	NE	25.1	High – close proximity to Site, frequently downwind	Low – transient dust annoyance (public route)	Medium		
	9	150	E	1.8	Medium – moderate proximity to Site, infrequently downwind	Low – transient dust annoyance (cycle path)	Low		
	10	892	NW	0.3	Low – distant from Site, infrequently downwind	Medium – potential to deposit on sensitive trees (ancient woodland)	Low		
	11	0 - 1000	NW-SW	0.3 – 7.3	High – close proximity to Site, occasionally downwind	Low – transient dust annoyance (road)	Medium		
	12	30 – 220	W	0.5	High – close proximity to Site, infrequently downwind	Low – not sensitive to dust (lagoon)	Medium		

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc.**	**Freq (%)**					
Dust through Air: from vehicle movements, deposits/stock piles of wastes and dust generated from dry processing.	13	205 - 241	N - NE	2.4 – 25.1	Medium – moderate proximity to Site, frequently downwind	Medium – potential for dust accumulation in watercourse / waterbody (rivers)	Medium	A street sweeper will regularly clean site access road of any mud trailed on from site vehicles. Drop height of materials will be minimised. Site to be kept tidy and hard standings to be kept clean to minimise dust. A complaints procedure is in place onsite, and all complaints and remedial action will be recorded in accordance with the Site's EMS. Materials in stockpiles within the storage area will be dampened down/sheeted If weather conditions deem it necessary.	Low
	14	119 - 229	E - SE	0.9 - 1.8	High – close proximity from Site, infrequently downwind	Medium – potential for dust accumulation in watercourse / waterbody (rivers)	Medium		
	15	157 - 235	S - SW	1.4 – 7.3	Medium – moderate proximity to Site, occasionally downwind	Medium – potential for dust accumulation in watercourse / waterbody (rivers)	Medium		
	16	205	N	2.4	Medium – moderate proximity to Site, infrequently downwind	Medium – potential for dust accumulation in watercourse / waterbody (river)	Medium		
	17	800	WNW	0.3 - 0.5	Low – distant from Site, infrequently downwind	Medium – potential for dust accumulation in watercourse / waterbody (rivers)	Low		
	18	57	NE	25.1	High – close proximity from Site, frequently downwind	High – potential for dust accumulation in protected habitat	High		
	19	19 - 300	NNW	1.1	Medium – close proximity to site, infrequently downwind	High – potential for dust accumulation at SINC	Medium		
	20	145 - > 1000	NNE - SSE	0.0 - 25.1	Medium – moderate to distant from site, infrequently to frequently downwind	High – potential for dust accumulation at SINC	Medium		

Table 5 Fugitive Emissions (Mud) Risk Assessment and Management Plan

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc .**	**Freq (%)**					
Fugitive mud emissions generated by: Vehicle movements and handling of waste onsite.	1	325 – 780	W - NW	0.3 - 0.5	Medium – moderate proximity to Site access roads	High - mud on highway causing annoyance and hazardous road conditions.	Medium	Internal roads will be maintained and cleaned as necessary. Exit length has been maximised to reduce the risk of debris deposition on the public highway. Site staff will check departing vehicles. Vehicles will be cleaned if necessary. A road sweeper will be employed as necessary. A daily visual inspection will be made of the public highway and recorded and any remedial action undertaken will be recorded. Procedures will be put in place to allow local residents to report any unsatisfactory road conditions. A complaints procedure is in place onsite, and all complaints and remedial action will be recorded in accordance with the Site's EMS.	Low
	2	205	ESE	0.8	Medium – moderate proximity to Site access roads	High - mud on highway causing annoyance and hazardous road conditions.	Medium		
	3	780 - > 1000	NE - SE	0.9 - 25.1	Medium – moderate proximity to Site access roads	High - mud on highway causing annoyance and hazardous road conditions.	Medium		
	4	415	S	1.4	Low – No physical connection	Low – no impact	Low		
	5	415	S	1.4	Low – No physical connection	Low – no impact	Low		
	6	455	SSE	0.0	Low – No physical connection	Low – no impact	Low		
	7	140	S	1.4	Low – No physical connection	Moderate – Mud on footpath causing annoyance	Low		
	8	Along northeastern boundary	NE	25.1	High – access road running past northeastern boundary of the site	Moderate – Mud on footpath causing annoyance	Medium		
	9	150	E	1.8	Low – No physical connection	Moderate – Mud on cycle route causing annoyance	Low		
	10	892	NW	0.3	Low – No physical connection	Low – no impact	High		
	11	0 - 1000	NW-SW	0.3 – 7.3	High – close proximity to access roads	High - mud on highway causing annoyance and hazardous road conditions.	High		
	12	30 – 220	W	0.5	Low – No physical connection	Low – no impact road conditions.	Low		

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc .**	**Freq (%)**					
Fugitive mud emissions generated by: Vehicle movements and handling of waste onsite.	13	205 - 241	N - NE	2.4 – 25.1	Low – No physical connection	Low – no impact	Low	As above.	Low
	14	119 - 229	E - SE	0.9 - 1.8	Low – No physical connection	Low – no impact	Low		
	15	157 - 235	S - SW	1.4 – 7.3	Low – No physical connection	Low – no impact	Low		
	16	205	N	2.4	Low – No physical connection	Low – no impact	Low		
	17	800	WNW	0.3 - 0.5	Low – No physical connection	Low – no impact	Low		
	18	57	NE	25.1	Low – No physical connection	Low – no impact	Low		
	19	19 - 300	NNW	1.1	Low – No physical connection	Low – no impact	Low		
	20	145 - > 1000	NNE - SSE	0.0 - 25.1	Low – No physical connection	Low – no impact	Low		

Notes: * approximate distance via road

Table 6 Accident Management Plan

Hazard	Receptor	Pathway	Probability	Consequence	Overall Risk	Risk Management	Mitigated Risk
Fuel / engine oil Leak or damage to portable fuel bowser, static fuel storage tank or site vehicles	Groundwater	Base of quarry	Low	High - pollution of groundwater	Medium	Fuel and engine oils will be stored with appropriate secondary containment and spillage contingencies. Site vehicles and plant subject to regular preventative maintenance in accordance with EMS procedures.	Low
Fire Accidental fire associated with plant and equipment.	Groundwater	Base of quarry	Low	High - pollution of groundwater through firewater run-off or leaks from damaged equipment	Medium	Wastes to be accepted at site will have a low organic content and are inherently non-combustible in nature. Site vehicles and plant subject to regular preventative maintenance in line with site EMS procedures. Fire control equipment will be on hand as marked on K0642.1003, with major incidents to be dealt with by the Fire Brigade in accordance with site EMS Procedures. No smoking except in designated areas.	Low
	Receptors listed in Table 1 above	Airborne	Low	Medium - smoke / odour annoyance	Medium		
Explosion Compressed gas cylinders, combustion of gas or fuel storage tank	Site staff	Airborne	Low	High - danger of serious injury	Medium	Fuel is stored in appropriate containers with appropriate controls to prevent fire or explosion (i.e. no smoking onsite). Compressed gases not required and therefore not present for operation. Low organic content of waste will generate negligible volumes of landfill gas and will not present an explosion risk.	Low
	Groundwater	Base of quarry	Low	High - pollution of groundwater through leaks from damaged equipment	Medium		
Vandalism Damage to site vehicles, fuel bowsers, gas or leachate extraction pipework	Groundwater	Base of quarry	Low	High - pollution of groundwater through leaks from damaged equipment	Medium	Existing site security will prevent access by unauthorised persons. Vehicles will be kept overnight in a secure area with appropriate security measures. Wastes not expected to require exposed active gas or active leachate control infrastructure which could be subject to damage.	Low
	Receptors listed in Table 1 above	Airborne	Low	Medium - odour annoyance	Medium		

4 Conclusions

The operational hazards associated with the proposed permit application have been considered in the tables above. It has been concluded that with the use of appropriate mitigating controls where necessary, the operation does not present a significant risk to surrounding receptors.

The potential hazards for emissions to groundwater and surface water, odour, noise, dust, mud and accidents have been considered and the risks associated have been reduced and managed as far as reasonably practicable. The most sensitive receptors have been identified and their impacts of any emissions from the Site have been addressed with mitigation measures in place. As a result, it is considered that any emissions from the Site will not have a detrimental impact on the sensitive receptors identified.

5 Drawings

Drawing No. K0642-1002 (Site Receptor Plan)

Drawing No. K0642-1003 (Site layout and Drainage Plan)

Appendix 1

Dust and Emissions management Plan

Cefn Graianog Quarry
Dust and Emissions Management Plan

Client: TG Group

Ref No.: K0642-ENV-R005-03
Date: June 2025

Document control

Revision	Revision/ Review Date	Details of Issue	Authorised		
			Prepared By	Checked By	Approved By
00	June 2024	Draft	O Smith	C Heward	C Heward
01	July 2024	For Issue to NRW	O Smith	C Heward	C Heward
02	April 2025	Updated for resubmission to NRW	O Smith	C Heward	J Baxter
03	June 2025	Updated following NRW comments	G Sharkey	E Greenhalgh	E Greenhalgh
04	August 2025	Updated following NRW comments	G Sharkey	E Greenhalgh	J Baxter

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1 Introduction

1.1 Background

This Dust and Emissions Management Plan has been prepared in support of a permit application for a proposed soil recycling and recovery activity at Cefn Graianog Quarry. The Site is located in Llanllfni, Caernarfon, North Wales (LL54 6SY).

The proposed permit area (referred to as 'Site' hereafter) is located within the greater quarry area of Cefn Graianog Quarry, an active sand and gravel quarry. The site surfacing will comprise hardstanding. The north/eastern boundary of the Site is bordered by an access track and the western boundary of the Site is defined by a conveyor, and beyond this, a large surface water lagoon. The southern boundary is undefined by surface features and comprises quarry workings and the quarry yard/offices further south. Farmland surrounds the Site in all directions and a forested area lies just 65 m northeast of the Site. Several residential and farming buildings are located in the area surrounding the Site, the nearest residential property of which is situated approximately 205 m to the east/southeast, on the track to the Site entrance. The other properties are located over 450 m away.

The purpose of this Dust and Emissions Management Plan is to identify which aspects of the soil recycling and recovery activity are likely to cause a potentially harmful emission of uncontrolled dust and how these emissions will be minimised.

A copy of this Dust and Emissions Management Plan will be included in the site's Environmental Management System (EMS) held at the Site Office and all members of staff will have access to this document.

In the absence of any template available from National Resources Wales (NRW), this report makes reference to the dust and emissions management plan template provided by the Environment Agency, specifically the following sections:

- Dust and Particulate Management:
    - Responsibility for Implementation of the dust management plan;
    - Sources and control of fugitive dust;
    - Potential pathways and receptors to fugitive dust;
    - Fugitive dust risk assessment;
- Visual and Quantitative Monitoring; and,
- Community Engagement, Reporting and Contingencies.

2 Dust and Particle Management

2.1 Responsibility for Implementation

The Site Manager would be responsible for implementing the dust management plan. Additional support will be provided by the Technical Competent Manager (TCM) within TG Group. Provision of an appropriate TCM is necessary to demonstrate to NRW that the applicant is a fit and proper person, a test all prospective environmental permit holders must pass to be granted a permit. The Site Manager and/or TCM would be responsible for the training of site staff.

TG Group has produced an Environmental Management System (EMS) for the site, it is intended that the dust management plan would form part of the EMS.

All staff to be employed on site would be given training and instruction on implementing the dust management plan. Training will be part of the initial induction process and reviewed annually.

All site staff would be responsible for visual monitoring of dust and would be instructed on appropriate reporting and actions.

All third-party contractors would be required to be inducted; the induction process would include their responsibility concerning compliance with the dust management plan.

The DMP will be reviewed, as a minimum, on an annual basis with the scheduled review of the Site's EMS or as required with every major increase, or alteration to the dust emissions. Following any review of the DMP, staff will be retrained on the content of the DMP.

2.2 Proposed Operations

The proposed permit area is part of the larger Cefn Graianog Quarry which is an active sand and gravel quarry operated by TG Aggregates. Sand and gravel have been extracted from this quarry since the 1970's (Report No. K0642-ENV-R001-02). The proposed permit area is shown with respect to the wider quarry on the drawing refenced K0642-1000, attached to this report.

This permit application proposes to recycle and recover inert waste primarily arising from dredging, excavation and demolition activities by means of physical treatment, limited to screening and the associated handling of material, to produce a non-waste aggregate in accordance with the WRAP quality protocol. The Site currently processes on-site material therefore the proposed activities are similar to the activities currently undertaken at the Site but proposes the use of imported wastes. The proposed activity will be undertaken on hardstanding.

It is understood that the proposed activity would fit the criteria of the Standard Rules permit SR2010 No. 12 (treatment of waste to produce soil, soil substitutes and aggregate – up to 75,000 tonnes) apart from the proximity of the Cors Gyfelog SSSI and Corsydd Eifionydd/Eifionydd Fens Special Area of Conservation (SAC) to the Site, both 415 m south of the proposed permit boundary. Hence, a bespoke permit application which considers the specific risks to the SSSI/SAC is required

The proposal summary is as follows:

- Dry processing, limited to screening and associated handling of material within the proposed permit boundary;
- Treating up to 50,000 tonnes per year with up to 20,000 tonnes (~10,000 m^3) stored at any one time within the permit boundary. The proposed areas for storage of waste will be in the processing area and for product material will be in the product stockpile area;
- Waste types are proposed to include the following:
    - 01 04 08 waste gravel and crushed rocks;

  - 01 04 09 waste sand and clays;
  - 17 05 04 soil and stones other than those mentioned in 17 05 03;
  - 17 01 01, 17 01 02, 17 01 03 concrete, bricks, tiles and ceramics;
  - 17 01 07 mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06;
  - 17 03 02 bituminous mixtures other than those mentioned in 17 03 01;
  - 17 05 06 dredging spoil other than those mentioned in 17 05 05, and,
  - 20 02 02 soil and stones.
- Surface water run-off from the permitted area to be contained and drained into a small lagoon located within the east of the permitted area, which will then be pumped into a larger lagoon to the west of the permit boundary.

The primary entrance to the Site is from the signposted track just off the A487.

3 Potential Dust and Emission Sources

3.1 On-site Dust Emission Sources

The proposed activities utilising waste also has the potential to generate fugitive emissions. The wastes to be received will include inert dredgings construction and demolition wastes.

A summary of the waste deposit treatment is shown below in Table 1 with the approximate tonnage (per year).

Table 1- Waste Types

General Waste Description	Waste soils to be treated	Soils to be stored on site at any one time	Location
Inert waste soils originating from dredging, excavation and demolition activities	50,000 t/y	20,000 t/y	Within proposed permit area, indicated on drawing referenced K0642-1003 (Site Layout and Drainage Plan)

During dry weather which result in dry ground conditions being susceptible to generating dust and during high wind conditions as defined by Scale 9 of the Beaufort Wind Scale[1], wastes can present a risk of fugitive dust emissions during transit and deposition and following placement. Fugitive dust emissions can potentially arise from the following site activities:

- Transport of waste to and upon the Site;
- Unloading of waste soils to waste stockpile area awaiting treatment;
- Treatment of waste soils via dry processing, limited to screening and associated handing;
- Wind-blown dust accumulated on site surfaces and stockpiling areas;
- Placement of waste by on-site plant; and,
- Vehicle movements on dusty roads.

[1] https://weather.metoffice.gov.uk/guides/coast-and-sea/beaufort-scale

Fugitive dust may present a dust nuisance to surrounding human receptors or cause an adverse impact if excessive deposits settle on sensitive habitats and smother sensitive plant life or surface water receptors as accumulated sediment.

3.2 Off-site Dust Emissions Sources

The Site is located within an active sand and gravel quarry which has the potential to generate dust emissions. Other sources of off-site dust include the surrounding roads.

The farmland surrounding the Site in all directions also has the potential to generate dust.

3.3 Control Measures for On-site Dust Emissions

The Site Manager or appointed deputy will be responsible for imposing restrictions or measures listed in Tables 2 and 3 during weather conditions that could generate dust such as dry weather which result in dry ground conditions being susceptible to generating dust and during high wind conditions as defined by Scale 9 of the Beaufort Wind Scale.

In order to minimise the risk of on-site dust emissions the control measures in this section have been put in place.

3.3.1 Waste Transport

Table 2- Control Measures for Waste Transport

Issue	Responsibility	Control Measures
Dry waste in HGVs becoming airborne during transport	Site Manager or appointed deputy Drivers	The main access road from the A487 to the main site and yard area of the quarry is currently surfaced with tarmac. The haul road to the west of the Site is also surfaced with asphalt/tarmac. Internal unpaved roads will be regularly graded and surfaced with suitable hardcore so that it does not become a source of mud and debris on the wheels of site traffic. The hard surfaced areas will allow sweeping by mechanical sweeper weekly or more regularly if there is any build-up of dust, mud or debris on the roads. Transporting waste to the site can result in fugitive dust emissions and accumulation of mud and debris at sensitive receptor locations. Wastes will be delivered to the Site by TG Enviro or third-party contractors. The transport of waste is regulated by Duty of Care code of practice issued under section 34(7) of the Environmental Protection Act 1990, this code requires that waste is stored securely to prevent escape during transport. All road-going HGVs will be subject to appropriate emission standards. All vehicles will arrive at site with sheeted covers which will only be removed to allow inspection of wastes by site staff. Vehicles will be re-sheeted following waste acceptance checks.
Vehicle movements onsite when transporting waste may generate dust from roads	Site Manager or appointed deputy Drivers	All hauliers will be informed of the Site rules at the point of entry to the Site, these will include measures to minimise dust and emissions including limiting vehicle speeds, no vehicle engine idling when stationary for prolonged periods to reduce exhaust emissions and appropriate locations to deposit wastes. All vehicles on site shall not exceed the speed limit of 10 mph. Speed limits will be clearly displayed using signage around the Site. If there has been a prolonged period of no rain fall, which results in dry ground conditions, speed limits will be reduced to 5 mph.

Issue	Responsibility	Control Measures
		The HGVs will (unless the waste is rejected) transport the waste along internal roads to the waste stockpile area where a second inspection will be undertaken by site staff prior to the placement of the waste by site plant. All internal roads including the hard surfaces will be inspected daily by site staff and recorded by the Site Manager. If an inspection identifies a risk of dust emissions then inspection frequency will increase to two times a day. Maintenance will also be increased accordingly. A tractor and bowser will be available to dampen down roads where there is any build-up of dust on internal roads. All site haul roads and access roads will be regularly maintained and cleaned to prevent the accumulation of mud and dusty material. Maintenance includes repairing potholes with repairs actioned within 72 hours of identification of damage. Road surfaces will be cleaned when there is any accumulation of mud or dusty materials to reduce the amount of mud or dusty materials tracked off-site. The Site Manager or appointed deputy will ensure dusty haul roads are wetted down to reduce wind whipped dust. Wetting of haul roads would be undertaken as a preventative measure if it is suspected that dust from the haul roads may be a problem.
Dry wastes on site may generate dust emissions	Site Manager or appointed deputy Drivers	Site staff will enforce strict waste acceptance protocols to manage the deposit of potentially dusty wastes. All waste will be subject to pre-acceptance checks to confirm suitability before the waste arrives on site (this will be regulated by the environmental permit). On site verification checks will confirm acceptability, these checks will consist of reviewing associated paperwork and inspection of the load. It is unlikely that any specific dusty loads will be received, however if the load is identified as unsuitable prior to deposit it will be rejected. If the load is identified as having the potential to generate dust at the point of deposit it would be damped with water spray prior to placement or reloading or rejection. In all cases all subsequent loads from the same source will be suspended until confirmed suitable.
Vehicles leaving the site may become contaminated with on-site wastes, which may be transports off-site.	Site Manager or appointed deputy Drivers	Any vehicles leaving site would be required to be inspected prior to site egress and wheels, if there is a build-up or mud and debris will be cleaned to reduce the risk of fugitive dust emissions on the public highway.

3.3.2 Waste Deposit in Stockpile Areas and Waste Treatment

Table 3 Control Measures for Stockpile Areas and Waste Treatment

Issue	Responsibility	Control Measures
Depositing of waste may generate dust emissions	Site operatives	Site operatives supervising deposit of the incoming waste material in the waste stockpile area prior to treatment will be in constant communication with the site office to advise on the current conditions at the stockpile area and the condition of on-site roads. Supervising site operatives will also advise the site office if dusty loads incorrectly described by the supplier have been accepted. Waste drop heights are to be minimised, it may be necessary for other site plant to be present by the HGVs (e.g. excavator) to help implement this. These vehicles will be subject to the same operational controls to reduce the risk of

Issue	Responsibility	Control Measures
		dust emissions. This applies to materials that have been treated and stored in on-site product stockpile areas pending removal/export.
Stockpiled waste may generate dust, mud and debris if not stored correctly. Wind whipping of stockpiles	Site Manager or appointed deputy	The surfacing of the stockpile areas and waste treatment areas are surfaced with suitable hardstanding. Any holes or soft spots that develop will be repaired immediately. The hardstanding allows sweeping by mechanical sweeper on a regular basis. A tractor and bowser will be available to dampen hard surfacing if dust builds up. Stockpiles of both waste and product, stored on-site, will not exceed 5 m in height, this is in line with the quarry rules. Waste will be stored with consideration of the location of nearby sensitive receptors and prevailing winds. Prior to waste operations a bund will be constructed along the southern boundary of the site to manage surface water. This will also act as a wind break for stockpiles on site to reduce the risk of wind whipping. The waste stockpiles and weather will be monitored daily and if there are weather conditions, such as long periods of no rainfall and high wind conditions as defined by Scale 9 of the Beaufort Wind Scale, or signs of dust the following procedures will be implemented • Dampening down waste and product at point of deposit in the stockpile areas; • Selecting deposit areas within stockpile areas that are sheltered from the wind; • Dampening down stockpiles using bowser with spray nozzle or potentially covering them with sheeting; • Restricting waste types that can be deposited (i.e. not accepting wastes with a high dust generation potential); and • Suspending waste acceptance operations.
Treatment activities (dry processing) and equipment may generate dust emissions	Site Manager or appointed deputy	The activity will use the same plant already used for quarry activities. This plant has previously been suitable for ensuring dust emissions has not impacted nearby sensitive receptors. If the waste treatment activities are identifying to be generating dust emissions this will be investigated. The investigation will identify the source of the dust emissions and activities in relation to this will cease until resolved.

3.3.3 Dust Suppression Water Management

The Site Manager or appointed deputy will be responsible for imposing restrictions or measures during weather conditions that could generate dust such as dry weather which result in dry ground conditions being susceptible to generating dust and during high wind conditions as defined by Scale 9 of the Beaufort Wind Scale.

In the event there is a buildup of dust on internal roads and hard surfaces, clean water from the various surface water ponds located on site will be used for dust suppression, using a bowser towed by a tractor, and cleaning of wheels.

During drought conditions, if the large surface water lagoon dries up operations that pose any risk to creating dust will be suspended. Operations will not commence until the water source has replenished or an alternative source is found.

3.3.4 General Maintenance / House Keeping

The Site Manager or appointed deputy will be responsible for imposing restrictions or measures during weather conditions that could generate dust such as dry weather which result in dry ground conditions being susceptible to generating dust and during high wind conditions as defined by Scale 9 of the Beaufort Wind Scale.

All internal roads including the hard surfaces will be inspected daily by site staff and recorded by the Site Manager. The daily visual monitoring sheet can be seen in appendix 2. The Site Manager will enforce any necessary mitigation measures previously discussed to ensure there is no build up dust on internal roads and hard surfaces.

Road surfaces will be maintained to prevent and repair potholes with repair actioned within 72 hours of identification of damage.

Road surfaces will be cleaned if there is any accumulation of mud or dusty materials to reduce the amount of mud or dusty materials tracked off-site. The Site Manager or appointed deputy will ensure dry dusty waste and dusty haul roads are wetted down to reduce wind whipped dust. Wetting of haul roads would be undertaken as a preventative measure if it is suspected that dust from the haul roads may be a problem.

Any vehicles leaving site would be required to be inspected prior to site egress and wheels , if there is a build up or mud and debris wheels will be cleaned to reduce the risk of fugitive dust emissions on the public highway.

Site staff will be vigilant to excessive mud tracked from the site by visiting HGV's and site plant. Any vehicles observed to be carrying mud in their tyres would be directed to have their wheels cleaned. Drivers will be reminded as part of the site induction of their responsibility to maintain clean vehicles and not to track mud onto the public highway.

The asphalt access/egress road and haul road to the west may be swept by a standard mechanical road sweeper, the type that commonly operates safely on public highways adjacent to footpaths.

All systems involving water usage for dust management including dampening down of roads and on site wheel cleaning would be operational throughout the waste soil recycling and recovery activity, and maintained accordingly.

Monitoring and appropriate maintenance of the site access will form part of the EMS for the site.

All personnel employed on site will undertake visual monitoring for dust.

Any problems observed will immediately be reported to the Site Manager (or nominated deputy) who will be responsible for investigating the cause and implementing any necessary remedial plan.

All plant will be maintained in accordance with the manufacturer's instruction, critical spacers will be retained on site and hire arrangements will be in place for short term replacement of critical items of plant including such as bowser and road sweeper.

Dust generation is not expected to increase materially as the waste soil recycling and recovery activity is carried out alongside the quarrying activity. It is considered unlikely that significant dust emissions will be generated from this activity alone.

3.4 Remedial Actions for On-site Dust Emissions

In the unlikely event that unacceptable dust emissions arise from the site, one or more of the following remedial actions will be undertaken:

- Operations identified as generating unacceptable emissions of dust will be suspended until effective remedial actions have been taken or weather conditions resulting in the fugitive emissions have moderated;
- Additional dust suppression will be employed by spraying water onto affected areas;
- Where practicable on-site vehicle movement routes may be reconsidered with regard to location (i.e. relocating further from the receptor at risk), speed limits will be further reduced from 10mph to 5mph, or surfaces and gradients altered;
- All vehicles leaving the site will be inspected prior to egress and wheel cleaning may be employed if required, such as using a mobile pressure washer, brush and bucket, etc;
- Waste handling procedures may be altered and waste acceptance procedures reviewed, such as covering dusty wastes upon deposit, or stopping accepting problematic wastes; and,
- Quantitative monitoring may be implemented, if complaints are received and the corrective actions above have not resolved the problem, as discussed further in Section 7.

A record relating to the management and monitoring of dust will be maintained in the site log. This record will include the following details: a record of all dust events including date, time and the cause of the problem; a record of all complaints; details on the corrective action taken and any subsequent changes to operational procedures.

4 Potential Pathways

4.1 Airborne Pathways

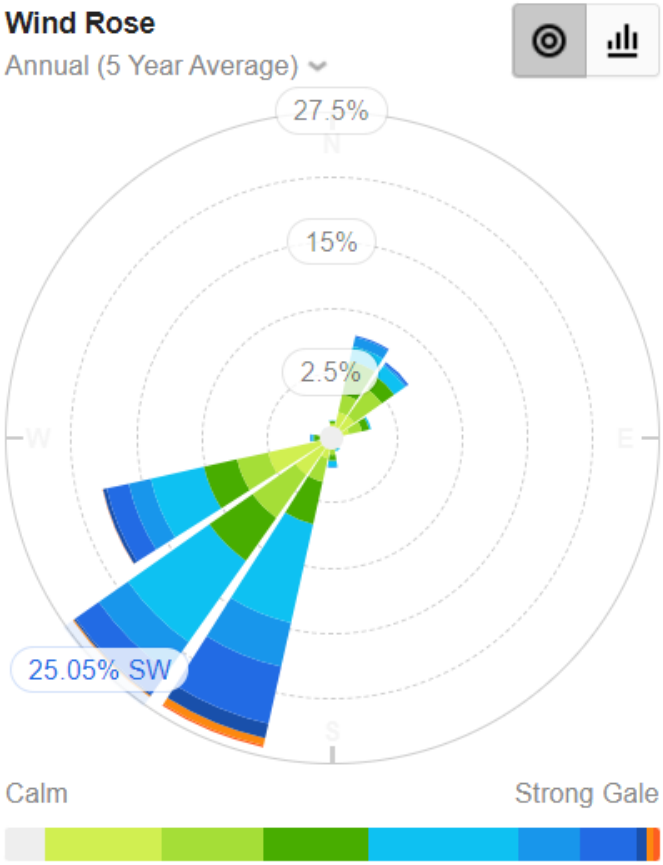
The potential pathways for dust and particulates to reach sensitive receptors are via the air or over land, namely via the wind. Waste is most likely to become during dry weather which result in dry ground conditions being susceptible to generating dust and during high wind conditions as defined by Scale 9 of the Beaufort Wind Scale.Transit of airborne emissions will be determined by the prevailing wind direction and physical obstructions.

Wind statistics have been referenced from data obtained at Porthmadog Weather Station[2] located 14.9 km southeast of the Site. The frequency the wind blows toward potentially sensitive receptors is detailed in Table 4.

The relevant wind rose is presented below in Figure 1, this data shows a statistical representation of data obtained between 2019 and 2025. Predominant wind direction is from the southwest blowing towards the northeast at ~22% (Figure 1).

[22] https://wind.willyweather.co.uk/wl/gwynedd/porthmadog.html

Figure 1 Porthmadog Wind Direction Distribution % (2019 – 2025)



4.2 Overland Pathways

Transit of emissions which could travel overland will primarily be limited by the distances to receptors from site and the locations of receptors in relation to the prevailing wind direction and less so by physical barriers such as the trees.

5 Potential Sensitive Receptors

5.1 Receptor Locations

When identifying the receptors, the closest and the most sensitive (if different from the closest) have been considered in each direction from the hazard. Account has been taken of the mechanism of transport to the sensitive receptor e.g. proximity to highway access / egress points for mud and wind direction for airborne dust. Recent wind direction from Porthmadog has been used to establish hazard pathways to adjacent receptors.

Probability of exposure is determined by the distance of the receptor to the site and the likelihood of the hazard reaching the receptor i.e. frequency of prevailing wind in that direction. The probability of exposure is irrespective of the type of hazard presented.

A review of the sensitive receptors has been completed in relation to the site; a list of receptors is shown in Table 4. The nearest sensitive receptors to the site are identified in drawing referenced K0642-1002, of which the most susceptible to dust are the following:

- Cors Gyfelog Site of Special Scientific Interest (SSSI) and Corsydd Eifionydd/Eifionydd Fens Special Area of Conservation (SAC);
- Graianog (north) Site of Importance for Nature Conservation (SINC);
- Cefn Graianog SINC;
- Purple moor grass and rush pastures protected habitat; and,
- Nearby residential/farming properties and campground.

Wind statistics have been referenced from data obtained at Porthmadog Weather Station (14.9 km to the southeast) for a 5-year period and details provided in Table 4 with reference to the relevant receptors identified in the vicinity of the site. The wind rose is reproduced as Figure 1.

The Environment Agency (Agency) guidance template for dust management requires consideration to be given to the impact of dust emissions on receptors within a 1km of the site boundary. Although Table 4 identifies potential receptors within a greater distance beyond 1km from the site boundary, these are considered to be at low risk.

A review of other local sources of dust and particulates has been completed in relation to the site and an assessment of each receptor type (in regard to sensitivity to dust) has been summarised in Table 5. Greatest sensitivity relates to habitats, residential, recreational, commercial uses, and public amenity.

Table 4- Sensitive Receptors

Receptor Number	Receptor	Receptor Type	Approx. Distance from Site Boundary (m)	Direction from Site	Freq (%) Prevailing Wind Direction
1	Residential/farming properties/campground	Residential / Agricultural	325 – 780	W - NW	0.3 - 0.5
2	Residential property located on access track to quarry	Residential / Agricultural	205	ESE	0.8
3	Properties off A487	Residential / Agricultural	780 - > 1000	NE - SE	0.9 - 25.1
4	Cors Gyfelog	Site of Special Scientific Interest	415	S	1.4
5	Corsydd Eifionydd/Eifionydd Fens	Special Area of Conservation	415	S	1.4
6	Cors Gyfelog	National Nature Reserve	455	SSE	0.0
7	Public Footpath	Public Footpaths	140	S	1.4
8	Public route of access	Public route of access	Along northeastern boundary of the Site	NE	25.1
9	Traffic free off-road cycle route along old railway track	Cycle route	150	E	1.8
10	Ancient Semi Natural Woodland	Ancient Semi Natural Woodland	892	NW	0.3
11	Unnamed roads and A487	Highways	0 - 1000	All directions	0.3 – 7.3
12	Silt Lagoons associated with quarry	Waterbody	30 – 220	W	0.5
13	3 No Inland river not influenced by tidal action	Watercourse	205 - 241	N - NE	2.4 – 25.1
14	4 No Inland river not influenced by tidal action	Watercourse	119 - 229	E - SE	0.9 - 1.8
15	2 No Inland river not influenced by tidal action	Watercourse	157 - 235	S - SW	1.4 – 7.3
16	1 No Inland river not influenced by tidal action	Watercourse	205	N	2.4
17	Afon Desach	Watercourse	800	WNW	0.3 - 0.5
18	Purple moor grass and rush pastures	Protected Habitat	57	NE	25.1
19	Graianog North Site of Importance for Nature Conservation (SINC)	Site of Importance for Nature Conservation (SINC) / Local Wildlife Site	19 - 300	NNW	1.1
20	Cefn Graianog Site of Importance for Nature Conservation (SINC)	Site of Importance for Nature Conservation (SINC) / Local Wildlife Site	145 - > 1000	NNE - SSE	0.0 - 25.1
1	Residential/farming properties/campground	Residential / Agricultural	325 – 780	W - NW	0.3 - 0.5

Receptor Number	Receptor	Receptor Type	Approx. Distance from Site Boundary (m)	Direction from Site	Freq (%) Prevailing Wind Direction
2	Residential property located on access track to quarry	Residential / Agricultural	205	ESE	0.8
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4	Cors Gyfelog	Site of Special Scientific Interest	415	S	1.4
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6	Cors Gyfelog	National Nature Reserve	455	SSE	0.0
7	Public Footpath	Public Footpaths	140	S	1.4
8	Public route of access	Public route of access	Along northeastern boundary of the Site	NE	25.1
9	Traffic free off-road cycle route along old railway track	Cycle route	150	E	1.8
10	Ancient Semi Natural Woodland	Ancient Semi Natural Woodland	892	NW	0.3
11	Unnamed roads and A487	Highways	0 - 1000	All directions	0.3 – 7.3
12	Silt Lagoons associated with quarry	Waterbody	30 – 220	W	0.5
13	3 No Inland river not influenced by tidal action	Watercourse	205 - 241	N - NE	2.4 – 25.1
14	4 No Inland river not influenced by tidal action	Watercourse	119 - 229	E - SE	0.9 - 1.8
15	2 No Inland river not influenced by tidal action	Watercourse	157 - 235	S - SW	1.4 – 7.3
16	1 No Inland river not influenced by tidal action	Watercourse	205	N	2.4
17	Afon Desach	Watercourse	800	WNW	0.3 - 0.5
18	Purple moor grass and rush pastures	Protected Habitat	57	NE	25.1
19	Graianog North Site of Importance for Nature Conservation (SINC)	Site of Importance for Nature Conservation (SINC) / Local Wildlife Site	19 - 300	NNW	1.1
20	Cefn Graianog Site of Importance for Nature Conservation (SINC)	Site of Importance for Nature Conservation (SINC) / Local Wildlife Site	145 - > 1000	NNE - SSE	0.0 - 25.1

Frequency stats from Black Rock Sands, Porthmadog, Gwynedd - WillyWeather. The prevailing wind direction is the direction / frequency towards the receptor.

Table 5- Types of Receptors

Receptor Type	Sensitivity to Dust
Habitats / Watercourses	High
Residential	High
Recreational	High
Commercial	High
Public Amenity	High
Public Highways / Railways / Footpaths	Moderate
Industrial / Agricultural	Low to Moderate

5.2 Receptor Types

Habitats and Watercourses

The Cors Gyfelog SSSI and Corsydd Eifionydd/Eifionydd Fens SAC are located 415 m south of the Site, the Cors Gyfelog National Nature Reserve is situated 455 m south/southeast of the Site, the Graianog (north) SINC lies 19 m north/northwest and an Ancient Semi Natural Woodland is located 892 m northwest of the Site. It is noted that none of these receptors are located downwind of the prevailing wind direction, which is from the southwest toward the northeast (Figure 1).

The Cefn Graianog SINC is located 145 m northeast and the protected habitat for purple moor grass and rush pastures is located 57 m northeast of the Site, in the prevailing wind direction. The control measures discussed in Section 3 will be implemented to reduce the likelihood of any dust generated from the activity travelling towards these receptors, including ceasing operations during periods of higher risk (i.e. Dry with strong winds towards the northeast) until more favourable conditions prevail.

There are 3 No. rivers located 205-241 m north to northeast, 4 No. rivers located 119-229 m east to southeast, 2 No. rivers located 157-235 m south to southwest, one river located 205 m north of the site and the Afon Desach, located 800 m west/northwest of the Site. The 3 No. rivers located 205-241 m north to northeast and the Afon Desach (however distant) are located downwind of the prevailing wind direction.

Residential, recreational, industrial and commercial premises

The potential emissions from the Site are likely to have a similar impact on persons occupying residential and recreational premises (campground). Exposure of emissions to persons at agricultural premises may be lower as they are more likely to be inside during the working day or they may be transient visitors to the premises. Certain agricultural premises may generate similar emissions similar to the Site and the employees may be desensitised as a result.

Fine dust particulates may be able to travel further than larger particles that may settle on surfaces nearby. Finer particulates may elicit an unpleasant or harmful respiratory effect from sensitive individuals, whilst settlement of dust may be unsightly or damaging by smothering to sensitive flora. Dust is less likely to affect internal spaces; however, a sustained source of fine suspended particulates may eventually permeate inside buildings.

The proposed permitted activities are unlikely to generate dust in such sufficient quantities that a plume would be visible beyond the site boundary. The proposed working hours and may affect persons in residential housing, but have little effect on persons in businesses operating to normal working hours e.g. 0900 to 1700.

The closest residential property is located on the access track to the quarry, 205 m east/southeast of the Site. More residential properties are located 325-780 m west/northwest and 780 to over 1000

m northeast to southeast, off the A487. Although some of the properties along the A487 are located in the prevailing wind direction (towards the northeast), these are at a large distance and therefore dust particles are unlikely to reach these properties.

For conservatism this management plan assumes the residences are occupied during the operational hours of the Site by members of the public most sensitive to emissions from the Site.

It is likely that the combination of operational controls, distance to the receptors and the prevailing wind direction prevent most potentially harmful emissions from reaching receptors. As such these receptors noted above are considered unlikely to be sensitive to dust emissions associated with the Site.

Highways, railways and footpaths

The transitory nature of highways, cycle routes or footpaths means receptors using those locations will be exposed to potential emissions from the Site for shorter (albeit variable) periods of time than residences and agricultural premises. Pedestrians will have longer and more direct exposure to emissions compared to vehicle users who are less likely to be exposed to emissions and for significantly shorter periods of time.

Several unnamed roads lie 0-1000 m in all directions of the Site and the A487 lies 770 m east. None of these receptors lie downwind of the Site.

6 Dust Risk Assessment

6.1 Site Dust Emissions

The risk potential to each receptor as identified in Section 5 (Table 4) and shown on drawing referenced K0642-1002 from dust potentially generated from the Site is presented in Table 6 below.

This table evaluates the unmitigated risk to sensitive receptors from uncontrolled dust emissions and the control measures to be implemented at the Site in order to minimise and mitigate this risk, producing a revised residual risk to receptors.

With appropriate risk management measures in place, the overall risk from dust generated from site is considered “low” and the proposed soil recycling/recovery activity is unlikely to produce any further dust that is already produced within the quarrying activity. The effects from windblown emissions are envisaged to be minimal and not detrimental to sensitive receptors.

Table 6- Dust Fugitive Emission Risk Assessment and Management

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc.**	**Freq (%)**					
Dust through Air: from vehicle movements, deposits/ stockpiles of wastes and dust generated from dry processing	1	325 – 780	W - NW	0.3 - 0.5	Medium – moderate proximity to Site, infrequently downwind	High – dust annoyance (residential)	Medium	No excessively dusty wastes to be accepted at the Site. Site staff will be appropriately trained and enforce strict waste acceptance protocols to manage the deposit of potentially dusty wastes. All vehicles transporting materials to and from Site will be sheeted and will be regularly maintained in accordance with the manufacturer's instructions. Onsite vehicle speed limit of 10 mph enforced to ensure that vehicle movements do not generate excessive dust. Dampening of site roads/surfaces as necessary using a tanker/bowser during long periods of no rainfall. Daily visual inspection by appropriate site staff at suitable locations taking account of the prevailing wind direction. All vehicles will be inspected prior to leaving site for mud and wheels cleaned if necessary to prevent mud / dust being trailed onto adjacent roads and creating a hazard / nuisance.	Low
	2	205	ESE	0.8	Medium – moderate proximity to Site, infrequently downwind	High – dust annoyance (residential)	Medium		
	3	780 -> 1000	NE - SE	0.9 - 25.1	Medium – distant from Site but frequently downwind	High – dust annoyance (residential)	Medium		
	4	415	S	1.4	Medium – moderate proximity to Site, infrequently downwind	Medium – potential to deposit on sensitive wildlife (SSSI)	Medium		
	5	415	S	1.4	Medium – moderate proximity to Site, infrequently downwind	Medium – potential to deposit on sensitive wildlife (SAC)	Medium		
	6	455	SSE	0.0	Low – moderate proximity to Site, never downwind	Medium – potential to deposit on sensitive wildlife (nature reserve)	Low		
	7	140	S	1.4	High – close proximity to Site, infrequently downwind	Low – transient dust annoyance (footpath)	Medium		
	8	Along north eastern boundary	NE	25.1	High – close proximity to Site, frequently downwind	Low – transient dust annoyance (public route)	Medium		
	9	150	E	1.8	Medium – moderate proximity to Site, infrequently downwind	Low – transient dust annoyance (cycle path)	Low		
	10	892	NW	0.3	Low – distant from Site, infrequently downwind	Medium – potential to deposit on sensitive trees (ancient woodland)	Low		
	11	0 - 1000	NW-SW	0.3 – 7.3	High – close proximity to Site, occasionally downwind	Low – transient dust annoyance (roads)	Medium		
	12	30 – 220	W	0.5	High – close proximity to Site, infrequently downwind	Low – not sensitive to dust (lagoon)	Medium		
	13	205 - 241	N - NE	2.4 – 25.1	Medium – moderate proximity to Site, frequently downwind	Medium – potential for dust accumulation in watercourse / waterbody (rivers)	Medium		

Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	No.	**Dist. (m)**	**Direc.**	**Freq (%)**					
Dust through Air: from vehicle movements, deposits/ stockpiles of wastes and dust generated from dry processing	14	119 - 229	E - SE	0.9 - 1.8	High – close proximity from Site, infrequently downwind	Medium – potential for dust accumulation in watercourse / waterbody (rivers)	Medium	A street sweeper will regularly clean site access road of any mud trailed on from site vehicles. Drop height of materials will be minimised. Site to be kept tidy and hard standings to be kept clean to minimise dust. A complaints procedure is in place onsite and all complaints and remedial action will be recorded in accordance with the Site's EMS. Materials in stockpiles within the stockpile areas will be dampened down/sheeted If weather conditions deem it necessary.	Low
	15	157 - 235	S - SW	1.4 – 7.3	Medium – moderate proximity to Site, occasionally downwind	Medium – potential for dust accumulation in watercourse / waterbody (rivers)	Medium		
	16	205	N	2.4	Medium – moderate proximity to Site, infrequently downwind	Medium – potential for dust accumulation in watercourse / waterbody (river)	Medium		
	17	800	WNW	0.3 - 0.5	Low – distant from Site, infrequently downwind	Medium – potential for dust accumulation in watercourse / waterbody (rivers)	Low		
	18	57	NE	25.1	High – close proximity from Site, frequently downwind	High – potential for dust accumulation in protected habitat	High		
	19	19 - 300	NNW	1.1	Medium – close proximity to site, infrequently downwind	High – potential for dust accumulation at SINC	Medium		
	20	145 - > 1000	NNE - SSE	0.0 - 25.1	Medium – moderate to distant from site, infrequently to frequently downwind	High – potential for dust accumulation at SINC	Medium		

7 Monitoring

7.1 Meteorological Conditions

The Site Manager will be responsible for monitoring the weather conditions on a daily basis (or more regularly if deemed necessary). This will be done in advance via online sources such as the Met Office forecast website for Caernarfon (Gwynedd)[3] or from local broadcasts on television/radio for the area. If weather conditions are dry and wind conditions are forecast over a strong gale as defined by Scale 9 of the Beaufort Wind Scale then the Site Manager will visually monitor the site activities for potential dust emissions, and if required, restrictions will be put in place such as those discussed in Section 3.3.2 (dampening down stockpiles, using sheeting to cover stockpiles, ceasing waste treatment operations if necessary, etc.).

Visual monitoring of the weather conditions may be aided by the installation of a windsock nearby to the operations to show the wind direction and strength. All site staff would be responsible for reporting any adverse weather conditions to the Site Manager or the next level of management if the Site Manager is not available.

7.2 Visual Dust Monitoring

Visually monitoring will occur once daily for dust by the Site Manager and continuously by the operatives in the course of their duties to establish whether any dust is likely to leave the Site. This will include dust arising from vehicles arriving at site.

Records will be completed for each inspection and all site staff would be responsible for reporting dust and particulate problems as soon as practicable to the Site Manager or the next level of management if the Site Manager is not available.

The following locations (illustrated on Drawing Ref: K0642.1004) will be targeted for visual dust monitoring at the frequency above with additional checks throughout the day around the SSSI:

1. Site office/weighbridge (continuous monitoring of vehicles);
2. Point of waste deposition in the stockpile area;
3. Materials stockpiled in the stockpile areas;
4. Subject to prevailing wind direction (i.e. up and down wind), appropriate areas of the site perimeter.

The following information will be recorded during each round of monitoring:

- Name of assessor and position at facility e.g. weighbridge clerk etc.;
- Nature of any problem identified including location, source, date, time, duration, prevailing weather conditions and likely cause;
- On-site activities and operational condition at the time of the monitoring visit (this should include any of the abnormal events detailed in Section 7.8 below);
- Records of the likely source of any dust, even if it is not from the facility; and
- Details on the corrective action taken, realistic timeframes for remedial works and any subsequent changes to monitoring and operational procedures.

[3] https://weather.metoffice.gov.uk/forecast/gckyqc8wy#?date=2025-02-24

The Site Manager will be informed immediately of any findings of dust attributed to the Site and will authorise remedial measures to be taken.

Quantitative monitoring is not required at this Site.

8 Community Engagement, Reporting and Contingencies

8.1 Overview

Prevention will be viewed as the most effective means of controlling dust before an adverse impact occurs from uncontrolled emissions. The Source → Pathway → Receptor model determined above allows for the identification of the critical control points where dust can arise, how it can travel to a receptor and the likely impact.

The performance of a dust management system will ultimately be judged by the impact of the waste recycling and recovery activity on the receptors. Should complaints be received, a procedure will be in place to effectively deal with the issue in a sensitive, efficient and auditable manner.

The controls for each potential dust source are detailed in previous sections of this report. The management of those controls will be based on the on-going visual daily monitoring regime on site. The monitoring regime can work as an early warning system against potential problems (e.g. meteorological monitoring) or a diagnostic tool to establish the cause of a dust event.

8.2 Complaints Process

Any complaints received at the waste facility or via the Regulatory Bodies including the NRW and Local Authority, will be recorded using the form in Appendix 1.

This will instigate further visual dust monitoring at the location of the complaint and on-site to determine the extent and location of the dust generating materials and/or process will be identified. Where possible, as much information and detail about the complaint will be recorded, whether this is from the relevant authority or a complaint direct to the Site. This information will assist in the investigation and determining the source of the dust e.g. differentiating between potential dust from the Site or other off-site activities.

All complaints and queries will be logged in accordance with the environmental management system (EMS) as soon as is practicably possible. All complaints logged will be subject to investigation, and complainants responded to within 48 hours of receipt, where possible. All responses will be through trained and experienced staff.

In the event that a substantiated dust complaint or 5 or more in a 24-hour period is received arising from the facility, additional monitoring will be undertaken at the nearest sensitive receptors. The person conducting the survey shall make note of any dust at each monitoring point including those not of obvious waste facility site origin.

Complaints regarding dust from the facility will be investigated in accordance with the protocol, and appropriate records maintained which may include:

- Complaints received including name and contact details of complainant (if known), and the complainants description of the dust;
- Nature of problem including date, time, duration, prevailing weather conditions and cause of the problem;
- On-site activities and operational conditions at the time of the complaint;
- Records of the likely source of the dust, even if it is clearly not from the facility;
- Details on the corrective action taken and any subsequent changes to monitoring and operational procedures; and,

- NRW will be proactively informed by TG Group of the complaint and TG Group will confirm to the best of its knowledge the information described above.

If the investigations show that site operations are causing dust, mud or debris accumulation at a sensitive receptor the identified activity will cease until sufficient mitigations strategies, discussed in section 3.4, are implemented. The site will ensure that all dust, mud or debris is cleared from the area of concern for the complaint.

TG Group will ensure that the complainant has all the relevant contact details of the site (i.e. the Site Manager) and the officer responsible at NRW. TG Group will be in regular contact with the complainant and NRW whilst the cause of the dust is being investigated and remediated.

An evaluation of the effectiveness of the techniques used will be carried out on completion of any remedial measures, or if the complaints persist. Records of the above will be retained by site for future reference.

8.3 Means of Contact

The facility will be readily contactable to outside organisations and to members of the public. The site signage board (placed in a readily visible location) contains the necessary contact details for both the site operations and NRW. The company website also contains the necessary contact details for the Site.

https://www.tggroup.co.uk/

Any complaints received directly to site will be notified to NRW. Should an off-site issue arise, therefore, the complainant has a readily available means of getting in touch with TG Group.

8.4 Complaints Screening

As part of each dust complaint received, they will be objectively assessed against the wider environment to ensure that the source of the emission is traced back to the correct source. It is essential that the source is correctly identified in order that mitigating measures can be applied effectively and correctly. The complaint will also be assessed against previous records to place the nature of the complaint into context.

If patterns in complaints emerge, community groups or individuals (subject to their agreement) will be called upon to act as an additional dust monitoring resource.

8.5 Complaints Investigation

In the event that dust is found to be causing a problem from the site facility, as determined and confirmed by investigation into off-site complaints, or during routine monitoring, measures will be taken to determine the source of this dust and the following courses of action as detailed below shall be taken to ascertain if the dust is coming from the facility;

- Additional dust monitoring as detailed above to identify the extent of the dust emission and potential cause for the dust i.e. waste material and/or activity;
- Examination of the operational activities at the time of the dust complaint;
- Examination of the meteorological conditions at the time of the complaint;
- Carry out a review of the operational procedure and controls and instigate any control measures immediately following identification of the problem; and,
- Further visual monitoring will be carried out to ensure the issue has been addressed and to monitor the effectiveness of any control measures undertaken.

It is recognised that whilst complainants are encouraged to report valid complaints to the regulatory bodies, complaints that are received/submitted directly to the Site are able to be investigated more rapidly. As a result, complaints reported directly can be substantiated, reviewed and actioned quicker. With the complainant still able to report the complaint to the regulatory bodies after, should it be necessary.

Nevertheless, all complaints will be investigated.

8.6 Contingency and Emergency Plans

In the event that dust is proven to be from the Site and found to be causing a problem, as determined by the investigation of off-site complaints or during routine on-site monitoring, action will be taken to determine the source and the following courses of action. Control and mitigation measures for each stage of the waste management process are as described in Section 3 and summarised in Table 6.

Abnormal Events

This Dust and Emissions Management Plan assumes that the facility will be running under expected operational conditions. There are however circumstances that could result in a dust emission from the Site if not appropriately considered in advance, discussed below.

Strong Winds

Daily visual inspection of the site infrastructure will be undertaken and recorded. Additional inspection for damage resulting from high wind events will also be undertaken and contingency actions identified below considered should high wind conditions result in escape of significant dust emissions.

Hot / Dry Conditions

The warmer the weather the greater the potential for wastes to become dry and dusty, particularly when stored outside and when agitated. Daily inspections will be undertaken of the waste to ensure waste delivered to the Site is not dusty and stockpiles of waste are kept to an operational minimum and wetted down/sheeted if required to reduce dust emissions.

During prolonged periods of hot weather inspection frequency will be increased and the surface area of stored waste will be kept to a minimum.

Implementation of the Contingency plan and / or Emergency Plan

Unavailability should only take place due to unscheduled maintenance, emergency situations and for Health and Safety reasons such as a fire at the Site (although considered highly unlikely). In such cases the site staff will initially inform the Site Manager who will in turn inform service managers, the Local Authority and NRW. Site staff will implement measures to store or divert wastes as required.

Operator's Experience with Contingency / Emergency Situations

TG Group has a policy of continuous review of emergency and contingency procedures which helps improve procedures across TG Group's operations.

Review and Update of Contingency and Emergency Plans

The Contingency Plan and Emergency Plan will be reviewed following any incident where they have had to be followed. They will be updated as necessary with any lessons learned.

8.7 Records and Reviews

Records relating to the management and monitoring of dust will be maintained as necessary and will include the following details:

- The results of inspections and visual monitoring carried out by site personnel;
- Weather conditions including atmospheric pressure, wind speed and wind direction;
- Problems including date, time, duration, prevailing weather conditions and cause of the problem;
- Complaints received including name and address of the complainant; and
- Details of the corrective action taken, and any subsequent changes to operational procedures.

The Dust and Emissions Management Plan will be reviewed annually with the scheduled review of the Site's Environmental Management System or with every major decrease, or alteration to the dust generated at site (i.e. a change to dust source term, pathway or receptor).

8.8 Communication Tools

Stakeholders will typically include the Local Authority, NRW, Parish Councils and members of the local community. Other stakeholders may include local businesses and/or householders should the facility be deemed to impact upon them.

In addition, and as covered within the complaints section, contact details will be made available so that any complaints can be directed to site and an investigation undertaken immediately.

8.9 Remedial Actions for On-Site Dust Emissions

Fugitive dust emissions can potentially arise from the following site activities:

- Transport of waste to and upon the Site;
- Unloading of waste soils to waste stockpile area awaiting treatment;
- Treatment of waste soils via dry processing, limited to screening and associated handing;
- Wind-blown dust accumulated on site surfaces and stockpiling areas;
- Placement of waste by on-site plant; and,
- Vehicle movements on dusty roads.

The Site Manager or appointed deputy will be responsible for imposing restrictions or suitable mitigation measures during weather conditions that could generate dust such as dry weather which result in dry ground conditions being susceptible to generating dust and during high wind conditions as defined by Scale 9 of the Beaufort Wind Scale. If dust, mud or debris build up is noted during site inspections or during operations then the Site manager or appointed deputy will investigate the source of the emissions and impose restrictions or suitable mitigation measures.

The restrictions or suitable mitigation measures which may be undertaken are outlined below:

- Operations identified as generating unacceptable emissions of dust will be suspended until effective remedial actions have been taken or weather conditions resulting in the fugitive emissions have moderated;
- Additional dust suppression will be employed by spraying water onto affected areas;

- Where practicable on-site vehicle movement routes may be reconsidered with regard to location (i.e. relocating further from the receptor at risk), speed limits will be further reduced from 10 mph to 5 mph, or surfaces and gradients altered;
- All vehicles leaving the Site will be inspected prior to egress and wheel cleaning may be employed if required, such as using a mobile pressure washer;
- Waste handling procedures may be altered and waste acceptance procedures reviewed, such as covering or dampening dusty wastes upon deposit in the waste stockpile area, or stopping accepting problematic wastes.

A record relating to the management and monitoring of dust will be maintained in the site log. This record will include the following details: a record of all dust events including date, time and the cause of the problem; a record of all complaints; details on the corrective action taken and any subsequent changes to operational procedures.

9 Drawings

Drawing No. K0642-1000 (Proposed Permit Boundary)

Drawing No. K0642-1002 (Site Receptor Plan)

Drawing No. K0642-1003 (Site layout and Drainage Plan)

Drawing No. K0642-1004 (Visual Dust Monitoring Points Plan)

A3

349000mN

348800mN

348600mN

245600mE

245800mE

246000mE

246200mE

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GENERAL NOTES

GENERAL NOTES:

1. DO NOT SCALE OFF DRAWING.
2. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. ALL LEVELS IN METRES (ORDNANCE DATUM) UNLESS OTHERWISE NOTED.

LEGEND

PERMIT BOUNDARY

Rev	Date	Description	By	Chk	App
P01	19.04.24	FOR REVIEW	GH	OS	JB

ayesa

CLIENT

TG group Established 1874

PROJECT

CEFN GRAIANOG QUARRY
PERMIT APPLICATION

DRAWING TITLE

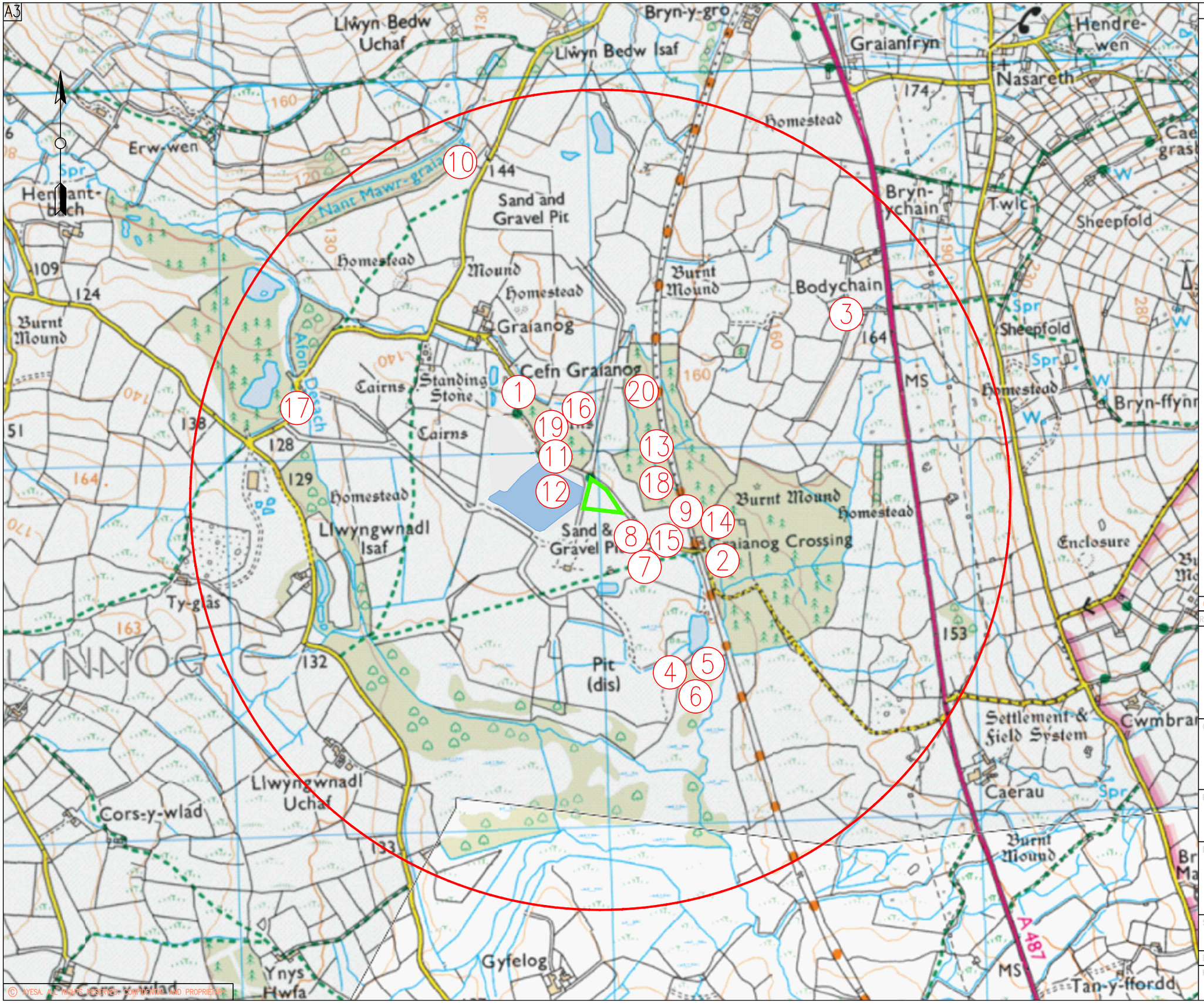
PERMIT BOUNDARY PLAN

STATUS	SUITABILITY
FINAL	–

Date: 15/04/25	Scale: 1:2000	Drawn: JM	Chk: GH	App: GH

Project No:	Drg. No:	Rev:
K0642	K0642–1001	P01

A3



GENERAL NOTES

GENERAL NOTES:

1. DO NOT SCALE OFF DRAWING.
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3. ALL LEVELS IN METRES (ORDNANCE DATUM) UNLESS OTHERWISE NOTED.

LEGEND

- PERMIT BOUNDARY
- 1000m BUFFER ZONE
- (1) RECEPTOR MARKER

Rev	Date	Description	By	Chk	App
01	24.02.25	AMENDS	JM	OS	JB

ayesa

CLIENT

TG GROUP Established 1874

PROJECT

CEFN GRAIANOG QUARRY
PERMIT APPLICATION

DRAWING TITLE

SITE RECEPTOR PLAN

STATUS				SUITABILITY
FINAL				–
Date: 17/05/24	Scale: 1:10,000	Drawn: JM	Chk: OS	App: JB
Project No: K0642	Drg. No: K0642–1002			Rev: 01

A3

APPROX.
6,000 t
CAPACITY

APPROX.
14,000 t
CAPACITY

HARDSTANDING SURFACE

QUARANTINE AREA

FIRE EXTINGUISHER/
FIRE FIGHTING STATION
LOCATION

GENERAL NOTES

GENERAL NOTES:

1. DO NOT SCALE OFF DRAWING.
2. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. ALL LEVELS IN METRES (ORDNANCE DATUM) UNLESS OTHERWISE NOTED.

LEGEND

- PERMIT BOUNDARY
- PRODUCT STOCKPILE AREA
- WASTE STOCKPILE & PROCESSING AREA
- SURFACE WATER COLLECTION POINT
- SURFACE WATER CONTAINMENT BUND
- DIRECTION OF SURFACE WATER DRAINAGE
- DIRECTION OF SURFACE WATER PUMPED FROM COLLECTION POINT INTO EXISTING LAGOONS

Rev	Date	Description	By	Chk	App
P04	24.02.25	TEXT ADDED AND AMENDS	GH	OS	JB
P03	24.02.25	AMENDS	JM	OS	JB
P01	19.04.24	FOR REVIEW	GH	OS	JB

ayesa

CLIENT

TG GROUP Established 1874

PROJECT

CEFN GRAIANOG QUARRY
PERMIT APPLICATION

DRAWING TITLE

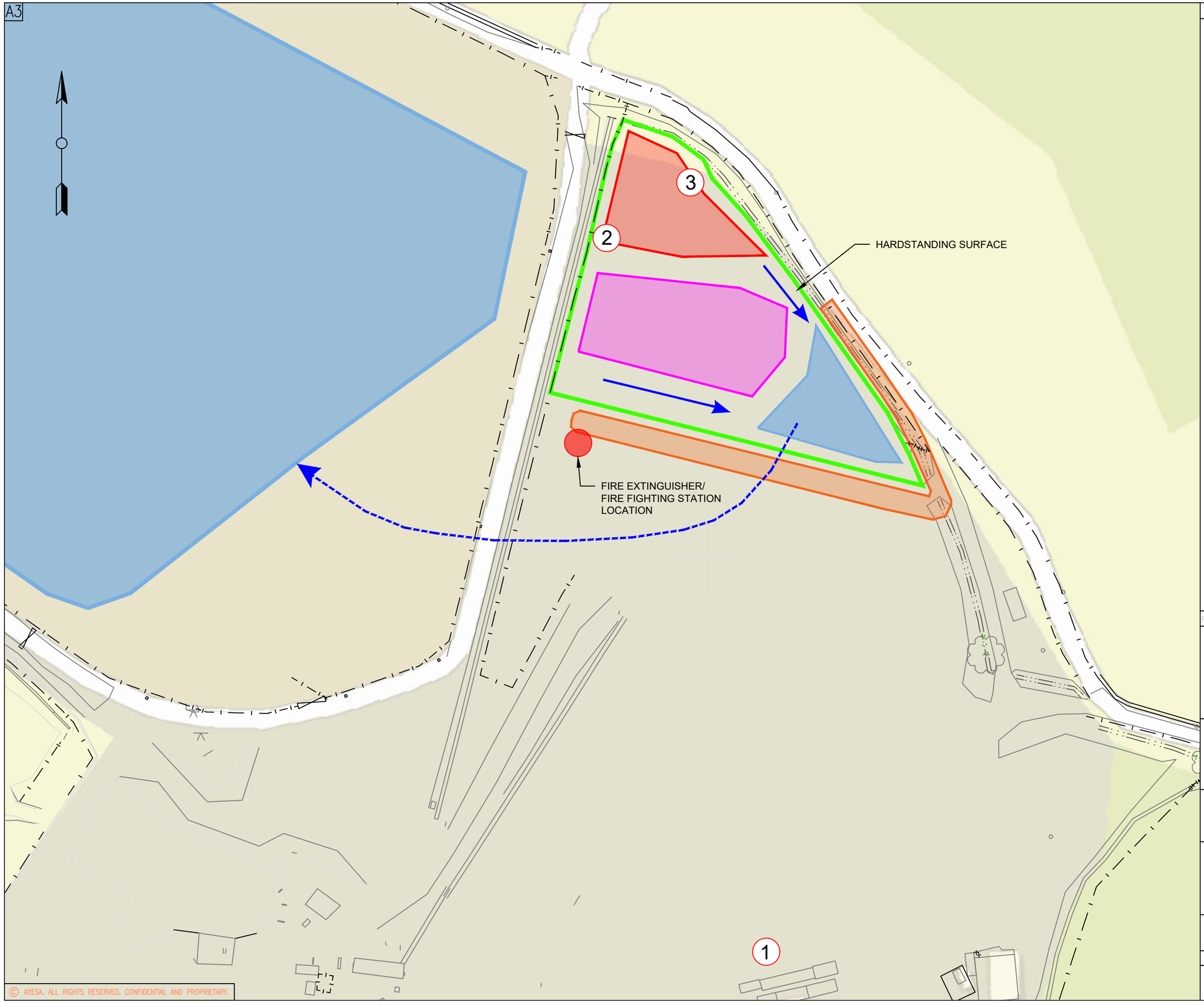
SITE LAYOUT AND DRAINAGE PLAN

STATUS	SUITABILITY
FOR REVIEW	–

Date: 17/05/24	Scale: 1:1'000	Drawn: JM	Chk: OS	App: JB

Project No:	Drg. No:	Rev:
K0642	K0642–1003	P04

A3



GENERAL NOTES

GENERAL NOTES:

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2. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. ALL LEVELS IN METRES (ORDNANCE DATUM) UNLESS OTHERWISE NOTED.

LEGEND

- PERMIT BOUNDARY
- STOCKPILE AREA
- PROCESSING AREA
- SURFACE WATER COLLECTION POINT
- SURFACE WATER CONTAINMENT BUND
- DIRECTION OF SURFACE WATER DRAINAGE
- DIRECTION OF SURFACE WATER PUMPED FROM COLLECTION POINT INTO EXISTING LAGOONS
- 1 SITE OFFICE/ WEIGHBRIDGE (CONTINUOUS MONITORING OF VEHICLES)
- 2 POINT OF WASTE DEPOSITION IN THE STORAGE AREA
- 3 MATERIALS STOCKPILED IN THE STORAGE AREA
- 4 TBC– SUBJECT TO PREVAILING WIND DIRECTION

Rev	Date	Description	By	Chk	App

ayesa

CLIENT

TG GROUP Established 1874

PROJECT

CEFN GRAIANOG QUARRY
PERMIT APPLICATION

DRAWING TITLE

VISUAL DUST MONITORING LOCATIONS PLAN

STATUS	SUITABILITY
FOR REVIEW	–

Date: 25/02/25	Scale: 1:1'000	Drawn: JM	Chk: OS	App: JB

Project No:	Drg. No:	Rev:
K0642	K0642–1004	03

Appendix 1

Dust Complaint Form

Customer Details	
Customer Name	
Address Postcode	
Customer Contact Details	
Tel	
Email	
Date	
Complaint Ref Number	
Complaint Details	

Investigation Details	
Investigation carried out by	
Position	
Date & Time investigation carried out	
Weather conditions	
Wind direction and speed	
Investigation findings	
Feedback given to Environment Agency and / or local authority	
Date feedback given	
Feedback given to public	
Date feedback given	

Review and Improve	
Improvements needed to prevent a reoccurrence	
Proposed date for completion of the improvements	
Actual date for completion	
If different insert reason for delay	
Does the dust and emissions management plan need to be updated	
Date that the dust and emissions management plan was updated	

Closure	
Site Manager review date	
Site Manager signature to confirm no further action required	

Appendix 2

Visual Monitoring Check and Action Form

Site: Cefn Graianog Quarry **Week Commencing:** ___ / ___ / ___
Observer: _____

Day	Weather (wind/rain/temp)	Dust Sources Observed (haul roads, stockpiles, processing, vehicle movements)	Dust Control Measures in Place (sprays, covers, sweeping, wheel wash)	Boundary Dust (N / S / E / W)	Corrective Action Needed	Initials of Observer
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						

Appendix 2

Quarry Inspection Sheets

Processing Plant Inspections - Weekly

Inspection Date:	

Main Field Conveyor	Item	Safe / Working Order	Defect / Comments
	Tail drum guarding	☐	
	Head drum guarding	☐	
	Conveyor drive guarding	☐	
	Take up loop guarding	☐	
	Belt scraper operation	☐	
	Lighting	☐	
	Spillage issues?	No	

Stockpile Conveyor	Item	Safe / Working Order	Comments
	Tail drum guarding	☐	
	Head drum guarding	☐	
	Conveyor drive guarding	☐	
	Spillage issues?		

Tunnel & Feeder	Item	Safe / Working Order	Comments
	Lighting	☐	
	Water ingress issues?	☐	
	Spillage Issues?	☐	
	Fire extinguisher	☐	

	Emergency escape tunnel access clear?	☐	

Tunnel Conveyor	Item	Safe / Working Order	Comments
	Tail drum guarding	☐	
	Feeder hopper nip point guarding	☐	
	Return Roller guard	☐	
	Drive belt guarding	☐	
	Head drum belt scraper operation	☐	
	secondary belt scraper operation	☐	
	Head drum access platform handrails	☐	
	Spillage issues?		

Barrel Conveyor	Item	Safe / Working Order	Comments
	Tail drum guarding	☐	
	Hopper nip point guarding	☐	
	Head drum guarding	☐	
	Head drum scraper	☐	
	Conveyor drive belt guarding	☐	
	Walkway	☐	
	Handrails	☐	
	Spillage issues?		

& 3rd Level	Item	Safe / Working Order	Comments
	Perimeter guarding	☐	
	Drive belt guarding	☐	

Washer Barrell	Walkway on upper level	☐	
	Handrails on upper level	☐	
	Stairway to upper level	☐	
	Spillage issues?		

	Item	Safe / Working Order	Comments
D11 Screen & 2nd Level	Screen drive belt guarding	☐	
	Screen spillage prevention mesh	☐	
	Walkway	☐	
	Handrails	☐	
	Spillage issues?		

	Item	Safe / Working Order	Comments
Beach Transfer Conveyor	Tail end guarding	☐	
	Mid-section conveyor guards	☐	
	Head drum guarding	☐	
	Drive belt guarding	☐	
	Walkway	☐	
	Handrails	☐	
	Spillage issues?		

	Item	Safe / Working Order	Comments
reen & 1st Level	Screen drive belt guarding	☐	
	Screen spillage prevention sides	☐	
	Walkway	☐	

D11 Sc			
	Handrails	☐	
	Spillage issues?		

Beach Stockpile Conveyor	Item	Safe / Working Order	Comments
	Tail drum guarding	☐	
	Hopper nip point guarding	☐	
	Head drum guarding	☐	
	Conveyor drive guarding	☐	
	Conveyor rollers	☐	
	Lighting	☐	
	Spillage issues?		

40mm Stockpile Conveyor	Item	Safe / Working Order	Comments
	Tail drum guarding	☐	
	Hopper nip point guarding	☐	
	Head drum guarding	☐	
	Conveyor drive guarding	☐	
	Lighting	☐	
	Spillage issues?		

m Transfer Conveyor	Item	Safe / Working Order	Comments
	Tail drum guarding	☐	
	Hopper nip point guarding	☐	
	Head drum guarding	☐	
	Conveyor rollers	☐	

4/20m	Belt scraper operation	☐	
	Spillage issues?		

4/20mm Stockpile Conveyor	Item	Safe / Working Order	Comments
	Tail drum guarding	☐	
	Hopper nip point guarding	☐	
	Head drum guarding	☐	
	Conveyor drive belt guarding	☐	
	Conveyor rollers	☐	
	Spillage issues?		

Cone / Sump	Item	Safe / Working Order	Comments
	Access ladder	☐	
	Walkway	☐	
	Handrails	☐	
	Spillage / leak issues?		

8" Warman Transfer Pump	Item	Safe / Working Order	Comments
	Drive belt guard	☐	
	Shaft guard	☐	
	Spillage / leaks?		

3"Warman ourse Sand	Item	Safe / Working Order	Comments
	Drive belt guard	☐	
	Shaft guard	☐	

& C	Spillage / leaks?		

6" Warman Fine Sand Pump	Item	Safe / Working Order	Comments
	Drive belt guard	☐	
	Shaft guard	☐	
	Spillage / leaks?		

6" Yellow Pump	Item	Safe / Working Order	Comments
	Drive belt guard	☐	
	Shaft guard	☐	
	Spillage / leaks?		

Sand Plant Level 1	Item	Safe / Working Order	Comments
	Platform access ladder	☐	
	Walkway and handrails	☐	
	Tower ladder – 1st section	☐	
	Screen counter weight guards	☐	
	Spillage / leaks?		

Sand Plant Level 2	Item	Safe / Working Order	Comments
	Access ladder	☐	
	Ladder safety gate	☐	
	Walkway & handrails	☐	
	Pressure Clocks Working?	☐	
	Spillage / leaks?		

Course Sand Stockpile Conveyor	Item	Safe / Working Order	Comments
	Tail drum guarding	☐	
	Hopper nip point guarding	☐	
	Walkway & handrails	☐	
	Head drum guarding	☐	
	Walkway conveyor guards	☐	
	Primary belt scraper	☐	
	Secondary belt scraper	☐	
	Conveyor rollers	☐	
	Spillage issues?		

Fine Sand Stockpile Conveyor	Item	Safe / Working Order	Comments
	Tail drum guarding	☐	
	Hopper nip point guarding	☐	
	Walkway & handrails	☐	
	Head drum guarding	☐	
	Walkway conveyor guards	☐	
	Primary belt scraper	☐	
	Secondary belt scraper	☐	
	Conveyor rollers	☐	
	Spillage issues?		

Other Issues / comments	

Signed:	
Date:	

Appendix 3

NRW Screening Plans

PAN-026461 Protected habitats

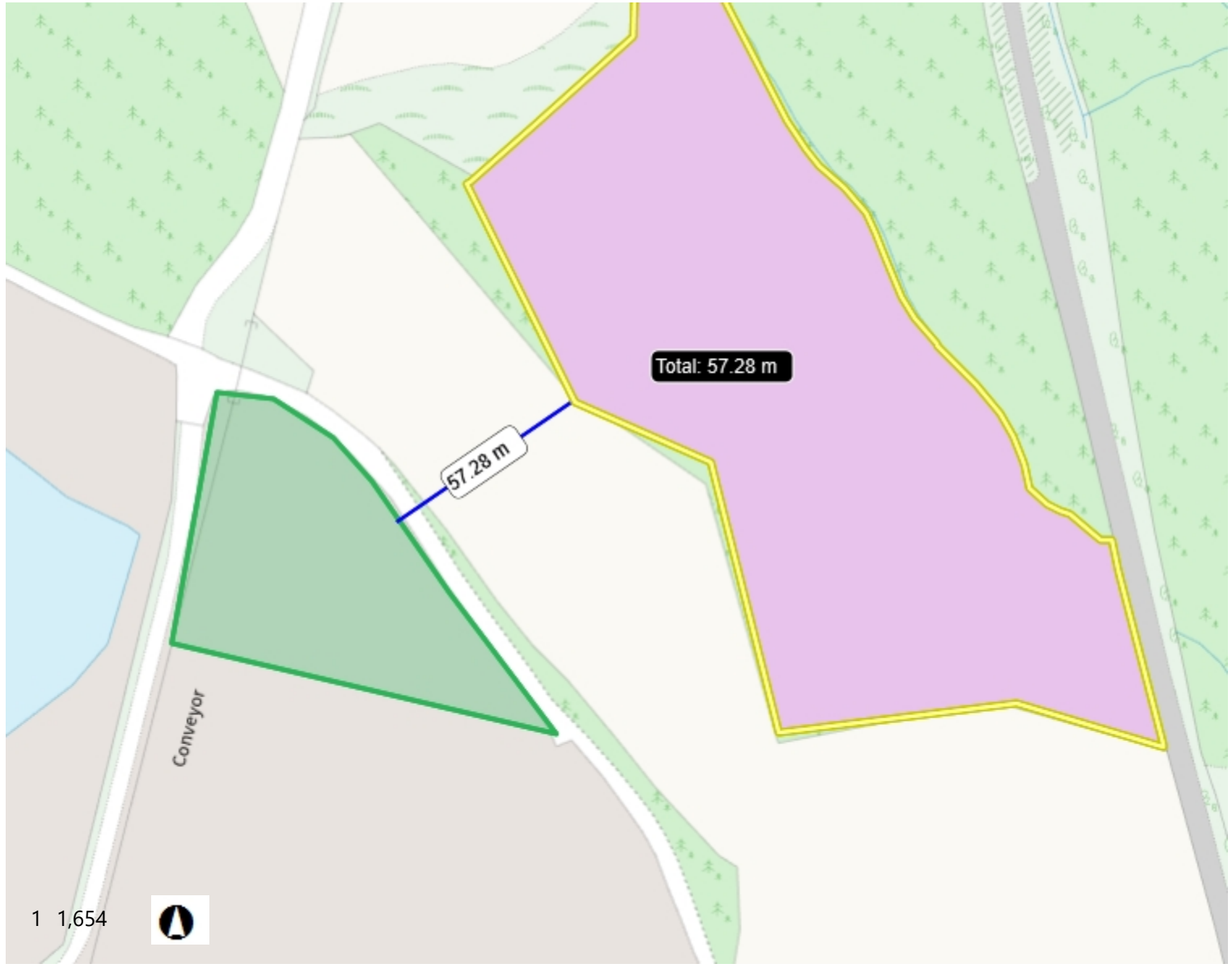
Legend

Protected Habitats for Permitting Screening

- Acquifer fed water bodies
- Blanket bog
- Coastal and floodplain grazing marsh
- Coastal saltmarsh
- Coastal sand dunes
- Deciduous woodland
- Fens
- Intertidal mudflats
- Lowland beech and yew woodland
- Lowland calcareous grassland
- Lowland dry acid grassland
- Lowland dry acid grassland and Lowland calcareous grassland
- Lowland heathland
- Lowland heathland and Purple moor grass
- Lowland meadows

Notes

Purple moor grass and rush pastures - 57 m



0.1 0 0.04 0.1 Kilometers

British_National_Grid

Cyfoeth Naturiol Cymru
Natural Resources Wales

PAN-026461 SACs, SPA, RAMSAR within 1km

Legend

- Special Areas of Conservation
- Ramsar Sites
- Proposed Special Protection Areas
- Special Protection Areas
- Proposed Special Areas of Conservation

Permit Application Point

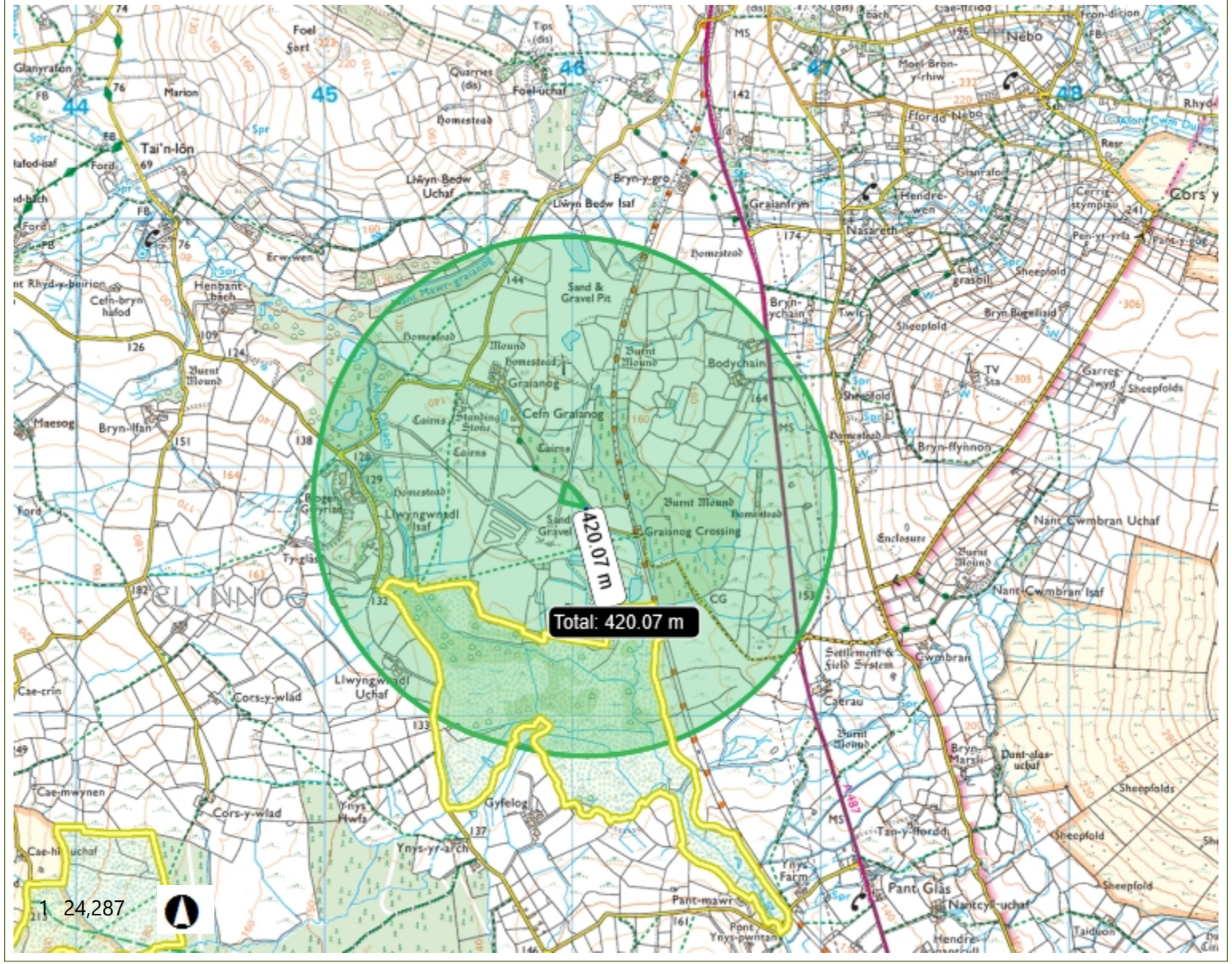
- Application
- Permit

Permit Application Line

- Application
- Permit

Notes

Elfonydd Fens - 420 m



1.2 0 0.62 1.2 Kilometers

British_National_Grid

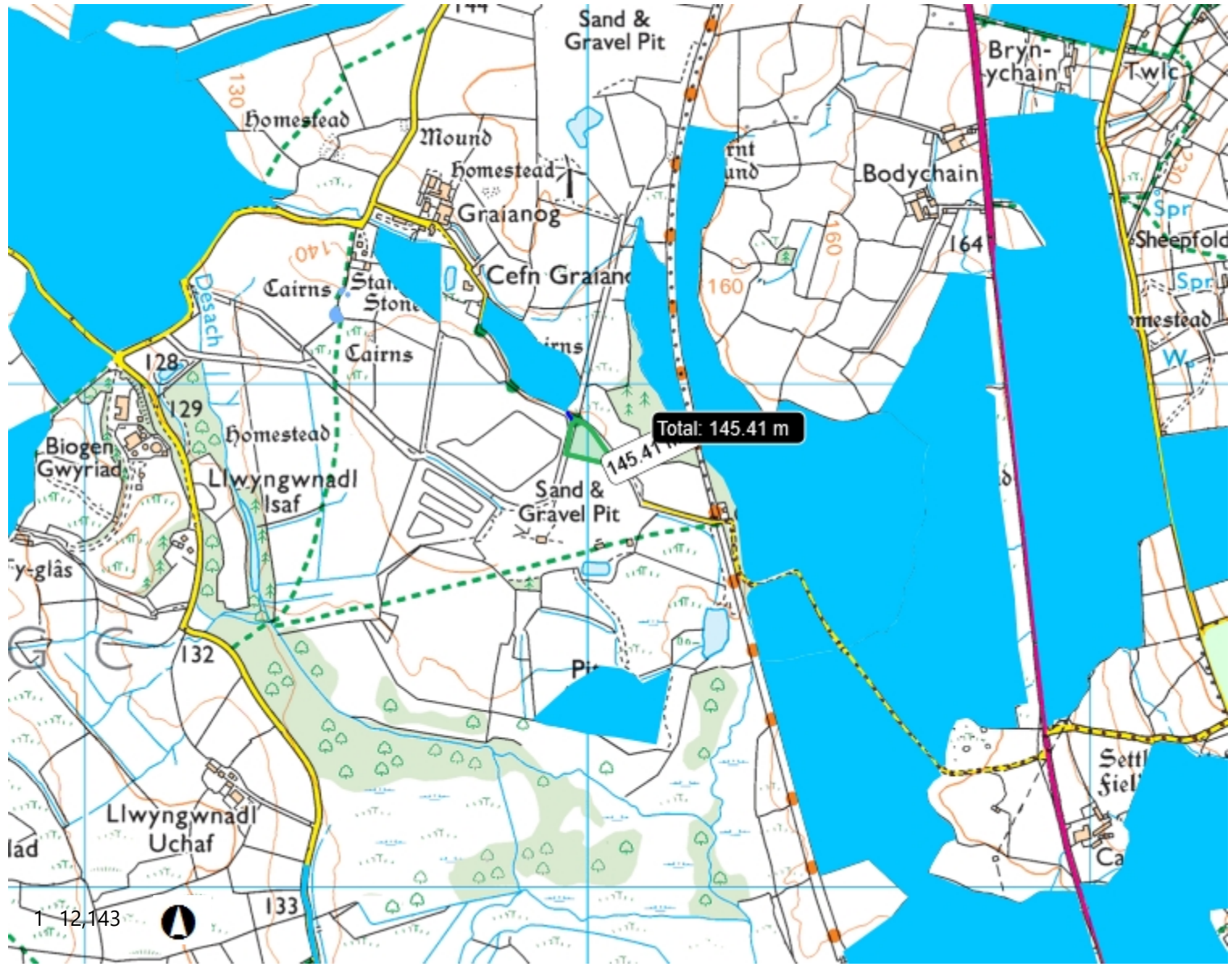
PAN-026461 MyMap report

Legend

- National Parks
- Marine Conservation Zone
- Local Nature Reserves
- Source Protection Zones Individual
  - Zone I - Inner Protection Zone
  - Zone II - Outer Protection Zone
  - Zone III - Total Catchment
  - Zone of Special Interest
- Local Wildlife Sites (SINCs)
- Areas of Outstanding Natural Beauty England
- Ancient Woodland Inventory 2011
  - Ancient Semi Natural Woodland
  - Restored Ancient Woodland Site
  - Plantation on Ancient Woodland Site
  - Ancient Woodland Site of Unknown Category
- Scheduled Monuments

Notes

Graianog (north) SINC - 19 m
Cefn Graianog - 145 m



0.6 0 0.31 0.6 Kilometers

British_National_Grid