24/03/2025

Mr. Brendan Dowling
Cashla
Athenry
Co. Galway

Comhairle Chontae na Gaillimhe
Galway County Council

AN BORD PLEANÁLA
LDG- 080426-25
ABP-
26 MAY 2025
Fee: € 220 Type: PMO
Time: 10.56 By: HAND

TAG: Uimh. Thag. Pleanála:
RE: Planning ref. no.:

25/60220 - PERMISSION for continued use of the existing quarry to the permitted depth of minus 5 mOD, including drill-ing, blasting, crushing, processing, stockpiling of materials, associated roads and ancillary services (granted under Planning Ref. File No.: 09/1958 and ABP Ref.: PL07.235821); Continued use of open storage areas; Continued use of existing permitted concrete manufacturing facility (granted under Planning Ref. File No. 09230 and 19/517: ABP-304769-19); Continued use of the existing office (granted under Planning Ref. File No.: 09/1958 and ABP Ref.: PL07.235821); Continued use of the existing maintenance shed (granted under Planning Ref. File No. 09610); Continued use of the existing water management system (including settlement lagoons), weighbridge and wheelwash; Lateral extension of the existing permitted quarry area over a previously permitted extraction area (granted under Planning Ref. File No. 06/4125) of c.4.6 ha. area to a final floor level of minus 5 mOD. The total quarry extraction area will be c. 13 Ha.; Restoration of the application area to natural habitat after uses following completion of ex-traction. The proposed development is within an overall application area of c. 27.5 hectares and is for a total period of 22 years (comprising an operational period of 20 years followed by 2 years for restoration). This application is accompanied by an Environmental Impact Assessment Report (EIAR)
i mbaile fearainn / in the townland of : Barrettspark

RIALACHÁIN PLEANÁLA AGUS FORBARTHA, 2001-2002

ADMHÁIL ar AIGHNEACHT nó TUAIRIM atá FAIGHTE ar IARRATAS PLEANÁLA

PLANNING AND DEVELOPMENT REGULATIONS, 2001-2002

ACKNOWLEDGEMENT of RECEIPT of SUBMISSION or OBSERVATION on a PLANNING APPLICATION

IS DOICIMÉAD THÁBHACHTACH É SEO! COINNIGH AN DOICIMÉAD SEO GO SÁBHÁILTE. BEIDH ORT AN ADMHÁIL SEO A THAISPEÁINT DON BHORD PLEANÁLA MÁS MIAN LEAT ACHOMHAIRC A DHÉANAMH AR CHINNEADH AN ÚDARÁIS PLEANÁLA	THIS IS AN IMPORTANT DOCUMENT! KEEP THIS DOCUMENT SAFELY. YOU WILL BE REQUIRED TO PRODUCE THIS ACKNOWLEDGEMENT TO AN BORD PLEANÁLA IF YOU WISH TO APPEAL THE DECISION OF THE PLANNING AUTHORITY
Tá aighneacht/tuairim faighte i scríbhinn ó Mr. Brendan Dowling ar an 24/03/2025 maidir leis an iarratas pleanála thuas. Tá an táille cuí de €20 íoctha. Tá an t-aighneacht/tuairim de réir na forálacha cuí de na Rialacháin um Pleanáil agus Forbairt, 2001 agus cuirfidh an tÚdarás Pleanála san áireamh iad nuair atá cinneadh dhá dhéanamh ar an iarratas pleanála. ***AIRE*** ***Tabhair faoi deara gur é an dáta is déanaí do chinneadh ar an gcomhad seo ná 28/04/2025*** Má tharlaíonn sé **nach bhfaigheann tú fógra** maidir leis an gcinneadh seo laistigh de **3 – 5 lá den dáta thuas**, déan teagmháil leis an oifig seo ar an bpointe ag	A submission/observation in writing has been received from Mr. Brendan Dowling on 24/03/2025 in relation to the above planning application. The appropriate fee of € 20 has been paid. The submission/observation is in accordance with the appropriate provisions of the Planning and Development Regulations, 2001 and will be taken into account by the planning authority in its determination of the planning application. ***N.B*** ***Please note that the latest date for decision on this file is 28/04/2025*** Should you **not receive notification** of this decision within **3 – 5 days of the above date**, please contact this office immediately at 091 509 308 or email at

091 509 308 nó ar ríomhphost ag planning@galwaycoco.ie, chun a chinntiú go gcloíonn tú le sprioc amanna achomharc an Bhord Pleanála.

planning@galwaycoco.ie, in order to ensure that you meet an Bord Pleanála appeal deadlines.

E. Keaveney

Administrative Officer, Planning

Cashla,

Athenry,

County Galway.

25th May 2025

By hand

An Bord Pleanála,

64, Marlborough Street,

Dublin 1. DO1 V902

Re: Planning application ref: Galway County Council 2560220 – Coshla Quarries Limited, Barrettspark, Athenry, County Galway.

Dear sir or Madam,

I refer to the above planning application and wish to appeal the granting of permission by Galway County Council.

Please find enclosed the appropriate fee, Acknowledgement letter and exhibits.

A non compliant and defective Environmental Impact Assessment Report has been submitted with the planning application for the proposed development.

- The EIAR submitted with the application does not comply with the EU's Environmental Impact Assessment (EIA) Directive as matters, among other things, relating to hydrology, hydrogeology and traffic hazard have not been assessed in compliance with the EIA Directive.

- There is a traffic hazard at the proposed developments priority access junction R339 / L7109 which, due in part to its lack of the required visibility splays, its use for this proposed development would be in contravention of the Galway County Development Plan 2022 – 2028.

- An Agricultural lime processing plant has been erected without planning permission in the quarry void. Its effects on the environment have not been included or assessed in the EIAR, AA or NIS.

EIAR Chapter 8 – Water:

8.40 page 6. "*There are no major springs or groundwater ingress points within the site.*"

8.41, page 6. Last line - "*the concept of a 'water table' is not applicable.*"

The EIAR has been compiled with a disregard for the presence of a fluctuating water table at the proposed development site.

The planning application for the proposed development is seeking to extract from a ground elevation of 20 to 24m OD to a level of -5m OD, which is below the water table present at the quarry site.

The current EIAR submitted with this application refers to water levels that have been taken during summer months when the water table is usually at its lowest level to support their claim that:-

Paragraph 8.176- "*No groundwater and no conduits exist in the rock profile at Coshla quarries until an elevation commencing at elevations of c-10m OD at some locations and commencing at c-22m OD at another location.*"

Paragraph 8.177- "*For the rock already excavated to -5m OD in the permitted main extraction , and the walls showing that exposure to -5m OD, and the proposed south western and eastern excavation strip to -5m OD not a single shred of actual evidence of groundwater or groundwater flow system or conduits have been found.*"

Paragraph 8.198 – "*,,,,the current and proposed -5m OD extraction elevation of the site is significantly above the groundwater conduit flow path system and therefore there is no interaction between the quarry and groundwater.*"

Paragraph 8.199- "*For the current and proposed -5m OD floor elevation, the quarry is and will remain above the groundwater flow system there is no 'Water Table' in a karst conduit system, there is only the conduit system.*"

By excluding established levels relating to the water table at the quarry which conflict with the EIAR submitted with this application – the EIAR has **not** been compiled or submitted in compliance with the EIA Directive.

This planning application (Galway County Council 2560220) EIAR is in denial of the established fact that there are ground water table levels and that Coshla Quarries Limited wishes to continue to extract from the proposed development site to a level that is below the water table as confirmed by the Hydrologists hereunder.

Agricultural lime processing plant

An Agricultural lime processing plant has been erected without planning permission in the quarry void. Its potential effects on the environment due to the plants presence and its fuel

tank's lack of bund and being located on the quarry floor under the water table, has not been assessed in the EIAR, AA or NIS.

I enclose a submission from Jimmey Acton to Galway County Council for the Boards attention which sets out the matter in more detail.

Previous EIARs – Coshla quarry

MKO Environmental Consultants

A separate 2020 hydrology report was commissioned by Coshla Quarries Limited and compiled by MKO Planning and Environmental Consultancy as a part of an EIAR for the same proposed development site under Galway Council Council PP No: 20/499 in 2020. MKO state on their website with regard to their findings at Coshla quarry;

"The hydrogeological conditions beneath the site were complex. The underlying bedrock strata at the site is mapped as Burren Formation which is classified by the Geological Survey Ireland as a Regionally Important Karstified Aquifer and conduit groundwater flow characteristics. The existing quarry and the proposed extension area are below the groundwater table and therefore extensive ground investigations were undertaken to provide clarity in respect of the hydrogeological regime present on the site and support additional assessment of the risks to the wider hydrogeological setting." (emphasis added)

A Hydrology Report (2020) carried out by MKO Environmental Consultants also confirmed the existence of the water table at paragraph 7.4.3.1 – *"Impacts on Local Groundwater Levels: The current quarry and the proposed expansion area exist below the groundwater table (refer to Figure 7.6 above). As with the existing quarry, dewatering will be required to maintain the floor of the proposed expansion area dry. This has the potential to further impact on local groundwater levels away from the site."*

The MKO report (copy enclosed) also provides a groundwater level monitoring chart that records and displays fluctuating levels from 4m OD to 17m OD from dates 21/11/2018 to 13/03/2019 and in the following paragraph states that *"The groundwater levels measured in the boreholes were typically <3m below ground level (groundwater level of approximately 22m OD) which is consistent with the level of the current inflows to the quarry."*

In this current application, Ms Bartley of Hydro G has disregarded the water table detailed levels recorded by numerous other qualified professionals' that have made previous submissions on *behalf* of Coshla Quarries Limited.

Ms Bartley of Hydro G appears to have cited the hydrogeology water levels taken from the wells at or around the quarry site of which many were taken many years ago during the height of summer when the water table would have been at its lowest.

ABP-308549-20 Coshla Quarries

It has already been decided by the Board, based on the facts presented to them by Coshla Quarries in ABP-308549-20 when a planning condition (No 6) was imposed *"to protect the*

groundwater in the area" that this current second planning application for the same proposed development has excluded water table details that have already been established after being bmitted to the Board and then decided and agreed to by the Board.

ABP-308549-20 condition 6 - the Board, in recognition of the dangers posed by the proposed development and "*To protect groundwater in the area*" dictated that "*No extraction of aggregates shall take place below the level of the water table and shall be confined to a minimum of five metres above the winter water table level as specified.*"

This planning permission application (Galway County Council No: 25/60220) seeks to revisit what has already been decided by the Board. In effect the application appears to be *res judicata* as Coshla Quarry is seeking to have the same matter by the same parties adjudicated on for a second time in search of a different result; and where they did not challenge the legitimacy of the Board's past decision at that time, but this time present submissions relating to the environment that conflict with the previous submissions.

The enclosed Ariel photograph, taken in February 2024, records the fact that the quarry void is submerged to a height that corresponds with the already established fluctuating water table levels – the photograph displays and records a water table level that condition 6 of ABP - 308549-20 has already recognised when placing a condition which this planning application is attempting to have removed; *"No extraction of aggregates shall take place below the level of the water table and shall be confined to a minimum of five metres above the winter water table level as specified."*

The Hydrology Report at chapter 8 of the EIAR has been compiled with the exclusion of the fluctuating water table present at or under the subject matter proposed development site.

Past hydrology reports by other hydrologists, relating to the proposed development site, some of which were commissioned by the quarry, record and identify more comprehensively the water table upper and lower levels.

ABP PL. 07.241241 Asphalt Plant refusal

An appeal to An Bord Pleanála, number PL. 07.241241, during 2012, the Board found in refusing the application for a temporary asphalt plant at the proposed quarry site that one of the reason being that "*The site is located over a regionally important and vulnerable aquifer and karsified bedrock which is highly vulnerable to pollution and can provide rapid conduits to sensitive receptors. In addition, the quarry site has been subject to a flooding event in the recent past and is therefore prone to flooding. Having regard to requirement of the proposed bitumen plant for storage of large quantities of hydrocarbons notwithstanding the proposed relocation of the bitumen plant to higher ground and the mitigating measures proposed, the Board is not satisfied that the proposed development can be accommodated without unacceptable risk of environmental pollution. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.*"

OGE Hydrogeology Ltd – O'Neill Groundwater

I refer to a previous appeal to the Board in 2013 relating to the refusal of planning permission for an asphalt plant which was proposed for the subject matter quarry site. The Environmental Impact Statement submitted with the application in its Soils, Geology & Hydrogeology section which has been compiled by OGE Hydrogeology Ltd – O'Neill Groundwater, at chapter 6 pages 66 & 67 (copies enclosed) *"The natural water table shall be located between 2 – 5 meters of the present quarry rock surfaces (i.e. outside the extraction hole) following closure of the site. The present groundwater levels within the area of the quarry range from between 4.33 meters below ground level (m bgl) to 23.98 m bgl.....The lowest ground level is 4.16 mOD (at a surface datum of 28.14, the groundwater level was therefore 23.98 m bgl).....The highest groundwater level was 15.45 mOD (at a surface datum of 19.78, the groundwater was therefore 4.33 m bgl).*

Page 67. *"The lowest groundwater level is 4.16mOD (at a surface datum of 28.14, the groundwater level was therefore 23.98m bgl)."*

"The highest groundwater level was 15.45 mOD (at a surface datum of 19.78, the groundwater was therefore 4.33 m bgl)."

Savithri Senaratne BSc (Engineering), MSc, (NUIG), PhD (NUIG), MICE (Lond), CEng Engineering Hydrologist in response to information requested by the Board in appeal PL07.235821 regarding the subject matter proposed site. (Copy enclosed)

Page 3 – *"There have been at least 5 floods of approximate level of 19.4m OD in the past 20 years and 9.5m OD flood 30 years ago. The maximum level reached during the November 2009 flood was 20.1m OD."*

Page 5 – "*As the ground water table is varying between 15.85 OD and 18.85 OD (these values were arrived on considering many factors that are detailed later in this report in section 3.1) a flood event would occur when the ground water levels are at their highest. This includes the settlement lagoon would not been available to take water from the quarry pit for a considerable length of time." --- "Having high water depths (example more than 1.0m) in the quarry pit impose a very high risk on health and safety for personnel working in the quarry and the community in the vicinity."*

Page 6 – "*Location of Groundwater Table – Section 21 of the report submitted by OGE Hydrogeology investigates the Ground water levels in detail and asserts that the unaffected local ground water table is at 15.45m OD.*

The level of 15.45m OD as the ground water table is more acceptable than the earlier suggestions that the ground water table is as low as -62m OD. This level is more compatible with the ground water levels observed in two sites in Carnmore (Planning reference numbers 0734223 and 083754) as sited in the parent report by this author. Furthermore as per paragraph 21.5 OGE Hydrogeology report this is the groundwater table during summer. (Paragraph 21.5 states "the ground water levels in and around quarry elevations have been

reduced by about 6m. This is after a normal summer i.e. not a wet summer as experienced in 2008 and 2009. These water levels are being interpreted as a summer low")".

Page 7 – "*Water levels of the settlement lagoon is marked as 18.60m OD in the drawing 09-145-03 dated 16-10-09 submitted with the planning application 091958. This can be an indication of the water table.*"

Page 11 - "*Conclusions – summer ground water table is at 15.85m OD – Winter water table is approximately at 18.85m OD.*"

Dowling –v- An Bord Pleanála [2024] IEHC 249

An email from Coshla Quarry to ABP and cited at paragraph 9 of the above High Court Judicial Review case, wherein Coshla Quarry's agent stated that "*The quarry already operates below the water table as outlined in the plans and particulars submitted as part of the planning application and the proposed extraction levels are consistent with this (down to 5mOD). The approximate existing ground level of the proposed extraction area is 25m OD and the estimated ground water table level is up to 17m OD.*"

The quarry themselves recognise the water table levels. The EIAR submitted with this application is in denial of the already established facts which have been agreed with by Coshla Quarry Limited.

Domestic well not addressed in the EIAR

The EIAR at page 23 paragraph 8.137 has not taken into consideration the fact that the water supply to this Appellants family's dwelling is from a private well which is located approximately 800m from the quarry. The quarry operators are on express notice of the existence and use of the well from past objections, but have chosen to disregard the water well from the purported EIAR. Our domestic well is within the water strike zone which places it in range of any negative impacts from the quarry.

Priority access junction R339 – L7109

The priority access junction R339 and L7109 does not have the required visibility splays available to motorists travelling through the junction as dictated by Galway County Development Plan DM Standard 28: *Sight Distances Required for Access onto National, Regional, Local and Private Roads* – kindly refer to the enclosed photographs and engineers drawings of the junction.

Galway County Development Plan DM Standard 28: *Sight Distances Required for Access onto National, Regional, Local and Private Roads,* wherein it states that "*road junction visibility requirements shall comply with Geometric Design of Junctions (priority junctions, direct access, roundabouts, grade separation and compact grade separated junctions) (DN-GEO-03060) for rural roads,*„„"„„„"*Visibility splays shall be measured a minimum distance of 2.4m from the edge of the carriageway (X distance)*"„„„The sight distances from the 'Y' axis required for access onto National Regional and Local roads state for a design speed of 85 km

requiring a 'Y' visibility splay of 160m. Which the local road L7109 and regional road R339 at the priority access junction both have an 80km speed limit stipulating a required visibility splay when taken from a height of 1.2m at the 'X' to be a clear view of approximately 160 m, in particular the gate pillars to the east of the junction for cars wishing to exit the L7109, completely obscure a drivers sight line due to their excessive height. The lack of the required visibility splays as dictated by the Galway County Development Plan's DM Standard 28 should planning permission be allowed would constitutes a material contravention of the Galway County Development Plan by the planning authority.

The enclosed engineers drawing and photographs of the R339 / L7109 priority access junction demonstrate the lack of the required turning radii available to articulated trucks and heavy goods vehicles using the junction.

The traffic movements through the R339 / L7109 priority access junction already exceed considerably the amounts that can be safely accommodated as set out in DN-GEO-03060 when compared with the AADT figures within the EIAR.

Summary

- The submitted EIAR, AA and NIS are not compliant with the EIA Directive.
- Issues relating to hydrology and hydrogeology have not been properly assessed.
- The traffic hazard present at the priority access junction has not been recognised in the EIAR.
- The Agricultural lime processing plant erected without planning permission is not included in the EIAR – its effects on the environment have not been assessed.

Yours faithfully,

Brendan Dowling

PLANNING APPLICATION EIS FOR A PROPOSED ASPHALT BATCHING PLANT AT COSHLA QUARRIES LTD, BARRETTSPARK, ATHENRY, COUNTY GALWAY.

Environmental Impact Statement (EIS)

Compiled on behalf of

Coshla Quarries Ltd

Compiled by
INIS Environmental Consultants
Edenvale, Ennis, County Clare, Ireland
Tel/Fax: +353 (0) 65 6842465
Mobile: +353 (0) 87 2831725
+353 (0) 86 3966868
Email: info@inisenv.ie
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Inis
ENVIRONMENTAL CONSULTANTS

oil spill kits. There is a double bunded mobile plant refueler, dip trays are used during refuelling. There can be no impact on ground water quality from the asphalt batching plant.

- The extent of the impact of the quarry operation on the local ground water table is between 500m and 700m of the quarry boundaries. There will be no significant diminution of groundwater resources. Annual ground water recharge from the local surface water catchment was calculated by applying a worst case recharge coefficient. This annual recharge volume was calculated as 3,172,007 m3/yr (101l/s) (Table 3, OGE report, OGE report available online at Galwaycoco.ie planning portal) to the local catchment. This means that there is an annual average volume of 2,114,671 m3 (67l/s) is available to recharge the ground.

- Annual ground water recharge (m3) for the existing quarry is assumed to be 100% of the annual effective rainfall falling on that local catchment. The GSI state that extremely vulnerable aquifers consisting of bare rock have a recharge coefficient of 80 to 90% (Appendix A, OGE report). A recharge coefficient of 85% was therefore used to calculate the annual ground water recharge of 154,059 m3/yr (4.9l/s) for the quarry site (Table 3, OGE report). This represents 5% of the recharge to ground water for the local catchment.

- In terms of the quality of the groundwater resource, there is nothing in over two years of independent hydro-chemical borehole monitoring data to suggest that there has been any adverse impact from the quarry operations on the ground water resource.

- The fully recovered ground water levels in the immediate locality will return to between 2m and 5m of the surface. It will fluctuate according to the seasons;

- The interaction of the quarry operation and the physical existence of the quarry both presently and following complete extraction, restoration and site closure have been carried out. A detailed water balance for the local surface water catchment and ground water catchment has been presented in the OGE report. It has been outlined that in periods of extreme rainfall the quarry sump is allowed to flood. This happened in November 2009. The probability of the November 2009 flood event reoccurring is less than 0.35%. The quarry sump (i.e. lowest bench area) flooded to an elevation 8.87 mOD, some 11m below ground level during the November 2009 flood event. Flood waters within the western section of the Coshla site (outside of the extraction pit) percolated away to groundwater's following abatements of the flood. There is a single settlement lagoon on site. When floodwaters abated within the Coshla site the normal procedure of pumping out the quarry sump to groundwater's recommenced. This had no impact on flood waters at Carnmore East, as flooding at Carnmore is a combination of extremely heavy precipitation and land drainage. To alleviate the flood risk at Carnmore the drainage issue at Carnmore must be addressed. The settlement pond is located in the southwest part of the site (see OGE report). The settlement pond has an area of 7450m2. The water percolates away to ground within the pond area. The settlement pond easily accommodates a constant pumping rate of 34l/s. There is no discharge off site. It has been shown in the OGE report that the presence of the Coshla Quarry extraction hole provided significant flood relief of 77,400 m3 to the locality during the November 2009 flood event. The increase in size of the extraction hole will only pose a net positive effect on this situation.

- The OGE report has established that the quarry excavation can continue to the originally outlined extraction area in the planning permission and it will not create any flood risk for the quarry site or the locality nor will it have any significant impact on the groundwater levels of the area.

- The natural water table shall be located between 2 – 5 meters of the present quarry rock surfaces (i.e. outside of the extraction hole) following closure of the site. The present

groundwater levels within the area of the quarry range from between 4.33 meters below ground level (m bgl) to 23.98 m bgl.

- The lowest groundwater level is 4.16 mOD (at a surface datum of 28.14, the groundwater level was therefore 23.98 m bgl).
- The highest groundwater level was 15.45 mOD (at a surface datum of 19.78, the groundwater was therefore 4.33 m bgl.
- The extent of the impact of the quarry operation on the local ground water table is between 500m and 700m of the quarry boundaries. There will be no significant diminution of groundwater resources. Annual ground water recharge to the local surface water catchment was calculated by applying a worst case recharge coefficient. This annual recharge volume is 3,172,007 m3/yr (101l/s) (Table 3, OGE report) to the local catchment. This means that there is an annual average volume of 2,114,671 m3 (67l/s) available to recharge the ground.
- Annual ground water recharge (m3) for the existing quarry is assumed to be 100% of the annual effective rainfall falling on that local catchment. The GSI state that extremely vulnerable aquifers consisting of bare rock have a recharge coefficient of 80 to 90% (Appendix A). A recharge coefficient of 85% was therefore used to calculate the annual ground water recharge of 154,059 m3/yr (4.9l/s) for the quarry site. This represents 5% of the recharge to ground water for the local catchment.
- There will be not significant diminution in the quantities of ground water in the local catchment.
- The OGE assessment work has established and outlined that the present location of all operational procedures (e.g. batching plants and machinery maintenance shed) is appropriate and that they do not pose any potential for flood risk or groundwater pollution. In addition appropriate management protocols and infrastructure are all in place. The management protocols and infrastructural pollution prevention mitigations are all taken from best practice guidelines outlined in the UK Environment Agency Pollution Prevention Guidelines (PPG1, PPG2, PPG3, 2004 & 2006). These guideline documents were outlined in detail in the submitted EIA documentation. Significant financial resources have been spent in identifying and applying all best practice guidelines outlined in these documents, we confirm that all relevant and necessary mitigations are currently in place at the Coshla site and this is also confirmed in the OGE hydrogeology Ltd report. In addition the OGE report outlined that there was no infrastructural impact on the site or on the batching plants during the 2009 flood event; in addition the machinery maintenance shed was not flooded, and all oil substances stored in the shed are currently done so according to best practice with mobile and stationary bund containers etc. Furthermore, following OGE assessment of borehole monitoring data from the quarry site perimeter boreholes it is established that there was no environmental impact on groundwater quality following the temporary flooding of the quarry site.
- The perimeter soil berms may be maintained, upgraded and planted with site screening vegetation, this will not pose any flood risk or any other hydrological/ hydro-geological risk.
- Safety fences around the extraction hole will not cause any flood risk.
- The removal of site infrastructure and site hard standings will not cause any flood risk impact.

An Bord Pleanála

PLANNING AND DEVELOPMENT ACTS 2000 TO 2011

Galway County

Planning Register Reference Number: 12/991

An Bord Pleanála Reference Number: PL 07.241241

APPEAL by Brendan Dowling of Cashla, Athenry, County Galway against the decision made on the 1st day of October, 2012 by Galway County Council to grant subject to conditions a permission to Coshla Quarries Limited care of INIS Environmental Consultants Limited of Edenvale, Kilrush Road, Ennis, County Clare.

PROPOSED DEVELOPMENT: Development consisting of temporary asphalt batching plant and ancillary activities for a period of five years or until the completion of the M17 M18 road projects or whichever comes first. The extent of the site within Coshla Quarries is 0.24 hectares. An Environmental Impact Statement is submitted with the application, development all at Coshla Quarry, Barrettspark, Cashla, County Galway.

DECISION

REFUSE permission for the above proposed development based on the reasons and considerations set out below.

MATTERS CONSIDERED

In making its decision, the Board had regard to those matters to which, by virtue of the Planning and Development Acts and Regulations made thereunder, it was required to have regard. Such matters included any submissions and observations received by it in accordance with statutory provisions.

REASONS AND CONSIDERATIONS

1. Having regard to the planning history of the site, to the pattern of development in the vicinity, to the nature and scale of the proposed development, to the layout and restricted nature of the junction of the R339 and L7109, and to the existing volume of HGV traffic including permitted HGV levels associated with the existing quarry and concrete batching plant, it is considered that the additional traffic movements generated by the proposed development especially at the said junction with the R339 could not be safely accommodated. The proposed development would, therefore, endanger public safety by reason of traffic hazard.

2. The site is located over a regionally important and vulnerable aquifer and karsified bedrock which is highly vulnerable to pollution and can provide rapid conduits to sensitive receptors. In addition, the quarry site has been subject to a flooding event in the recent past and is therefore prone to flooding. Having regard to requirement of the proposed bitumen plant for storage of large quantities of hydrocarbons, notwithstanding the proposed relocation of the bitumen plant to higher ground and the mitigation measures proposed, the Board is not satisfied that the proposed development can be accommodated without unacceptable risk of environmental pollution. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

In deciding not to accept the Inspector's recommendation to grant permission, the Board shared the concerns of the Inspector and agreed that the limit on traffic movements imposed in the previous permission by way of a condition should not be lifted, but did not consider recommended condition number 4 (which sought to limit the traffic serving the quarry complex to 50 HGV/HCV vehicles movements per day) would be appropriate in view of the existing and proposed traffic volumes envisaged. In relation to hydrology and hydrogeology, the Board considered that the circumstances have not changed sufficiently to overcome the concerns expressed in the previous decision.

Member of An Bord Pleanála duly authorised to authenticate the seal of the Board.

Dated this 29th **day of** May **2013.**

RESPONSE NOTES

TO

HYDROGEOLOGICAL STUDY SUBMITTED TO AN BORD PLEANÁLA IN RELATION TO

APPEAL NO. PL07.235821

Prepared by

Savithri Senaratne *BSc (Engineering), MSc (NUIG), PhD (NUIG), MICE (Lond), CEng*

Engineering Hydrologist

December 2010

Dr Savithri Senaratne
Tarrea, Kilcolgan,
Co Galway
savithri.senaratne@gmail.com

1. Introduction

These response Notes compliment earlier reports[1] by the same author submitted to An Bord Pleanála by Brendan Dowling of Cashla, Athenry, Co Galway. The reference for An Bord Pleanála is PL07.235821 and Planning reference is 09/1958 of Galway County Council.

The information requested by An Bord Pleanála that requires hydrological and geo-hydrological inputs is as follows:

1. The Bord notes the extensive documentary evidence submitted by the appellants (and observer) in relation to flooding experience in the area in November 2009, which included images of the application site being flooded and the quarry void containing water (and subsequently requiring dewatering). Having regard to the location of the site in an area at risk of flooding, the applicant is requested to submit a comprehensive flood risk assessment in accordance with the provisions of the "The Planning System and Flood Risk Management Guidelines for Planning Authorities" (DEHLG &OPW, 2009), which should examine the risk of flooding, analysis of such risk, and appropriate mitigating measures to address any risk. The assessment should consider the appropriateness of locating processes such as the asphalt plant and cement batching plant in this area. The response to any flooding episode at the quarry should be examined for example where flood waters would be pumped to."
2. It is considered that the content of the EIS in relation to groundwater is deficient in failing to identify the location of the ground water table or to adequately examine the interaction of the quarry with groundwater. Not withstanding the borehole logs provided which show water strikes at lower depths having regard to the applicants response to the appeals in relation to flooding, and the documentary evidence provided on file, it appears to the Bord that the natural groundwater table in the area would be higher than suggested by the applicant, and following cessation of quarrying the void is likely to eventually fill with water. This has implications for the acceptability of the proposed development in terms of protection of water resources, and the restoration strategy for the site. The applicant is requested to prepare comprehensive assessment of hydrogeology and hydrology for the proposed development, including monitoring of ground water levels. The assessment should provide greater clarity in relation to the management of wash down waters associated with the concrete batching plant, and any other effluents arising on site, ensuring no pollution is caused.

In relation to request number 1 above, important factors are identifying the flood risk, flood risk analysis; appropriate mitigating measures to address any risk and residual risk, if any. Furthermore the appropriateness of locating processes such as the asphalt plant and concrete batching plant under these circumstances. The studies addressing these items were covered in the report prepared by Shane O'Neill of OGE

[1] Effects Due to Floods in Cashla, Athenry Co Galway, Addendum to the report on Effects due to Floods in Cashla Athenry Co Galway.

Hydrogeology Ltd. The responses by this author in relation to the above factors are detailed under the main heading Flood risk assessment (section 2).

In relation to request number 2, main considerations are correct location of the groundwater table; analysis of the interaction of the quarry with groundwater; mitigation measures and residual risks. The management of, wash down waters associated with concrete batching plant and other effluents arising in the site are included under mitigating measures. In addition, likely scenario of the void created by cessation of quarry filling with water, implications due to this in relation to water resources. These items were also addressed in the report by OGE Hydrogeology. This author's responses are described under the headings Groundwater (section 3) and Scenario on cessation of the quarry (section 4).

Conclusions arrived based on the responses are stated under the heading Conclusions (section 5).

2. Flood Risk Assessment

Flood risk assessment was carried out by OGE Hydrology and was covered in their report from section 10 to section 15. Responses by this author are detailed in the following sub-sections:

- Flood risk
- Flood Risk analysis
- Appropriate mitigating measures to address flood risk
- Location of asphalt plant and concrete batching plant at the present locations
- Residual risks

2.1 Flood Risk

A plausible description of Carnmore East flooding in November 2009 is heavy persistent rain falling on the ground that was already saturated due to the very wet summer in 2009 along with groundwater flooding as this area is underlain with karstified limestone. Section 2.7 of the report "Study to Identify Practical Measures to Address Flooding at Carnmore/Cashla" by Ryan Hanley Consulting Engineers, Galway (herein after, is referred to as Ryan Hanley report in this document) describes the November 2009 flood event in detail. It identifies "the flooding in Carnmore/Cashla was caused by high groundwater levels in a karst region (section 2.7.2 page 12).

Section 2.6 of Ryan Hanley report describes the historical flooding in the area by anecdotal evidence. As per that report there have been approximately five 'high floods' in the past twenty years, high flood referring to an approximate level of 19.4m OD. It further states that there was a particularly high flood 30 years ago which reached approximately 19.5m OD. Although the 19.4m OD floods had not seeped into houses road R339 had been inundated between 1-1.5feet.

Subsequent to a damage analysis due to floods in November 2009 the total figure arrived in Ryan Hanley report was €722,520 (Table 5.3, page 29). This figure does not include damages to quarry operation.
It is important to note that parts of Coshla quarry site was flooded during November 2009 and initially the flood waters were pumped out from the quarry site to the fields, as evident from following comments:

- In a submission to An Bord Pleanala by Inis Environment Consultants Ltd,as a reply to Councillor Jim Cuddy and others appeal states,
  "N6 Construction Ltd was leasing the North West section of the site which flooded during the recent flood event. They stored aggregates and a working bitumen plant there. They commenced pumping onto adjacent lands without Coshla Quarries consent on Saturday 19th November at 2pm and were stopped by Coshla management at 7pm when it was apparent what was going on. No pumping took place after this date."

  According to the Flood Time scale (figure 4.1, page 24) produced in the Ryan Hanley report flood level at 06:00 of 19th November was at 19.50 and at 19:00 flood level rose to 19.79m OD. Floods reached to a level of 20.10m OD on 28th November. Therefore, the flood inundation had to extend further inside the quarry site by 28th November.

- "It is reported that water was being pumped from a quarry at the south eastern end of flood 1 (see Drawing No.001 in Appendix B), during the November 2009 flood. A local depression in the water table within the open quarry is apparent from the aerial photography available. There is a widespread perception and strongly held views that this was a contributing factor to the flooding in the study area." (Item 15 in section 3.4 page 20, of Ryan Hanley report)

  "Some of the issues raised above cannot be dealt with in this study as they are outside the scope of this study. These include the consequences of pumping from the quarry and....." (Page 20 of Ryan Hanley report).

Summary:

- Floods in Carnmore East/ Cashla were caused by extensive rain after a very wet summer probably due to an overflow of groundwater storage in a karst limestone terrain.
- There have been at least 5 floods of approximate level of 19.4m OD in the past 20 years and 9.5m OD flood 30 years ago. The maximum level reached during the November 2009 flood was 20.1m OD.
- Pumping out from Coshla quarry site commenced when the floods reached approximately 19.4m OD and lasted for 5hrs starting at 14:00.

2.2 Flood Risk Analysis

In OGE Hydrogeology report rainfall return period was estimated, for the 6 day duration rainfall in November 2009, as 340 years. It is assumed that this estimation is for Ballinasloe station although it was not specifically mentioned. According to Ryan Hanley report return period for the 8 day duration rainfall is 306 years using NUIG

station in Galway city (Table 2.2, page 12). Return periods for rainfall durations for 1day, 4day, 8 day, 16 day and 25 days were included and 8 day rainfall was the maximum whereas return period for 1day duration rainfall was 29 years. The corresponding value for 25day duration rainfall was 131 years.

The probability of occurrence of an event in any given year = 1/(return period)

Hence, the probability of occurrence of the 8-day duration rainfall is low as .003. However, flood event is not a direct transfer of a rainfall event as many other factors such as catchment area, soil moisture deficit, catchment slope and other catchment characteristics influence a flood event along with rainfall. Therefore, it is not possible to assume the return period of a flood event is equal to the return period of a rainfall event.

It is possible to estimate floods from rainfall using rainfall-runoff modelling methods for river flooding. Flood return periods can be estimated using statistical flood frequency analysis due to river or tidal flooding. Then, the probability of occurrence of a flood event of particular return period can be calculated.

Floods that occurred in Carnmore East/Cashla are not due to river or tidal flooding and it is not easy to find the return period of a similar flood event to November 2009 flood without resorting to extensive catchment modelling exercises. Hence the probability of occurrence of a flood similar to November 2009 flood in any given year, for Carnmore East/Cashla is not calculated.

Allowance for climate change

According to "The Planning System and Flood Risk Management" guidelines and the appendix (abbreviated PSFRM) published by Office of Public Works, Ireland in November 2009, an allowance should be made to accommodate climate change. In the Ryan Hanley report an allowance of 20% is added to the flow values (Section 6.4.2, page 37) in the design as an allowance for climate change.

This is a very high margin and a reminder not to consider that the flood in November 2009 is an extraordinary flood and the likelihood of an occurrence of such a flood is rare.

Summary

- Return period of the flood events were not estimated.
- November 2009 flood cannot be disregarded as an extraordinary flood event.

2.3 Appropriate Mitigating measures to address flood risk

According to the report of OGE Hydrogeology the Quarry pit can accommodate any floods at the site and still work on higher levels. These waters are pumped out to the settlement lagoon gradually where the water would percolate in to ground water. Performing a rough calculation, a volume of approximately 1180000m^3 can be accommodated in a part of the quarry pit that has levels around 4.5m OD. The top level of the water will be 11.0m OD. This is assuming that the water levels in the

quarry pit are at the bottom. However, above value have a number of limitations as follows:

- The quarry pit is taking daily runoff of the site before being pumped to the settlement lagoon which would indicate the water level in the quarry pit is not at 4.5m OD.
- As the ground water table is varying between 15.85OD and 18.85OD (these values were arrived on considering many factors that are detailed later in this report in section 3.1) a flood event would occur when the ground water levels are at its highest. This indicates the settlement lagoon would not been available to take water from the quarry pit for a considerable length of time.
- Having high water depths (example more than 1.0m) in the quarry pit impose a very high risk on health and safety for personnel working in the quarry and the community in the vicinity.
- During a flood scenario of the quarry site areas such as wheel wash facility, machinery shed, wastewater system etc can be submerged. Hence, contaminants from these facilities can find their way in to surface water and groundwater.

Summary

Although the quarry pit appears to be a viable solution for mitigation of flood waters it can pose many other environmental, health and safety risks.

2.4 Location of asphalt plant and concrete batching plant at the present locations

It is evident from the site layout and cross sections submitted with the planning application 091958 floor levels of the Asphalt plant is 19.0m to 20m and the Concrete batching plant is 20.0m to 21.0m. Hence, a flood level of 20m would definitely flood parts of these processes.

The washwater recovery area of the concrete batching plant is less than 21.10m OD as the washdown area is at 21.10 m OD. Hence, the November 2009 floods may have almost reached the washwater recovery area. Therefore, these facilities are under severe flood risk.

2.5 Residual Risks

The residual risks of having the quarry pit as a flood retention pond is that it can be already at a level that it can reach under health and safety conditions. This can happen as water cannot be pumped out to the settlement lagoon due to high groundwater levels.

As there aren't any procedures in place for measures to be taken in case of a flood apart from the general routine procedures, in a flood situation similar to November 2009 flood the facilities such as wheel wash, machinery shed, concrete batching plant and asphalt plant can get submerged.

3.0 Groundwater

Groundwater aspect in relation to Coshla quarry was dealt in sections 18 to 26 of the report by OGE Hydrogeology. This author's responses are addressed in the following sub sections.

- Location of groundwater Table
- Interaction of the quarry with groundwater
- Mitigation Measures
- Scenario on cessation of the quarry

3.1 Location of Groundwater Table

Section 21 of the report submitted by OGE Hydrogeology investigates the Ground Water Levels in detail and asserts that the unaffected local ground water table is at 15.45 mOD.

The level of 15.45m OD as the ground water table is more acceptable than the earlier suggestions that the ground water table is low as -62m OD. This level is more compatible with the ground water levels observed in two sites in Carnmore (planning reference numbers 073423 and 083754) as sited in the parent report[2] by this author. Furthermore, as per paragraph 21.5 OGE Hydrogeology report this is the groundwater table during summer. (Paragraph 21.5 states "the ground water levels in and around quarry excavation have been reduced by about 6m. This is after a normal summer i.e. not a wet summer as experienced in 2008 and 2009. These water levels are being interpreted as a summer low").

Additional data on ground water table are as follows:

- As per anecdotal evidence, the low lying area in the fields south of R339 in Carnmore East and north-east to the quarry have standing water in wet winter seasons. This area is mainly hidden and cannot be seen from R339 and the road in Cashla. It can be inferred that this is the area in and around the contour 18m OD as per the contour map of the area submitted with the previous report[3] by the same author.
  This area is shown in the drawing titled "Layout Plan of Survey area" in the Ryan Hanley report (Drawing No 001, Appendix B).
- Following are important aspects in Ryan Hanley report that will bring to light the variations in ground water table in the area:
  - "Two trial holes were excavated by locals with support from the OPW in the study area on 26th/27th January 2009. The purpose of excavating the holes was to establish the permeability of the.....the locations shown on Drawing No 001 in Appendix B.
    The first trial pit was dug down to .....
    The first permeability test lasted for 50 minutes. In.....The first trial pit was subsequently backfilled with stone and left as an

[2] Effects Due to Floods in Cashla, Athenry Co Galway by Savithri Senaratne
[3] Addendum to the report on Effects Due to Floods in Cashla, Athenry Co Galway by Savithri Senaratne

artificial swallow hole. A month later, following a period of rainfall, approximately 10-15 acres of land around the trial hole flooded for 3-4 days." (page 7)
This trial hole is located in the area referred to in the previous bullet point as getting inundated during winter rainy seasons.

- "Flood No. 1 is a turlough which originates approximately 1km south of the R339. In November 2009, the turlough expanded to cover an area of approximately 0.5 km^2 and came within 260m of the R339, overflowing into Flood No. 2 during the flood event. A quarry is located at the southeast end of the turlough." (page 12)
Area referred to as a turlough is the same area cited in the first bullet point as getting inundated. Therefore, the anecdotal evidence and the information extracted from the Ryan Hanley report agrees.

- Water level of the settlement lagoon is marked as 18.60m OD in the drawing 09-145-03 dated 16-10-09 submitted with the planning application 091958. This can be an indication of the water table.

Above information is interpreted as that the low ground (approximately 18m OD) northwest to the quarry is the area referred to as turlough in the Ryan Hanley report. This area gets inundated during winter rainfall and 10-15Acres got inundated in February 2009.

Hence considering above, it can be inferred that the winter groundwater table is around 18.6 m OD. This value agrees with a value of 18.85m OD as per the OGE Hydrogeology assertion that the Ground water table fluctuate around 3m between seasons (Paragraph 24.6).

Summary

- Summer ground water table is at 15.85m OD
- Winter water table is approximately at 18.85m OD

3.2 Interaction of the quarry with groundwater

The interaction of the quarry with groundwater can be identified in the following aspects of the quarry and its operations:

- Groundwater recharge
- Quarry sump
- Settlement Lagoon
- Waterwash and recovery unit
- Wastewater disposal system
- Concrete batching plant and asphalt plant

Groundwater recharge

Report of the OGE Hydrogeology has prepared a water balance study in relation to surface and groundwater and effects on recharge of the aquifer. It has found that the

annual average recharge to the groundwater from the quarry area is approximately 5% of the recharge to the local catchment.

uarry sump

The lowest level quarrying can reach, as per planning reference 064125 is -5m OD, although at presently it has reached approximately 4.0m OD (site layout plan 2 submitted with the planning reference 091958). Although, quarrying has not hit any conduits that might be present in the limestone during its operations, it cannot be ruled out that this might not happen. In such a scenario a 4.0mOD will result a water depth of 11.65m, when groundwater table is at its summer levels. This will result in a direct contact with the groundwater affecting quality of water in the aquifer where contaminants from quarrying will leach.

Settlement Lagoon

During the winter season, water table can rise to 18.65m OD which will be the water level in the settlement lagoon. Hence, available capacity of the lagoon will be diminished creating operational problems.

Furthermore, runoff from the quarry site directed to the sump is pumped into the settlement lagoon that has a water level similar to the groundwater table. Hence, any contaminants in the water pumped into the lagoon can travel directly to the groundwater. Furthermore, any biological contaminants in the lagoon water do not have enough soil to percolate before reaching groundwater. This can affect water quality in the aquifer and none of the bore hole monitoring results give biological parameters.

Chemical parameters does not indicate adverse results as per the details included in bore hole water quality results. These chemical parameters do not include heavy metals that might be present.

Settlement lagoon water is not tested periodically for any possible contamination.

Waterwash and recovery unit

These units are designed in such a manner that they are closed circuit systems. However, any failures of these units or accidental leakages can affect groundwater as the groundwater table is approximately 2.0m below these units. Furthermore, during floods that are more frequent (stated earlier in the report under flood risks that there were at least 5 floods during the last century that reached 19.4m OD) this clearance from groundwater table is less than 2.0m. Hence, the risk of contamination is significant. Borehole Number 5 is the closest to Waterwash & recovery unit and water quality data from this borehole is not available in the public domain to ascertain any effects in water quality.

Wastewater Disposal

Wastewater Disposal is through a conventional septic tank (appendix ... copy of page 5 of the planning application reference 091958) which is shown on the site layout plan 2 as EPS Bison treatment system (Appendix 1 copy of the drawing). This is located approximately 8m from the machinery shed entrance. Percolation/polishing filter area is not shown and no details of it given. In addition, cross sections are not available for the wastewater system to ascertain the interaction of effluent from the sewerage with groundwater. The closest borehole is bore hole no 5 to the wastewater system. As per the drill log (appendix 1 copy of drill log) soil cover is less than 1m comprising clay and stone. This stratum is followed by weathered rock up to a depth of 9m from ground level. If this is a representation of the soil profile in septic tank/percolation area biological parameters of the effluent from wastewater system are not treated

effectively to be disposed to groundwater. Furthermore, water quality data are not available from this borehole in the borehole water monitoring information (appendix X of the EIS, planning reference 091958). The monitored borehole data from other bore holes do not give biological parameters.

Concrete batching plant and asphalt plant

Concrete batching plant levels are shown in the drawing no 09-145-12 dated 16-10-09 that were submitted with the planning application reference 091958. The main concern is the ground levels of the entire area are approximately 20.0m OD. The washwater recovery area has to be less than 21.10m OD as the washdown area is at 21.10 m OD. With a winter water table around 18.65m OD and the general flood levels at 19.4m OD and the November 2009 flood reaching a level of 20.2m OD there is a risk of the washdown area being flooded. The washwater recovery area getting flooded can adversely affect water quality of surface/groundwater.

Asphalt plant details are shown in the drawing no 09-145-13 date 16-10-09 submitted with the planning application reference 091958. The levels are lower than concrete batching plant where they are more or less of the 20.0m OD level. This poses the threat of being submerged in a flood similar to November 2009 that can affect the water quality of the surface/groundwater.

3.3 Mitigation measures

Mitigation measures with respect to groundwater were covered in section 26 of the OGE Hydrogeology report. These are in two areas of interest namely, (1) ground water quantities (2) groundwater hydrochemistry.

In relation to quantities of groundwater it is asserted that there is no diminution of in the quantities of groundwater in the local catchment and any groundwater that enters the quarry excavation is pumped back to the settlement lagoon (paragraphs 26.1 and 26.2).

It is asserted that there is no change in hydrochemistry of the groundwater and it is not been impacted since 2007. It explains the groundwater protection infrastructure and protocols that are in place in relation to machinery maintenance shed, stored hydrocarbons, waste oil products and refuelling. In addition, it states that there can be no impact on groundwater quality from the concrete batching plant. (paragraphs 26.3, 26.4 and 26.5).

All these mitigation measures are in relation to general routine operation. However, it does not detail the measures to be taken in the event of a flood that will fully or partially submerge these facilities.

Moreover, nothing is mentioned in relation to wastewater facility and effect on biological parameters of groundwater.

It is worth noting here that OGE Geohydrology report states that "there were no exceedances recorded from BH2, BH3 and BH4 for any parameter as a consequence of the flooding in November 2009" (paragraph 22.7). Water quality tests were not carried out until 25th of January 2010 which is 2 moths after the November 2009 floods. Due to natural dilution of groundwater and movement of groundwater it is possible the effects of November 2009 floods were not reflected in January 2010.

4.0 Scenario on Cessation of Quarrying

In section 24 of the report by OGE Hydrogeology establishes a scenario of the quarry pit being filled with water on cessation of quarrying. It further states water depths in the quarry pit will be between 2m and 5m of the surface.

Inis Environmental Consultants limited has prepared a detailed Quarry management plan. This addresses the presently established scenario of Quarry pit being filled with water to a depth of 2m to 5m creating an artificial lake. Following are the important aspects of this final scenario:

1. "The final void volume at the end of the life of the quarry will be 3,000,000 m^3. The average groundwater recharge to the quarry area is 5l/s. On this basis it will take the quarry void about a year to fill back up to the average ground water level prior to the start of the quarrying operation." (Paragraph 24.2 of the report by OGE Hydrogeology).
2. "Following recommendations indicated as part of hydro-geological and flood risk assessments, the option chosen is to implement restoration of the site to 'part biodiversity and part agricultural land (closed to public)'". (section 6, Site restoration options, page 22 of the report by Inis Environment Consultants)
3. According to Figure 2 - Proposed Restoration plan layout and Figure 3 – Sections of final quarry faces the maximum water level of the lake (meaning the winter water level) is 17.0m OD and the summer water level is 14.0m OD.

Water depths of the artificial Lake

According to the assertion on ground water table as detailed in section 3.1 of this report normal summer water table is 15.45m. Therefore, it is more logical to accept a value of 15.45m OD as summer water level of the lake. This brings the winter water level of the lake to 18.45m OD. In these circumstances even if the lowest level of the quarry pit is 5m OD it would have maximum water depths of 10.45 in summer time and 13.45m in the winter time.

Although, it is stated that a 2m security fence will be erected around the artificial lake such extremely deep water in the midst of a rural area with family residences and farming can pose a major health and safety risk.

Winter Flood scenario in the artificial lake area, similar to 2009 Flood

According to section 5.7 of the restoration Management plan the "landscaping will topographically grade towards the quarry extraction areas will ensure that there is no flood risk to surrounding areas". Therefore, it can be assumed that the catchment area of the artificial lake is the area surrounded by the berms which is approximately 242000m^2.

Consider a total monthly rainfall of 465mm (This was the total monthly rainfall for November 2009 at NUI Galway, page 111, Ryan Hanley report) falling on the artificial lake. It is assumed soil is totally saturated as happened in November 2009.

This rainfall falling on the artificial lake would create a volume of water equal to 112530m^3 (242000x.465) of water draining into the artificial lake.

Surface area of the artificial lake can be approximated as 113000m^2 (Approximately half the area of catchment).

Hence increase in water level of the lake is 1.0m (112530/113000) which brings the water level to 19.45m OD (The lake will have a slightly larger water spread which will bring this water level down by a small amount which is not calculated). This flood level is much lower than the November 2009 flood level around 20.2m OD (figure 3 of report by OGEHydrology).

Therefore, if the water reaches a level of 20.2m OD a major portion of the dry ground on the restored quarry site will be inundated along with the fields to the West of the quarry berm. As can be seen from the ground levels as per figure 3 – Proposed restoration layout, (submitted as reply to further information request from Bord Pleanala) at some locations of the berm on the western periphery standing water depths can reach up to 1m. This means the embankments built for visual screening becomes water retaining embankments. These embankments are not designed as dams and the material used and construction methods employed are not suitable for water retaining structures. Moreover, the trees planted on top of these embankments will weaken the stability of these embankments as water retaining dams.

5.0 Conclusions

An extensive desk study was carried out in a very short time period to prepare the responses in relation to the information supplied by Coshla Quarry Ltd., Athenry in replying to a request by An Bord Pleanála (PL07.235821 and Planning reference 09/1958 of Galway County Council). These covered 3 major areas of Flood Risk, Groundwater and Scenario on cessation of the quarry. Conclusions arrived from this study are as follows:

- A definite flood risk is present in a part of the Coshla quarry site area and surrounds.
- Novemebr 2009 floods cannot be disregarded as an extraordinary flood.
- The mitigation measure of allowing floods into the quarry pit and continuing operations in the higher levels of the quarry can pose a major health and safety risk.
- Concrete batching plant and the asphalt plant has a definite flood risk.
- Residual flood risks are present if the water depths allowed in the quarry pit be controlled to satisfy health and safety issues. In such a situation additional surface runoff from floods can not be directed in to the quarry pit.
- Summer ground water table is at 15.85m OD and winter groundwater table is approximately at 18.85m OD in the quarry site area.
- There is a high risk of groundwater being contaminated by different features in the quarry site.
- Mitigation measures in place relating to groundwater are routine procedures. No additional measures are in place in the event of a flood that will fully or partially submerge these facilities.
- Very limited information is available on the wastewater facility and its effect on biological parameters of groundwater is not available.

- Scenario of the quarry void being filled with water forming an artificial lake can create health and safety issues for the community living in the area.

References

1. Effects Due to Floods in Cashla, Athenry Co Galway by Savithri Senaratne
2. Addendum to the report on Effects Due to Floods in Cashla, Athenry Co Galway by Savithri Senaratne
3. Study to Identify Practical Measures to Address Flooding at Carnmore/Cashla" by Ryan Hanley Consulting Engineers, Galway available in the OPW website.
4. Response to appeal to an Bord Pleanala regarding continued operation of a quarry at Barrets Park Oranmore, Co Galway by Shane O'Neill, OGE Hydrogeology
5. The Planning System and Flood Risk Management – Guideline for Planning Authorities, November 2009, Office of Public Works
6. The Planning System and Flood Risk Management – Technical Appendices, November 2009, Office of Public Works

[2024] IEHC 249

THE HIGH COURT
PLANNING & ENVIRONMENT

[H.JR.2024.0000013]

IN THE MATTER OF APPLICATION PURSUANT TO SECTION 50B OF THE PLANNING AND DEVELOPMENT ACT 2000

BETWEEN

BRENDAN DOWLING

APPLICANT

AND
AN BORD PLEANÁLA

RESPONDENT

AND
COSHLA QUARRIES LIMITED

NOTICE PARTY

JUDGMENT of Humphreys J. delivered on Wednesday the 1st day of May, 2024

1. The applicant, a litigant in person, attended at the Central Office and presented papers for an *ex parte* application, but was incorrectly directed to apply by motion on notice. The request for leave, when actually moved, would have been out of time if the rules for *ex parte* applications are to be applied as if the interaction with the Central Office had never happened. By contrast, the leave application would be within time if treated as a motion on notice; a motion that was directed by the Central Office and that was issued by the applicant in compliance with such directions. The primary question here is: should the rules of court should be interpreted in a way that visits upon the head of an applicant the effect of errors committed within the court system itself?

Facts

2. The applicant seeks to challenge a decision of the board made on 15th November 2023 to amend conditions 3(a) and 6 of the Board's Order ABP-308549-20 made on 23rd August 2023 concerning a quarry development owned by the notice party at Barrettspark, Athenry, Co. Galway

3. Mr Dillon for the board avers as follows:

> "4. The application for planning permission came before the Board by way of an appeal lodged by the Applicant against the decision of Galway County Council to grant permission for the proposed development. The appeal was received by the Board on 29 October 2020.
>
> 5. The application for planning permission was considered by a Planning Inspector who submitted a report dated 14 April 2023 to the Board in which it was recommended that permission be granted for the proposed development. ..."

4. We can pause here to note that the inspector's report states at para. 1.2 that the "main quarrying and rock extraction" activity is at the eastern end of the site, so the board was aware that the activity concerned related to rock quarrying.

5. Mr Dillon continues:

> "6. The application was considered by the Board at a meeting on 10 August 2023 at which the Board decided to grant planning permission for the proposed development. That decision is reflected in the Board Direction which is dated 21 August 2023. ...
>
> 7. By Board Order dated 23 August 2023 planning permission was granted for the proposed development. ..."

6. We can now note the wording of two specific conditions in the original board order. Condition 3(a) refers to:

> "permission for further extraction of sand and gravel".

7. Condition 6 refers to "extraction of aggregates" and also limits extraction to above the water table. The full text is as follows:

> "6. No extraction of aggregates shall take place below the level of the water table and shall be confined to a minimum of five meters above the winter water table as specified.
> Reason: To protect groundwater in the area."

8. Mr Dillon continues:

> "8. By letter of 28 August 2023 the Board wrote to the parties to the appeal to inform them of the decision. ...
>
> 9. As a matter of course, the Board includes with letters of this nature a notice containing information in relation to applications for Judicial Review. ...
>
> 10. In addition, the Board maintains a section on its website containing information in relation to Judicial Review, which also directs persons to the website maintained by the Citizens Information service. ...
>
> 11. The Judicial Review Notice informs parties that an application for leave to apply for judicial review must be brought within 8 weeks of the date of the decision of the Board.

12. The Board Order, Direction and Inspectors Report were published on the website maintained by the Board on 30 August 2023.

13. Following this, on foot of an email from the Notice Party's planning agent to the Board dated 12 October 2023, the Board became aware of clerical errors in Conditions 3(a) and 6 of the decision of 23 August 2023. ..."

9. The email from the notice party reads as follows:

"Dear Sir/Madam,

I am writing in relation to a grant of planning permission recently issued by the Board for a quarry development at Cashla, Athenry, Co. Galway (Ref: 308549-20)(see attached) and in particular Conditions No.3 and No.6 of the grant of planning permission.

We are the applicant's planning agent.

075 Condition No.3a refers to a sand and gravel quarry where the proposed development is a rock quarry. We assume that this is a drafting error. You might please confirm.

Condition No.6 limits the depth of extraction in respect of the proposed quarry development to a level above the water table and/or a minimum of 5m above the winter water table. We note that limiting extraction to above the water table would be standard condition for sand and gravel extraction and perhaps Condition 6 has been attached to the permission in error based on the assumption in Condition 3a?

The quarry already operates below the water table as outlined in the plans and particulars submitted as part of the planning application and the proposed extraction levels are consistent with this (down to 5mOD).

The approximate existing ground level of the proposed extraction area is 25m OD and the estimated ground water table level is up to 17mOD . The condition imposed by the Board would have a fundamental impact on the extent of the extraction that could be undertaken as part of this planning permission relative to what was sought as part of the planning application. A review of the Inspector's Report does not appear to outline a rationale or justification for the imposition of this condition.

We wish to query whether the conditions referred to above have perhaps been attached to the grant of permission in error?

I would appreciate if you could revert to me on this matter at your earliest convenience as it is a matter of some concern to the applicant.

If you require any further information on this, please do not hesitate to get in touch."

10. It can be noted that while the notice party queried whether this was an error, they did not suggest that this was a mere *typographical* error. There are different gradations of error as the caselaw makes clear, and we will come to that later.

11. Mr Dillon continues:

"14. The application was considered by the Board at a meeting on 8 November 2023 at which the Board decided to exercise its powers pursuant to section 146A(1)(b) of the 2000 Act to rectify errors in Condition 3(a) and Condition 6, which were inadvertently drafted in the Inspector's recommendation by reference to a sand and gravel quarry whereas the application was for a rock quarry, and this error was inadvertently carried over to the Board's original Direction and Order. That decision is reflected in the Board Direction which is dated 8 November 2023. ..."

12. The amendments made are set out in the direction as being

"For condition No. 3(a): delete 'sand and gravel'

For condition No. 6 to read as follows:

The extraction area, including the depths, shall be as indicated in s. 3.3.1 'Proposed extraction area' of the Environmental Impact Assessment Report received by the planning authority on the 21st day of April, 2020.

Reason: In the interests of clarity."

13. Mr Dillon continues:

"15. By Board Order dated 15 November 2023, the said amendments were made to the grant of planning permission. ...

16. The decision of 15 November 2023 was notified to the parties by letter dated 17 November 2023. ...

17. The Additional Direction and Additional Order were uploaded to the Board's website on 20 November 2023."

Procedural history

14. We now come to the issue of time. Mr Dillon outlines the board's contention as to the running of time:

"18. ... The decision of the Board which is under challenge was made on 15 November 2023 and the 8-week period in which an application for Judicial Review can be made commences

7.4.2 "Do Nothing" Scenario

If the proposed quarry expansion does not go ahead, the quarry will operate in accordance with the current planning permission and related planning conditions (Planning Ref:09/1958) until the planning permission has expired in March 2021.

7.4.3 Potential Extraction Phase Impacts

7.4.3.1 Impacts on Local Groundwater Levels

The current quarry and the proposed expansion area exist below the local groundwater table (refer to Figure 7.6 above). As with the existing quarry, dewatering will be required to maintain the floor of the proposed expansion area dry. This has the potential to further impact on local groundwater levels away from the site.

However, as discussed above, the measured groundwater levels at the quarry would suggest that the current quarry operation is having only a very small effect on local groundwater levels and this would be consistent with the hydrogeological conditions that the current quarry is operating in (i.e. competent, unweathered, low permeability limestone).

Receptor: Groundwater levels

Pathway: Groundwater flowpaths

Pre-mitigation Impact: Negative, slight, indirect, likely, long term effect on groundwater levels.

Impact Assessment / Mitigation Measures:

The current quarry (final floor at -5m OD) is extracting from a layer of very competent limestone with no significant visible weathering, fracturing or evidence of karstification. Consequently, groundwater inflows to the current quarry are low (on average are less than 142m3/day). Groundwater inflows to the existing quarry are limited to shallow flows along the top of the north-eastern wall / corner of the middle bench. The inflows are at about 21 – 22m OD.

Site investigations in the proposed expansion area indicate similar hydrogeological conditions and therefore significantly increased groundwater inflows are not expected. Consequently, significant effects on groundwater levels as a result of the proposed expansion are not expected. No mitigation is required. Groundwater level monitoring will continue as per the existing discharge licence.

Residual Effect:

Negative, slight, indirect, likely, long term effect on groundwater levels.

Significance of Effects:

Based on the analysis above, the proposed development will have **no significant effects** on local groundwater quality or supplies are expected.

7.4.3.2 Groundwater Quality Impacts from use of Explosives (i.e. Nitrogen Compounds)

Common explosives used at quarry sites, such as Ammonium Nitrate, often contain large percentages of N (nitrogen) compounds. It has been found that small percentages of N compounds remain as

the quarry pit. There was no evidence of significant karst features e.g. conduits etc in the borehole logs. Significant karst features are not expected within the development site area.

- A detailed water balance for the local surface water catchment (see Figure 1, OGE report) has been presented in Section 11 of the OGE Surface Water section.
- On September 27th between 12:28 and 13:15 the water levels were measured in each monitoring well, and at the sump on the Lower Bench. (Table 4 is a summary of the water levels recorded on the day and Figure 7 is a plot of the water levels, see OGE report);
- The OGE report has identified that there is nothing in over two years of hydrochemical borehole monitoring data to suggest that there has been any adverse impact from the quarry operations on the ground water resource.
- The ground water inflow to the quarry is absent or very low.
- Ground water moves within the upper 5 or 6 meters of the ground where small joints, cracks and bedding planes exist. These features are not present to any significant extent greater than 6 meters bgl - the bedrock is very tight below this depth. There are no geological fault lines within the quarry site or immediate locality and there are no karst features within the quarry site, inspection of quarry faces and borehole logs indicates that karst features are unlikely to be encountered as the extraction continues to its proposed extent.
- The final void volume at the end of the life of the quarry will be approximately 3,000,000m^3. The average ground water recharge to the quarry area is 5l/s. On this basis it will take the quarry void about a year to flood back up to the average ground water level prior to the start of the quarrying operation.
- The fully recovered ground water levels in the immediate locality will return to a maximum of between 2m and 5m of the surface. It will fluctuate by a maximum of 4 to 5 m in response to the seasons. Following closure and reinstatement of the quarry site, the quarry extraction area will not overflow during a 1/340 year flood.
- No seepages were observed entering the quarry in late September and early October 2010. The extent of the impact of the quarry operation on the local ground water table is between 500m and 700m of the quarry boundaries. There will be no notable diminution in the quantities of ground water in the local catchment.

Plate 7 - Flooding at Carnmore, November 2009. Application site in foreground (Source Ryan Hanley, 2010b).

Plate 8 - Flooding at Carnmore, November 2009. This photo was taken approximately 1 km north of the application site, facing west. A flooded Greaney Glass factory is observed (Source Ryan Hanley, 2010b).

6. SOILS, GEOLOGY & HYDROGEOLOGY

6.1. INTRODUCTION

This section covers the potential impacts of the asphalt plant on soils, geological formations and groundwater. The 'Subject Site' refers to the area in which the asphalt batching plant is located. In addition as part of detailed investigations requested by An Bord Pleanala as part of the 09/1958 application a groundwater specialist (OGE Hydrogeology Ltd – O'Neill Groundwater) was contracted to carry out detailed investigations relating to geology, hydrology, hydrogeology and flood risks at and around the Coshla quarry site. The key details of these findings are reviewed and reiterated as part of this soils, geology & hydrogeology assessment chapter.

6.2. METHODOLOGY

Desktop Study

The Soils and Geology Section of the original EIS submitted for planning (06/4125) for Coshla quarry and the more recent application for a continuation of quarrying at Coshla (09/1958) are reviewed for this present assessment. In addition the relative assessment work findings from 09/230 (concrete batching plant application) and 09/1143 (bitumen plant application) are also reviewed. Furthermore the conditions attached to all decisions to grant are refused.

Data and maps from the Geological Survey of Ireland of the area were also consulted. For the groundwater assessment the GSI-Groundwater section was consulted for the protection schemes. The criteria from the Resources Protection Zones were taken into consideration and the potential impacts from the proposed development site were evaluated. Other guidance documents referred to during the production of this chapter included the following:

- Field Hydrogeology, Brassington, (1998) Second Edition, Wiley.
- Environmental Management in the Extractive Industry: Non-Scheduled Minerals" (from Project Report no. MS-2000-M1 by John Barnett and Associates Ltd. For the EPA, 2004);
- Irish Concrete Federation, "Environmental Code for the Aggregate and Concrete Products Industries" (1996). Institute of Geologists of Ireland;
- Towards Setting Environmental Quality Objectives for Soil. Discussion Document, EPA 2002;
- "Geology in Environmental Impact Statements – a Guide" (2002). U.K. Department of the Environment, Transport and the Regions;
- "Mineral Planning Guidance Note 11: Controlling and Mitigating the Environmental Effects of Minerals Extraction in England – Consultation Paper" (2000). Landscape Institute/Institute of Environmental Management and Auditing (UK);
- Towards setting Guideline Values for the Protection of Groundwater in Ireland. Interim EPA Report 2003;
- Quarries and Ancillary Activities, Guidelines for Planning Authorities, April 2004, DoEHLG.
- Environmental Code October, 2005, Irish Concrete Federation;
- Scottish Environmental Protection Agency (SEPA). Pollution prevention guidelines. Use and design of oil separators in surface water drainage systems: PPG 3 (2006);
- Scottish Environmental Protection Agency (SEPA). Pollution Prevention Guidelines. Above Ground Oil Storage Tanks: PPG2 (2006);
- CIRIA - Environment Agencies Joint Guidelines: Masonry & Concrete bunds for oil storage tanks;
- Klargester full retention separator nominal size selection sheets.

6.3. EXISTING ENVIRONMENT

Soils and Subsoil's

The area has been laid and leveled with aggregate material (crushed rock) from the quarry operations. The grounds of the Subject Site can be classified as 'made ground'. There are no naturally in-situ topsoil's or subsoil's within the area designated as the 'Subject Site'. The surrounding soils i.e. in the adjacent farmlands are tills derived from limestone. Bedrock out-crops and sub-crop is also known to be present in the general area as the subsoil's can be sometimes very shallow in the order of 1.5 to 2.1 meters. Site investigation prior to quarry operation indicated that soils on site were 0.2 to 0.4 meters deep.

Glacial Deposits

The majority of the sedimentary deposits in the Galway Bay area are as a result of the last glaciation. The general flow of ice was towards the south and southwest from ice domes centered on eastern and western Galway. Much of the area was karstified during this period a feature of post glacial processes.

Bedrock Geology

The bedrock geology of Barrettspark and the surrounding area is dominated by rocks of the carboniferous period. The site itself sits in limestone bedrock of the Lower Carboniferous period.

6.3.1. Hydrogeology

Groundwater in the region is principally reserved within the limestone formations, according with the GSI-Groundwater section the area is marked as per the Resources Protection Zones-groundwater protection scheme as a regionally important conduit aquifer with a classification of Rkc with extreme vulnerability classification. The Subject Site is situated in an in-filled area, surface water has direct access to percolate to the underlying aquifer. This does not however moderate or reduce the vulnerability of the aquifer due to the fact that these made grounds provide no treatment to surface waters prior to infiltration of joints and underlying discontinuities in the rock strata. However measures to protect ground water are dealt with in detail in the Water Section of this EIA (Section 7). Five boreholes were drilled as part of the original investigation for the surrounding quarry. The borehole logs are included in Appendix IV.

O'Neill Groundwater Hydrogeology Engineering Ltd

Hydrological and hydro-geological specialist company OGE Hydrogeology Ltd were commissioned to produce a site assessment which focused on the 2010 An Bord Pleanala further information requests (PL 07.235821, PA 09/1958 – Coshla Quarry Operational time extension application for Quarry, Concrete Plant and Asphalt Plant) and to provide a complete assessment of the hydrological, hydro-geological and the flood risk assessment of the Coshla quarry site and all of its operations (including concrete plant and asphalt plant) and at the surrounding locality. OGE Ltd is one of Irelands leading hydro-geological investigation companies; OGE has significant technical, scientific and field experience and expertise in this theme of assessment. A short description of their professional background is given as follows'.

Shane O'Neill EurGeol, PGeo, Dip, CECLA carried out the Coshla Quarry assessment work. Mr. O'Neill holds a B.A. (Mod) Geology from Trinity College Dublin, M.Sc. (Hydrogeology) and Diploma in Hydrology, University College London, and Higher Diploma in Civil Engineering Contract Administration and Law, Trinity College Dublin.

His memberships include professional membership of the Institute of Geologists of Ireland, professional membership of the Federation of European Geologists, and membership of the International Association of Hydrogeologists and the National Ground Water Association of America.

O'Neill Groundwater Engineering (OGE Hydrogeology Ltd) carried out the flood risk assessment, hydrological, hydro-geological assessments and hydrologic calculations necessary to address the further

oil spill kits. There is a double bunded mobile plant refueler, dip trays are used during refuelling. There can be no impact on ground water quality from the asphalt batching plant.

- The extent of the impact of the quarry operation on the local ground water table is between 500m and 700m of the quarry boundaries. There will be no significant diminution of groundwater resources. Annual ground water recharge from the local surface water catchment was calculated by applying a worst case recharge coefficient. This annual recharge volume was calculated as 3,172,007 m3/yr (101l/s) (Table 3, OGE report, OGE report available online at Galwaycoco.ie planning portal) to the local catchment. This means that there is an annual average volume of 2,114,671 m3 (67l/s) is available to recharge the ground.

- Annual ground water recharge (m3) for the existing quarry is assumed to be 100% of the annual effective rainfall falling on that local catchment. The GSI state that extremely vulnerable aquifers consisting of bare rock have a recharge coefficient of 80 to 90% (Appendix A, OGE report). A recharge coefficient of 85% was therefore used to calculate the annual ground water recharge of 154,059 m3/yr (4.9l/s) for the quarry site (Table 3, OGE report). This represents 5% of the recharge to ground water for the local catchment.

- In terms of the quality of the groundwater resource, there is nothing in over two years of independent hydro-chemical borehole monitoring data to suggest that there has been any adverse impact from the quarry operations on the ground water resource.

- The fully recovered ground water levels in the immediate locality will return to between 2m and 5m of the surface. It will fluctuate according to the seasons;

- The interaction of the quarry operation and the physical existence of the quarry both presently and following complete extraction, restoration and site closure have been carried out. A detailed water balance for the local surface water catchment and ground water catchment has been presented in the OGE report. It has been outlined that in periods of extreme rainfall the quarry sump is allowed to flood. This happened in November 2009. The probability of the November 2009 flood event reoccurring is less than 0.35%. The quarry sump (i.e. lowest bench area) flooded to an elevation 8.87 mOD, some 11m below ground level during the November 2009 flood event. Flood waters within the western section of the Coshla site (outside of the extraction pit) percolated away to groundwater's following abatements of the flood. There is a single settlement lagoon on site. When floodwaters abated within the Coshla site the normal procedure of pumping out the quarry sump to groundwater's recommenced. This had no impact on flood waters at Carnmore East, as flooding at Carnmore is a combination of extremely heavy precipitation and land drainage. To alleviate the flood risk at Carnmore the drainage issue at Carnmore must be addressed. The settlement pond is located in the southwest part of the site (see OGE report). The settlement pond has an area of 7450m2. The water percolates away to ground within the pond area. The settlement pond easily accommodates a constant pumping rate of 34l/s. There is no discharge off site. It has been shown in the OGE report that the presence of the Coshla Quarry extraction hole provided significant flood relief of 77,400 m3 to the locality during the November 2009 flood event. The increase in size of the extraction hole will only pose a net positive effect on this situation.

- The OGE report has established that the quarry excavation can continue to the originally outlined extraction area in the planning permission and it will not create any flood risk for the quarry site or the locality nor will it have any significant impact on the groundwater levels of the area.

- The natural water table shall be located between 2 – 5 meters of the present quarry rock surfaces (i.e. outside of the extraction hole) following closure of the site. The present

groundwater levels within the area of the quarry range from between 4.33 meters below ground level (m bgl) to 23.98 m bgl.

- The lowest groundwater level is 4.16 mOD (at a surface datum of 28.14, the groundwater level was therefore 23.98 m bgl).
- The highest groundwater level was 15.45 mOD (at a surface datum of 19.78, the groundwater was therefore 4.33 m bgl.
- The extent of the impact of the quarry operation on the local ground water table is between 500m and 700m of the quarry boundaries. There will be no significant diminution of groundwater resources. Annual ground water recharge to the local surface water catchment was calculated by applying a worst case recharge coefficient. This annual recharge volume is 3,172,007 m3/yr (101l/s) (Table 3, OGE report) to the local catchment. This means that there is an annual average volume of 2,114,671 m3 (67l/s) available to recharge the ground.
- Annual ground water recharge (m3) for the existing quarry is assumed to be 100% of the annual effective rainfall falling on that local catchment. The GSI state that extremely vulnerable aquifers consisting of bare rock have a recharge coefficient of 80 to 90% (Appendix A). A recharge coefficient of 85% was therefore used to calculate the annual ground water recharge of 154,059 m3/yr (4.9l/s) for the quarry site. This represents 5% of the recharge to ground water for the local catchment.
- There will be not significant diminution in the quantities of ground water in the local catchment.
- The OGE assessment work has established and outlined that the present location of all operational procedures (e.g. batching plants and machinery maintenance shed) is appropriate and that they do not pose any potential for flood risk or groundwater pollution. In addition appropriate management protocols and infrastructure are all in place. The management *protocols and infrastructural pollution prevention mitigations are all taken from best practice* guidelines outlined in the UK Environment Agency Pollution Prevention Guidelines (PPG1, PPG2, PPG3, 2004 & 2006). These guideline documents were outlined in detail in the submitted EIA *documentation. Significant financial resources have been spent in identifying and applying all* best practice guidelines outlined in these documents, we confirm that all relevant and necessary mitigations are currently in place at the Coshla site and this is also confirmed in the OGE hydrogeology Ltd report. In addition the OGE report outlined that there was no infrastructural impact on the site or on the batching plants during the 2009 flood event; in addition the machinery maintenance shed was not flooded, and all oil substances stored in the shed are currently done so according to best practice with mobile and stationary bund containers etc. Furthermore, following OGE assessment of borehole monitoring data from the quarry site perimeter boreholes it is established that there was no environmental impact on groundwater quality following the temporary flooding of the quarry site.
- The perimeter soil berms may be maintained, upgraded and planted with site screening vegetation, this will not pose any flood risk or any other hydrological/ hydro-geological risk.
- Safety fences around the extraction hole will not cause any flood risk.
- The removal of site infrastructure and site hard standings will not cause any flood risk impact.

origins across the wider area. The applicant has carried out bedrock permeability testing and borehole drilling as part of their site investigation works with geophysical survey methods and the corresponding sections included demonstrating the scale of solid limestone throughout the site with small pockets of clay and/or water fille fractures/fissures/conduits. This has confirmed that the site and environs are underlain by Dinantian Pure Bedded Limestones which is solid and compressed in structure with groundwater or major water pathways are only found at deep levels beneath the current and proposed elevation of the quarry floor, if at all. A section of the upper levels shows the existence of shallow, weathered rock layer known as the epikarst which is reflective of the limestone environment, any waters (small volumes) entering this layer are managed under licence.

Water has been confirmed as not encountered in the geological formations within the planned quarry depth – therefore there is no water table attributable to the proposed development for consideration by the PA.

The applicant has provided a comprehensive analysis, in conjunction with the Water Chapter (Chapter 8) of the geophysical and hydrogeological concepts in place at the site and an impact assessment in Table 7.4 of the potential impacts and their significance, quality of effect, probability, duration and frequency of effect of the Enabling, Operational Restoration phases in addition to the Unplanned Events possibility. Table 7.5 provides the suite of mitigation measures to be implemented relative to the activity and potential impact and provides an assessment of the residual effect following the mitigation. Details of the existing and continued monitoring for the site have been given to ensure the continuation and extension of the quarry activities at this location shall be undertaken with no residual effects.

Chapter 8 - Water

Chapter 8 has assessed potential impacts as a consequence of the development on hydrology and hydrogeology and has provided a suite of mitigation measures to address any potential significant effects that are identified. The comprehensive chapter provides information relating to the existing operations, water management systems in place and to be continued and proposed extension impacts. A copy of the existing Section 4 (W/469/13) discharge licence has been included in the appendices (dated January 2025). The site is within an area served by the public water supply from Uisce Eireann. No interference with groundwaters (and thus residential water supplies) shall occur as the quarry levels and quarry site in general is separate from the underground conduit-controlled flow system.

The site is located within the Galway Bay Southeast Catchment (HA29) and is fully outside the mapped catchment of Lough Corrib (HA30). The connected groundwater body (Clarinbridge GWB (IE_WE_G_0008) in the area is mapped by the EPA as Good Status (Quality) and Not At Risk. The site is within Flood Zone C (low risk) area relative to fluvial flooding.

In terms of the Water framework Directive the Planning Authority note that a Water Framework Directive Compliance Assessment Report has been submitted which covers all waterbodies (surface water and groundwater bodies) with the potential to be impacted by the proposal. The report confirms no hydraulic connection to any surface water body and no discharges to surface water from the site under current or proposed operations.

Having reviewed the WFD Assessment Report and having regard to the Site-Specific Flood Risk Assessment (Appendix 8.9) in conjunction with mitigation measures as detailed within the EIAR the Planning Authority are satisfied that there would be no change to the WFD status for groundwater bodies or downstream surface waterbodies. The Planning Authority having considered the

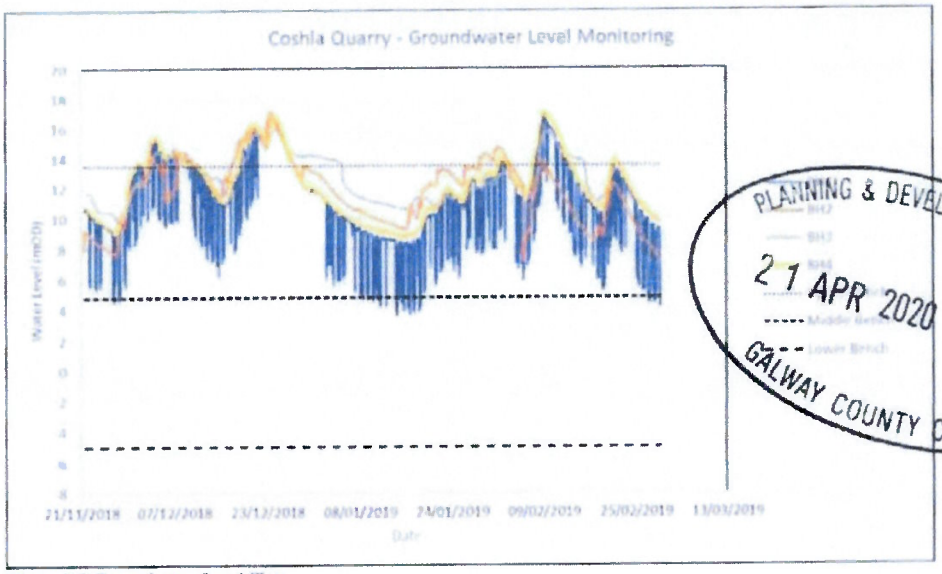

Figure 7.6 Groundwater Level Plots

To determine whether the upper competent limestone layer extends east into the proposed expansion area, a total of 18 no. 100mm investigation holes were drilled in the rock proposed for extraction (i.e. holes were drilled down to -5m OD). Apart from some shallow weathering (non-karstic) in the upper 2-3m of rock, the rock in all holes was dry, hard and competent with all holes returning fine rock chips and dust during drilling. The groundwater levels measured in the boreholes were typically <3m below ground level (groundwater level of approximately 22m OD) which is consistent with the level of the current inflows to the quarry.

The locations of the investigation holes are shown on Figure 7.7 below and drilling logs are shown in Appendix 6.2 of the Land, Soils and Geology Chapter (Chapter 6).

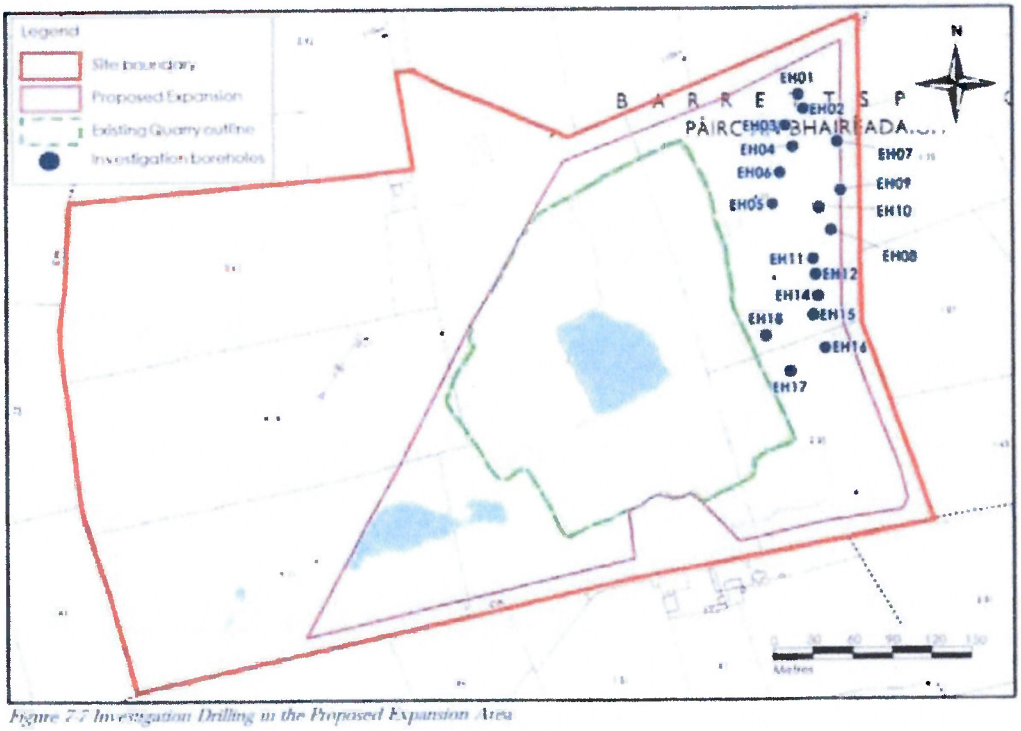

Figure 7.7 Investigation Drilling in the Proposed Expansion Area

In summary, the investigation shows that the existing extraction area and proposed extension area essentially isolated (by competent limestone) from the deeper more weathered and karstified limestone bedrock. Local recharge is flowing along the subsoil bedrock interface and entering the quarry, while deeper regional groundwater flow is occurring below the proposed quarry floor level. Please note the quarry is designed to avoid the deeper regional groundwater flow.

Water pumped from the quarry is discharged into the upper weathered layer which, at the site, is not connected due the deeper, solutionally enhanced, karst limestone. However, because it is a regionally important aquifer, it is most likely, that further downstream of the site, the discharged water does make its way down to the deeper solutionally enhanced limestone by various fracture and fault networks. This is the worst case scenario from a flood risk perspective.

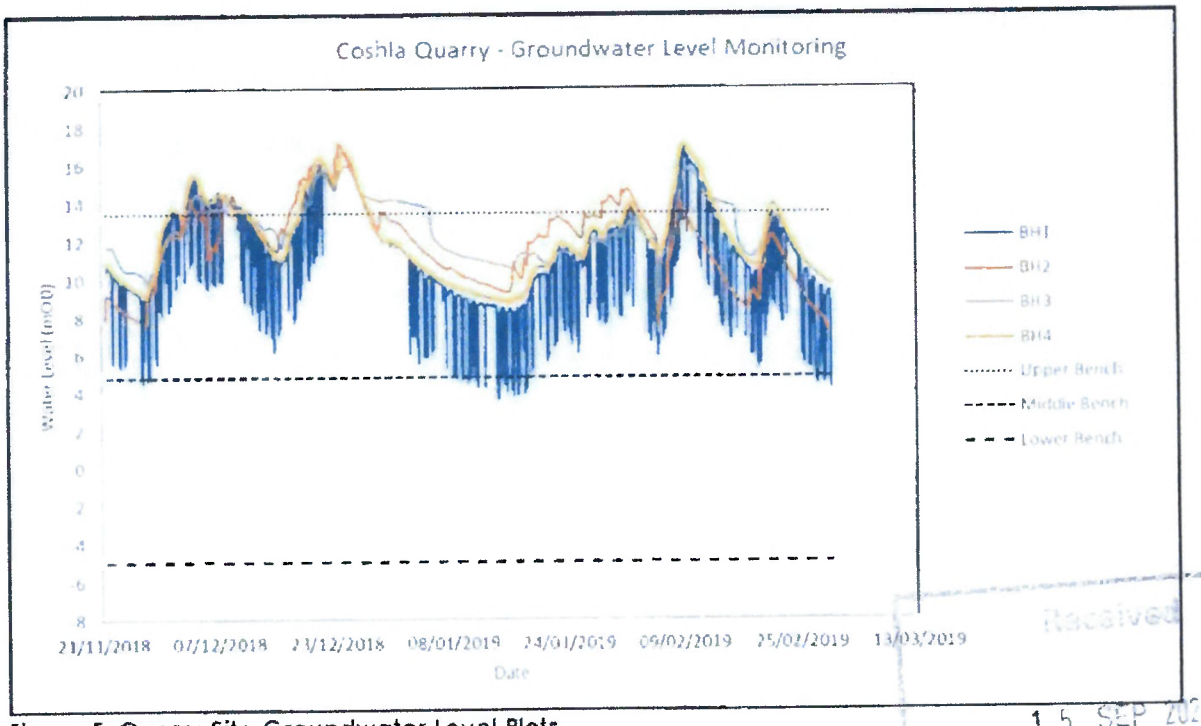

Figure F: Quarry Site Groundwater Level Plots

3.5 DESIGNATED SITES & HABITATS

Within the Republic of Ireland designated sites include National Heritage Areas (NHAs), Proposed National Heritage Areas (pNHAs), candidate Special Areas of Conservation (cSAC) and Special Protection Areas (SPAs). Designated sites in proximity to the proposed development site are listed below and shown in **Figure G**.

Designated sites with 10km of the site include Lough Corrib SAC, Galway Bay Complex SAC, Kiltullagh Turlough pNHA and Cregganna Marsh NHA. There are no surface water connections between the quarry site and any of these designated sites.

Based on an assumed groundwater flow direction in this area (refer to **Figure E** above), groundwater flow from the area of the quarry site is likely to only discharge into Galway Bay and the Galway Bay Complex SAC. Based on the regional groundwater flow direction (southwest),there are unlikely to be groundwater connections to Lough Corrib SAC or Kiltullagh Turlough pNHA.

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PROPOSED EXTENSION AT COSHLA QUARRY, BARRETTSPARK, ATHENREY, CO. GALWAY

STAGE II - FLOOD RISK ASSESSMENT

FINAL REPORT

Prepared for:

MKO IRELAND

Prepared by:

HYDRO-ENVIRONMENTAL SERVICES

4.3.4 CFRAMS Mapping

Where complete the CFRAMS OPW Flood Risk Assessment Maps are now the primary reference for flood risk planning in Ireland and supersede the PFRAM maps.

There is no CFRAM mapping available for the area of the site. The PFRA maps show no flood zones in the area of the site and this is due to the lack of surface water features locally.

Therefore, due to the lack of surface water features in the area there is a very low risk, if any, of fluvial flooding at the quarry. Therefore according to flood zone mapping guidance, the quarry site is located is Flood Zone C (Low Risk).

4.3.5 Groundwater Flood Risk

Contineous site groundwater level monitoring data, for the period November 2018 to March 2019, are shown in **Figure D** above. The maximum groundwater level recorded over the winter period was approximately 16.5m OD. This is at least 3.5m below the natural ground surface level (i.e. outside of extraction area) which varies between approximately 20 and 32m OD (Ordnance Datum). This suggest that the site does not have a shallow winter groundwater level and is very unlikley to be vulnerable to groundwater flooding due to seansonal groundwater level rises that might be observed in a turlough for instance. Obviously groundwater flooding/ponding within the extraction area is a potential hazard, but this is managed by pumping/dewatering.

The cloest GSI mapped turlough to the proposed site is Kiltullagh Turlough wich is located approximately 1.2km to the north of the site. There is no risk of the site flooding as a result of this turlough. The lands surrounding the site comprises relatively flat grassland. There is no evidence of a turlough feature adjacent to the site based on the topography and vegetation.

4.3.6 Local Consultation

To our knowledge and based on discussion with the quarry operator, there have been no reported historical flood incidences at the proposed development site or at the nearby lands.

4.3.7 Summary – Flood Risk Identification

From a fluvial flood risk perspective, the site is located in Flood Zone C (Low Risk). Due to the lack of watercourses in the area, there are no local hazards with regard fluvial flooding.

Recurring flood events are mapped by the OPW in the area Cammore which is located 1.3km to the northwest of the site. Flooding appears to be caused by heavy rain and surface water ponding in localized hollows. The proposed development site has not been affected by this flooding.

Continuous groundwater level monitoring undertaken during the winter of 2018/2019 shows that the water level at the proposed development site varies between 7 and 16.5 mOD (or 3.5 and 13 mbgl relative to local ground level). This available groundwater level data demonstrates that there is not any shallow groundwater table locally, and therefore the risk of groundwater flooding outside the extraction (which penetrates the water table) is low. There are no mapped turloughs at the adjacent lands to the site that might be susceptible to groundwater flooding.

Submission Details

Submitter

Name	jimmey acton
Address	123 parkmore estarte tuam co galway
Note	

In relation to application

File Number	2560220
Name	Quarries Ltd. Coshla
Address	Barrettspark Athenry Co. Galway H65EE33

To. The Planning Department
Galway County Council
Prospect Hill
Galway

7th April 2025

Re: Planning Application register reference 25/60220 - For continued use of the existing quarry to the permitted depth of minus 5m OD, including drilling, blasting, crushing, processing, stockpiling of materials, associated roads and ancillary services (granted under Planning Ref. File No.: 09/1958 and ABP Ref.: PL07.235821); Continued use of open storage areas; Continued use of existing permitted concrete manufacturing facility (granted under Planning Ref. File No. 09230 and 19/517: ABP-304769-19); Continued use of the existing office (granted under Planning Ref. File No.: 09/1958 and ABP Ref.: PL07.235821); Continued use of the existing maintenance shed (granted under Planning Ref. File No. 09610); Continued use of the existing water management system (including settlement lagoons), weighbridge and wheelwash; Lateral extension of the existing permitted quarry area over a previously permitted extraction area (granted under Planning Ref. File No. 06/4125) of c.4.6 ha. area to a final floor level of minus 5m OD.
The total quarry extraction area will be c. 13 Ha.; Restoration of the application area to natural habitat after uses following completion of ex-traction.
The proposed development is within an overall application area of c. 27.5 hectares and is for a total period of 22 years (comprising an operational period of 20 years followed by 2 years for restoration).
This application is accompanied by an Environmental Impact Assessment Report (EIAR)

Dear Sirs,

I refer the application submitted by Coshla Quarries Ltd. on the 4th March 2025, register reference 25/60220, seeking planning permission for the continued use of the existing quarry to the permitted depth of minus 5m OD, including drilling, blasting, crushing, processing, stockpiling of materials, associated roads and ancillary services (granted under Planning Ref. File No.: 09/1958 and ABP Ref.: PL07.235821); Continued use of open storage areas; Continued use of existing permitted concrete manufacturing facility (granted under Planning Ref. File No. 09230 and 19/517: ABP-304769-19); Continued use of the existing office (granted under Planning Ref. File No.: 09/1958 and ABP Ref.: PL07.235821); Continued use of the existing maintenance shed (granted under Planning Ref. File No. 09610); Continued use of the existing water management system (including settlement lagoons), weighbridge and wheelwash; Lateral extension of the existing permitted quarry area over a previously permitted extraction area (granted under Planning Ref. File No. 06/4125) of c.4.6 ha. area to a final floor level of minus 5m OD.
The total quarry extraction area will be c. 13 Ha.; Restoration of the application area to natural habitat after uses following completion of ex-traction.
The proposed development is within an overall application area of c. 27.5 hectares and is for a total period of 22 years (comprising an operational period of 20 years followed by 2 years for restoration).
This application is accompanied by an Environmental Impact Assessment Report (EIAR).

I wish to make the following submission/ observation in respect of the above application and I attach the appropriate fee.

application should be invalidated for the following reasons:

1. Site notice is inaccurate as it does not include Agrilime processing which is ongoing on site and is note covered under any previous planning permission or included in this current application.

2. Project description is in accurate.

Agricultural lime processing which has recently commenced on this site and has not been assessed as part of this application. Structures (see attached) and a new processing plant have been brought onto the site and erected within the last 2 weeks. At no stage has this activity been described in this current application or any previous applications for this particular site. In fact the current application explicitly states in para 1.18 of the introduction "it is NOT proposed to construct any new buildings or other infrastructure or introduce any new plant items or processes as part of this application"

The application is described in the EIAR at chapter Project Description which states:

The existing site operations comprise extraction of limestone using blasting techniques, processing (crushing and screening) of the fragmented rock to produce aggregates for construction purposes. Existing manufacturing activities at the quarry include a concrete (readymix and blocks) facility"

3.2 The existing operations at the site are currently regulated by conditions imposed under Plan Ref. File No. 09/1958 & PL 07.235821 and Plan Ref File No. 09230 and 19/517: ABP-304769-19.

3.3 Ancillary facilities at the existing quarry include an office, weighbridge, canteen, toilets and a wheelwash (with side and overhead spray bars).

3.4 The proposed development comprises the following: Continued extraction of the existing quarry to the permitted depth of minus 5 mOD, including drilling, blasting, crushing, processing, stockpiling of materials, associated roads and ancillary services (granted under Planning Ref. File No.: 09/1958 and ABP Ref.: PL07.235821);

There is no mention or description of this new unauthorised activity here. There was no description of agricultural lime processing in any previous planning applications including planning application no. 09/1958.

This current application only describes processing of aggregates for the construction and civil engineering sectors. Agricultural lime is a completely different product, serving a different market and a process that is very different than that of aggregates processing when considering the potential environmental impacts associated with it.

It is clear from reading this application that this agrilime processing has not been assessed as part of the overall application. On that basis the EIAR, the AA and the NIS are all in valid as they have not assessed the existing operation fully to include the impacts of this additional new activity and new strucres.

Agrilime plants produce a considerable amount of dust. In fact, it is part of the specified requirements of an agricultural lime that 35% of the finished product is less than 150microns. This activity produces

substantially more dust than standard aggregate processing which is the activity that has been assessed in this application.

The existing structure, as seen from the attached aerial photo, does not appear to have the benefit of any planning permission. Indeed, I have searched the planning files, and I can find no permission in respect of this development. It appears therefore to comprise an unauthorised activity.

In addition, the associated fuel tank located beside the generator is not in a bund and clearly has not been considered, described or assessed as part of this application. For example, the AA screening report states: "No new fuel or oil storage systems are proposed. All fuel, oils and admixtures are stored at locations around the manufacturing area of the existing quarry. Fuel is delivered to site by fuel companies and dispersed directly into a mobile double skinned fuel bowser. A small volume of fuel is stored in storage tanks located at the working quarry, that are appropriately bunded to contain any potential leakages".

3. The Planning Authority is the competent authority having responsibilities under the Habitats Directive and on the basis that the information supplied as part of this application has not included all activity on this site it is not possible for the local authority to satisfy the threshold to grant permission for this application. The threshold being *"So far as concerns the assessment carried out under Article 6(3) of the Habitats Directive, it should be pointed out that it cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned."* This is a strict standard, and the Planning Authority does not have legal jurisdiction

In these circumstances I call upon Galway County Council to invalidate the application as it is not open to the Planning Authority to consider an application for planning permission where there is an unauthorised development being carried out on the site. In the alternative, Galway County Council must refuse the application. The proposed development is contrary to proper planning and sustainable development.

Jimmey Acton

Jimmey Acton

.2.2 Step 1 – Initial Choice of Appropriate Junction Form

The most appropriate type of junction to be used depends on a number of factors but primarily safety and operational performance, and will be subject to the evaluation of design year traffic movements at the junction, the nature and proportions of large vehicles and a road safety audit. The following section presents the most appropriate junction types based on projected traffic flows on both the major road and minor road. These values can be used for an initial assessment of the most appropriate junction type; however, the final junction type will be subject to traffic analysis by the designer to assess the capacity based on the projected turning movements at the junction.

4.2.2.1 Priority Junctions

Simple priority junctions are typically the most appropriate junction type for all local accesses on single carriageway roads. On dual carriageways, simple junctions must be restricted to left in/left out only with the exception of single lane sections of Type 3 Divided Roads where right turns off the major road are permitted. Further guidance in relation to simple junctions on Type 3 Divided Roads is given in Chapter 5.

For junctions with a lightly trafficked minor road, the provision of a simple priority junction is the most appropriate junction type where the projected traffic flows (2-way Annual Average Daily Traffic - AADT) are less than those presented in Table 4.1 for both the major road and the minor road. Where traffic flows fall within the ranges outlined in Table 4.1, the provision of a ghost island junction is the most appropriate junction type. The final junction type will be subject to traffic analysis by the designer to assess the capacity based on the projected turning movements at the junction.

Table 4.1 Flow Ranges – Ghost Island junctions

Major road AADT	Minor road AADT	
< 5,000	> 600	< 5,000
5,000 - 10,000	> 450	< 3,000
> 10,000	> 300	< 1,500

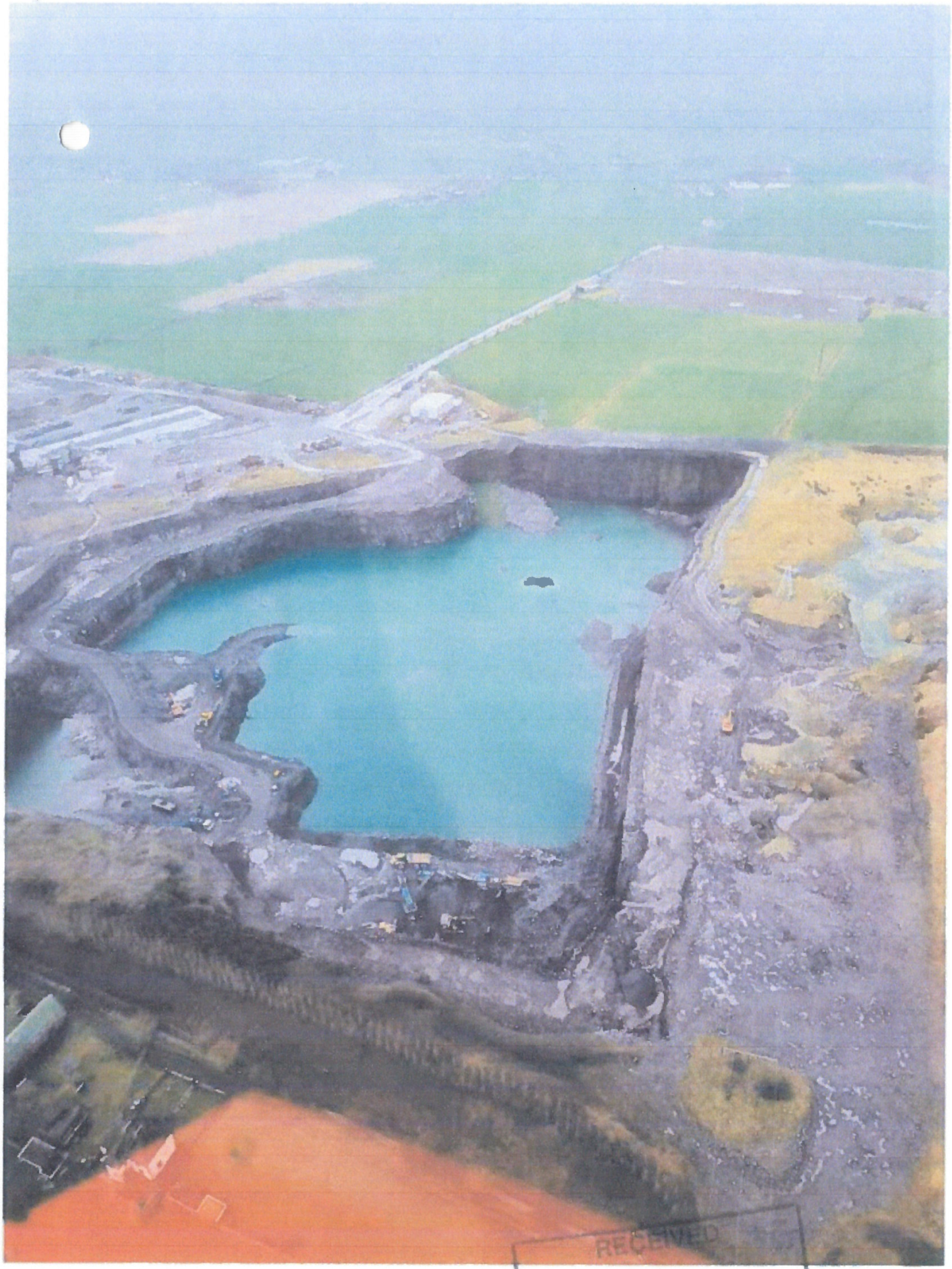
Note: AADT values provided should only be used as an initial assessment of the most appropriate junction type, the final junction arrangement shall be informed by a detailed analysis of peak hour flows (see Appendix D).

On Type 2 and Type 3 Single Carriageway schemes, nearside passing bays shall be provided at all simple priority junctions that do not warrant a ghost island right turn lane.

At traffic flows greater than those noted in Table 4.1, the provision of an alternative junction design such as a roundabout, compact grade or full grade separated junction should be considered.

4.2.2.2 Roundabouts

Roundabouts work most efficiently when vehicular flows are reasonably balanced between the arms, but they may also be the optimum choice in other cases subject to traffic analysis by the designer based on the projected turning movements at the junction. Roundabouts should be designed to match forecast peak hourly flows. The capacity of roundabouts is determined by a number of factors such as their geometric design and whether they are single or multi-lane roundabouts. Entry width and sharpness of flare, as described in Chapter 6, are the most important geometric parameters that determine capacity.



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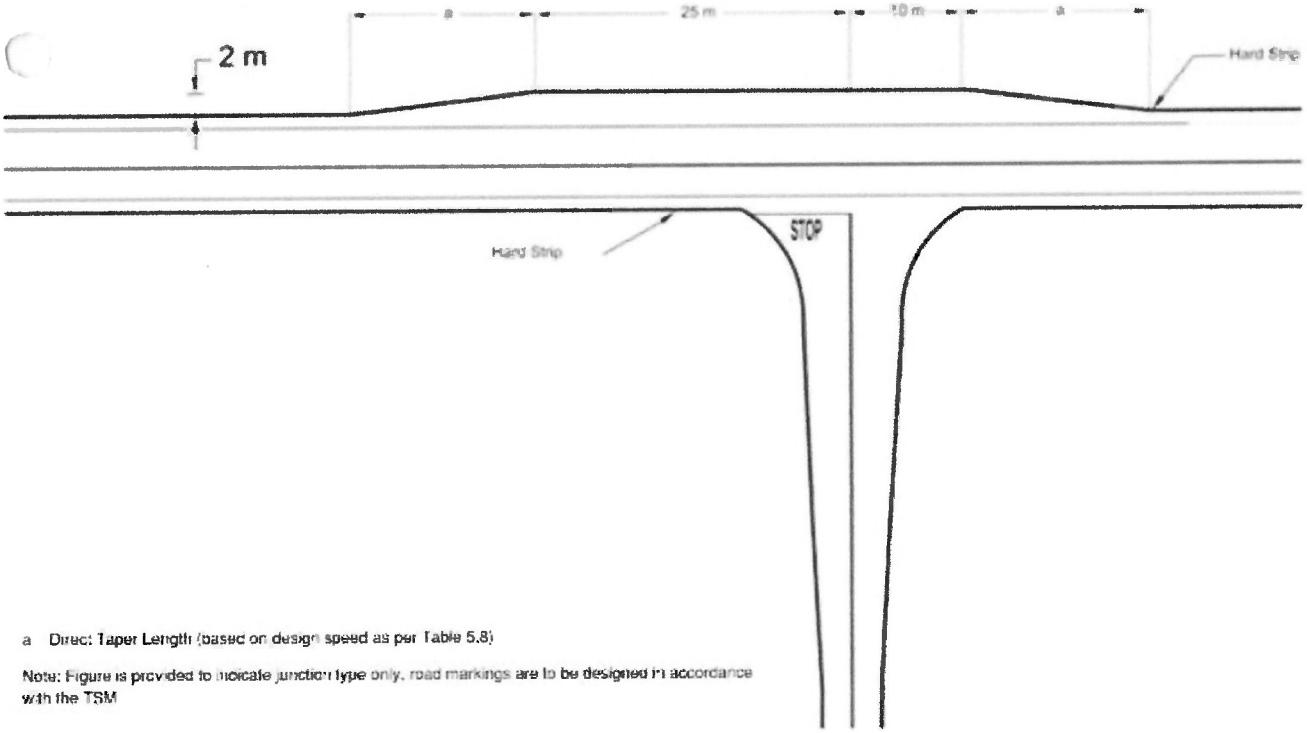

Figure 5.5 Priority Junction with Nearside Passing Bay for Roads without Hard Shoulders

5.3.2 Ghost Island

Ghost island junctions may be used on new single carriageway roads, or in the upgrading of existing junctions to provide right turning vehicles with a degree of shelter from the through flow. They are highly effective in improving safety for turning traffic on the major road.

The use of ghost island junctions on rural single carriageway roads can, in certain circumstances, pose safety problems. In situations where the opportunity for overtaking on the major road on either side of the junction is restricted, the presence of a widened carriageway, albeit with hatch markings, could result in overtaking manoeuvres which may conflict with right turning movements into and out of the minor road.

On single carriageway roads where overtaking opportunities are limited, the Designer should consider the provision of raised medians on the approaches to the junction as outlined in Section 5.6.10.

5.3.3 Left Diverge Loops

For right turning movements of low volume where signing is not required, an alternative measure is a left hand diverging lane loop as shown in Figure 5.6. This type of junction should only be used where the minor road is providing local access only i.e. very low turning movements with users who are familiar with the layout and where the road layout may lead to overtaking through a simple priority junction if provided.

4.2.2 Step 1 – Initial Choice of Appropriate Junction Form

The most appropriate type of junction to be used depends on a number of factors but primarily safety and operational performance, and will be subject to the evaluation of design year traffic movements at the junction, the nature and proportions of large vehicles and a road safety audit. The following section presents the most appropriate junction types based on projected traffic flows on both the major road and minor road. These values can be used for an initial assessment of the most appropriate junction type; however, the final junction type will be subject to traffic analysis by the designer to assess the capacity based on the projected turning movements at the junction.

4.2.2.1 Priority Junctions

Simple priority junctions are typically the most appropriate junction type for all local accesses on single carriageway roads. On dual carriageways, simple junctions must be restricted to left in/left out only with the exception of single lane sections of Type 3 Divided Roads where right turns off the major road are permitted. Further guidance in relation to simple junctions on Type 3 Divided Roads is given in Chapter 5.

For junctions with a lightly trafficked minor road, the provision of a simple priority junction is the most appropriate junction type where the projected traffic flows (2-way Annual Average Daily Traffic - AADT) are less than those presented in Table 4.1 for both the major road and the minor road. Where traffic flows fall within the ranges outlined in Table 4.1, the provision of a ghost island junction is the most appropriate junction type. The final junction type will be subject to traffic analysis by the designer to assess the capacity based on the projected turning movements at the junction.

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Note: AADT values provided should only be used as an initial assessment of the most appropriate junction type, the final junction arrangement shall be informed by a detailed analysis of peak hour flows (see Appendix D).

On Type 2 and Type 3 Single Carriageway schemes, nearside passing bays shall be provided at all simple priority junctions that do not warrant a ghost island right turn lane.

At traffic flows greater than those noted in Table 4.1, the provision of an alternative junction design such as a roundabout, compact grade or full grade separated junction should be considered.

4.2.2.2 Roundabouts

Roundabouts work most efficiently when vehicular flows are reasonably balanced between the arms, but they may also be the optimum choice in other cases subject to traffic analysis by the designer based on the projected turning movements at the junction. Roundabouts should be designed to match forecast peak hourly flows. The capacity of roundabouts is determined by a number of factors such as their geometric design and whether they are single or multi-lane roundabouts. Entry width and sharpness of flare, as described in Chapter 6, are the most important geometric parameters that determine capacity.

9	Gort – Loughrea	R380
10	Lough George – Annagh Hill	R354
11	Kilcolgan – Galway /Clare County Boundary	R458
12	Baile Chláir – M6 (Junction 19) – Oranmore	R381

Table 15.2 Restricted Regional Roads

DM Standard 28: Sight Distances Required for Access onto National, Regional, Local and Private Roads

Vehicular entrances and exit points must be designed by the developer as part of a planning application with adequate provision for visibility so that drivers emerging from the access can enjoy good visibility of oncoming vehicles, cyclists and pedestrians. Where a new entrance is proposed, the Planning Authority must consider traffic conditions and available sight lines. Road junction visibility requirements shall comply with *Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions) (DN-GEO-03060)* for rural roads and *Design Manual for Urban Roads and Streets* for urban roads (including any updated/ superseding document). Where substantial works are required in order to facilitate the provision of adequate sight distances lands within the sight distance triangles shall be within the control of the applicant and shall be subject of a formal agreement with the adjacent landowner which ensures certainty that the applicant is in a position to comply with the relevant condition and or standard.

Exit Visibility Check

Visibility splays shall be measured a minimum distance of 2.4m from the edge of the carriageway ('x' distance) or as determined by Galway County Council. In limited instances this may be reduced to 2.4m and to 2.0m in difficult circumstances on urban roads.

Site visibility requirements shall be provided within the development boundary of the site or on lands in the control of the applicant or lands in public ownership.

Table 5.1 Possible priority junction types for different major road carriageway types

Carriageway Type	Junction Type					
	Simple (Fig. 2/1)			Ghost Island (Fig. 2/4)		
Standard	╦	╦	╬	╦	╦	╬
Single Carriageway	Yes	Yes	No	Yes	Yes	No
Type 1 Dual	Yes†	No	No	No	No	No
Type 2 Divided	Yes†	No	No	No	No	No
Type 3 Divided	Yes†	No	No	Yes	No	No
Motorway	No	No	No	No	No	No

╦ *T-Junction* ╦ *Staggered Junction* ╬ *Crossroads*

† *Left-in/left-out junctions only (see DN-GEO-03031 for more details by road type)*

Simple junctions (such as the simple T-Junctions) are appropriate for most minor junctions on single carriageway roads but left-in/left-out junctions are the preferred option as they reduce conflicts on the national road network. On dual carriageways and divided roads, simple junctions shall be restricted to left in/left out only.

The decision to provide a ghost island right turning facility shall be made in accordance with the guidance contained in Chapter 4. The choice of type of right turn facility to be used, however, will depend on the particular site characteristics and results of traffic modelling of the turning movements at the junction.

On single lane sections of Type 3 Divided Roads, a ghost island right turning facility off the major road may be provided as a Departure from Standards. Right turn manoeuvres onto the major road from the minor road shall not be permitted in such cases (see Figure 5.25 to Figure 5.27).

5.3.1 Simple Priority Junction

Where a simple priority junction is provided on a Type 2 or Type 3 Single Carriageway, a nearside passing bay as detailed in Figure 5.5 shall be provided to allow through traffic on the major road pass a vehicle waiting to turn right. The total length of the nearside passing bay may need to be increased where it is anticipated that HGVs will be turning off the major road.

On single carriageway roads where overtaking opportunity is limited, simple priority junctions should be sited on non-overtaking sections, as defined in DN-GEO-03031.

The use of simple priority junctions with a nearside passing bay on rural single carriageway roads can, in certain circumstances, pose safety problems. In situations where overtaking opportunity on the major road on either side of the junction is restricted, the presence of a widened carriageway, could result in overtaking manoeuvres which may conflict with right turning movements into and out of the minor road.

Considering the above, designers should avoid providing simple priority junctions in locations where overtaking sections are restricted upstream and downstream of the junction.

WALL OBSCURING VIEWS AT R339/L7109 JUNCTION

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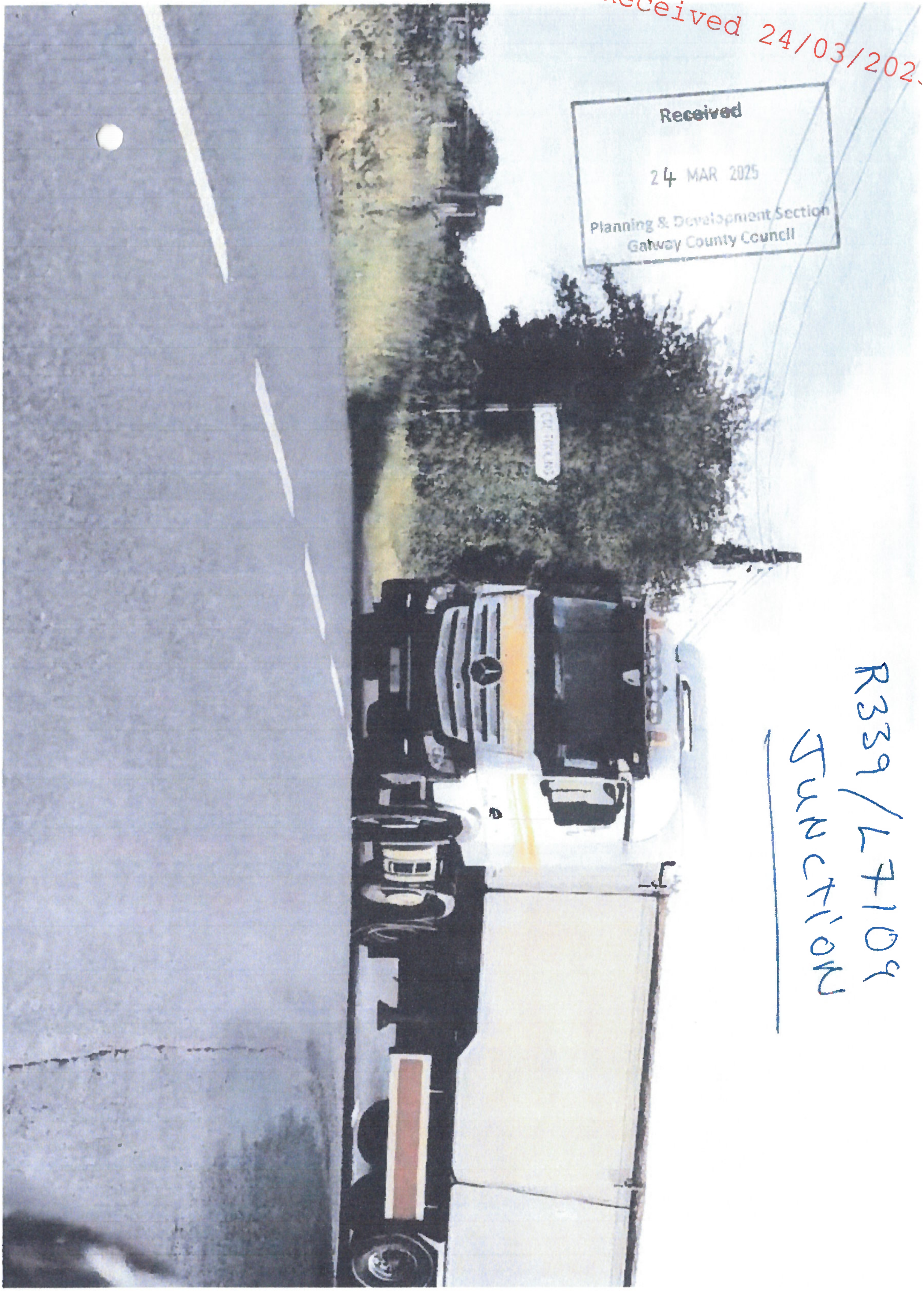

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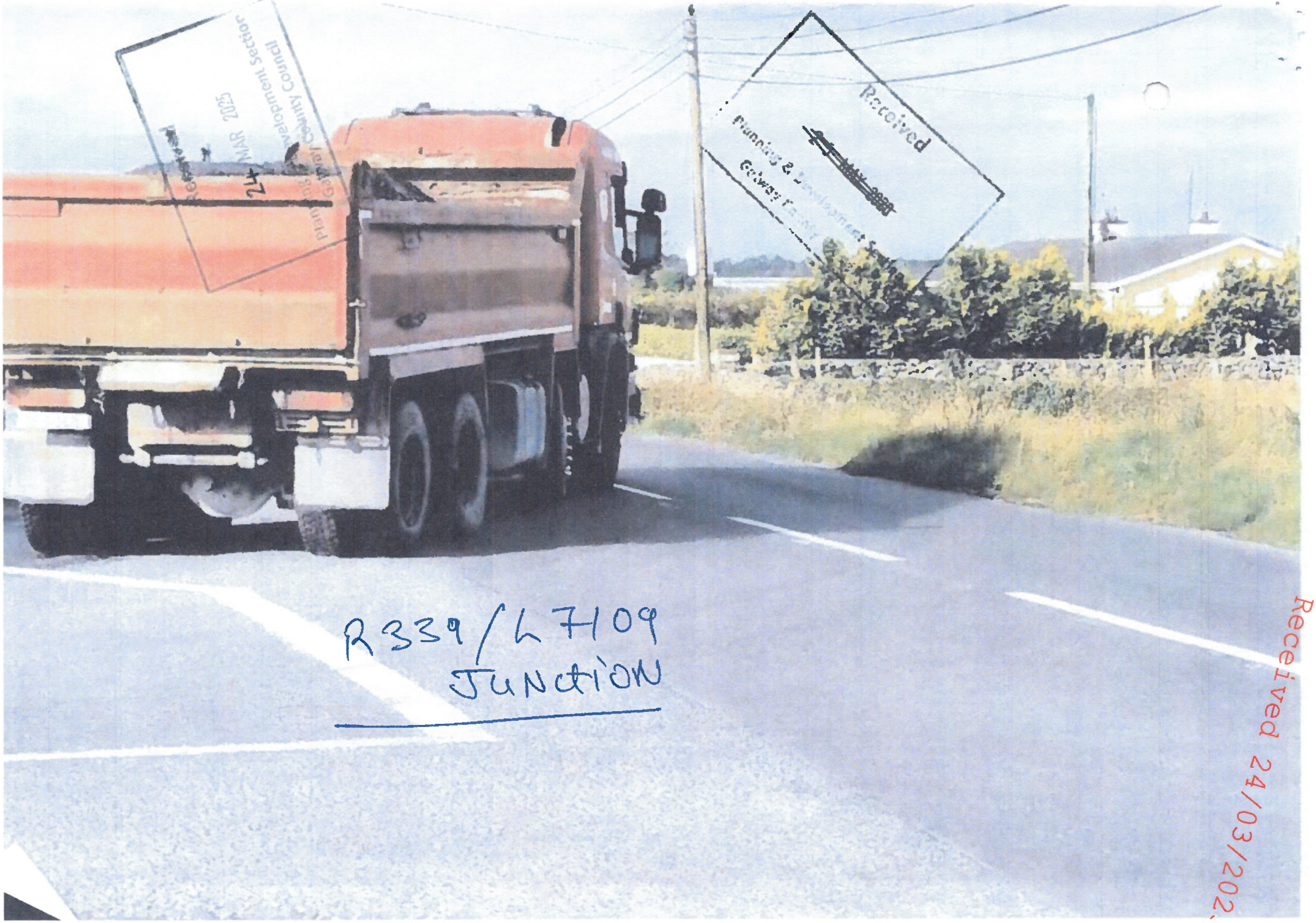
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