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Appendix G

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**WATER FRAMEWORK DIRECTIVE ASSESSMENT
PROPOSED DIMENSIONAL STONE QUARRY AT BANNAGAGOLE,
OLD LEIGHLIN, CO. CARLOW**

FINAL REPORT

Prepared for:
MILFORD QUARRIES LTD

Prepared by:
HYDRO-ENVIRONMENTAL SERVICES

DOCUMENT INFORMATION

Document Title:	WATER FRAMEWORK DIRECTIVE ASSESSMENT PROPOSED DIMENSIONAL STONE QUARRY AT BANNAGAGOLE, OLD LEIGHLIN, CO. CARLOW
Issue Date:	06 th March 2023
Project Number:	P1591-0
Project Reporting History:	
Current revision no:	FINAL_REV F0
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1. INTRODUCTION

1.1 BACKGROUND

Hydro-Environmental Services (HES) were requested by Milford Quarries Ltd, to complete a Water Framework Directive (WFD) Compliance Assessment for the proposed dimension stone quarry at Bannagagole, Old Leighlin, Co. Carlow.

The proposed development site at Bannagagole, Old Leighlin Co. Carlow (the 'site'), occupies a total area of ~9.34 hectares (ha) and forms part of the applicant's wider landholding of ~26ha. The site is located ~1.5km south of the village of Old Leighlin, ~5km southwest of Leighlinbridge and immediately south of the existing Old Leighlin Quarry. The M9 motorway is located to the east of the site with the closest access point being located ~7km to the south at Junction 7. Junction 6 of the M9 motorway at Powerstown is located ~10km to the northeast.

The purpose of this WFD assessment is to determine if any specific components or activities associated with the proposed development will compromise WFD objectives or cause a deterioration in the status of any surface water or groundwater body and/or jeopardise the attainment of good surface water or groundwater status. This assessment will determine the water bodies with the potential to be impacted, describe the proposed mitigation measures and determine if the project is in compliance with the objectives of the WFD.

This WFD Assessment is intended to supplement the EIAR submitted as part of the planning application.

1.2 STATEMENT OF AUTHORITY

Hydro-Environmental Services (HES) are a specialist hydrological, hydrogeological and environmental practice that delivers a range of water and environmental management consultancy services to the private and public sectors across Ireland and Northern Ireland. HES was established in 2005, and our office is located in Dungarvan, County Waterford. We routinely complete impact assessments for hydrology and hydrogeology for a large variety of project types including wind farms.

This WFD assessment was prepared by Michael Gill, Conor McGettigan and Jenny Law.

Michael Gill (P. Geo., B.A.I., MSc, Dip. Geol., MIEI) is an Environmental Engineer with over 22 years' environmental consultancy experience in Ireland. Michael has completed numerous hydrological and hydrogeological impact assessments of wind farms in Ireland. He has also managed EIAR assessments for infrastructure projects and private residential and commercial developments. In addition, he has substantial experience in wastewater engineering and site suitability assessments, contaminated land investigation and assessment, wetland hydrology/hydrogeology, water resource assessments, surface water drainage design and SUDs design, and surface water/groundwater interactions. For example, Michael has worked on the EIS/EIARs for Slievecallan WF, Cahermurphy (Phase I & II) WF, Carrownagowan WF, and Croagh WF and over 100 other wind farm related projects across the country.

Conor McGettigan (BSc, MSc) is an Environmental Scientist with 3 years' experience in environmental consultancy in Ireland. Conor holds an M.Sc. in Applied Environmental Science (2020) and a B.Sc. in Geology (2016) from University College Dublin. Conor has prepared the Land, Soils and Geology and Hydrology and Hydrogeology Chapters for numerous wind farm EIAR projects. Conor routinely competes WFD Assessments for a wide variety of projects including wind farms, quarries and proposed residential developments.

Jenny Law (BSc, MSc) is an environmental geoscientist holding an honours degree in applied environmental geosciences from the University College Cork. Jenny has assisted in the

preparation of the land, soils and geology and hydrology chapters for various environmental impact assessment reports, hydrological impact assessments, Water Framework Directive Assessment reports and Flood Risk Assessment reports for a variety of projects including several wind farm developments and strategic housing developments.

1.3 WATER FRAMEWORK DIRECTIVE

The EU Water Framework Directive (2000/60/EC), as amended by Directives 2008/105/EC, 2013/39/EU and 2014/101/EU ("WFD"), was established to ensure the protection of the water environment. The Directive was transposed in Ireland by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003).

The WFD requires that all member states protect and improve water quality in all waters, with the aim of achieving good status by 2027 at the latest. Any new development must ensure that this fundamental requirement of the WFD is not compromised.

The WFD is implemented through the River Basin Management Plans (RBMP) which comprises a six-yearly cycle of planning, action and review. RBMPs include identifying river basin districts, water bodies, protected areas and any pressures or risks, monitoring and setting environmental objectives. In Ireland the first RBMP covered the period from 2010 to 2015 with the second cycle plan covering the period from 2018 to 2021.

The River Basin Management Plan (2018 - 2021) objectives, which have been integrated into the design of the proposed wind farm development, include:

- Ensure full compliance with relevant EU legislation;
- Prevent deterioration and maintain a 'high' status where it already exists;
- Protect, enhance and restore all waters with aim to achieve at least good status by 2027;
- Ensure waters in protected areas meet requirements; and,
- Implement targeted actions and pilot schemes in focused sub-catchments aimed at (1) targeting water bodies close to meeting their objectives and (2) addressing more complex issues that will build knowledge for the third cycle.

Our understanding of these objectives is that water bodies, regardless of whether they have 'Poor' or 'High' status, should be treated the same in terms of the level of protection and mitigation measures employed.

Furthermore, the Department of Housing, Local Government and Heritage are currently reviewing the submissions made on the Draft River Basin Management Plan (2022 - 2027) which was out for public consultation in Q4 of 2021 and Q1 of 2022. The draft plan will be updated with a view to finalization and publication.

2. WATERBODY IDENTIFICATION & CLASSIFICATION

2.1 INTRODUCTION

This section identifies those surface water and groundwater bodies with potential to be affected by the proposed development and reviews any available WFD information.

2.2 SURFACE WATERBODY IDENTIFICATION

Regionally, the overall landholding at Bannagogle is located within the Barrow River surface water catchment and Hydrometric Area 14 of the South Eastern River Basin District. More locally, the landholding is located within the Barrow_110 sub-catchment (Barrow_SC_110) and 2 no. WFD river sub-basins.

The site is located towards the north of the overall landholding and is situated within the Old Leighlin Stream_020 river sub-basin. Further to the south, the southern section of the overall landholding is located in the Barrow_190 river sub-basin.

Within the Old Leighlin Stream_020 river sub-basin, the Baunleath stream originates to the southeast of the site along the L3036. This stream flows to the east before veering northwards and discharging into the Old Leighlin stream (also known as the Madlin River) ~2km northeast of the site. These watercourses in the vicinity of the site form part of the Old Leighlin Stream_020 Surface Waterbody (SWB). The Old Leighlin stream then flows to the southeast, discharging into the Barrow River (Barrow_190 SWB) to the south of Leighlinbridge.

Within the Barrow_190 river sub-basin, the Burgage stream flows eastwards to the south of the overall landholding and discharges into the Barrow River ~3.5km east of the site. This stream also forms part of the Barrow_190 SWB.

The River Barrow then continues to flow to the south past Bagenalstown, Co. Carlow and Graiguenamanagh, Co. Kilkenny before the Barrow_240 SWB discharges into the Upper Barrow Estuary transitional waterbody near Saint Mullins, ~25km south of the site. Further downstream and to the north of New Ross, the Barrow confluences with the Nore River to form the Barrow Nore Estuary Upper SWB. Downstream of New Ross the estuary forms the New Ross Port transitional waterbody. Further downstream, near Cheekpoint, this transitional waterbody discharges into the Lower Suir Estuary which in turn transitions into the Barrow Suir Nore Estuary. Finally the Barrow Suir Nore Estuary discharges into the Waterford Harbour coastal waterbody.

Figure A below is a local hydrology map of the area.

Table A presents the total upstream catchment area of each river waterbody downstream of the site. The Old Leighlin Stream_020 SWB has by far the smallest total upstream catchment (19.8km²) of any river waterbody downstream of the site. The catchment area increases dramatically downstream of the Madlin River with the Barrow_190 SWB having a catchment area of ~2,416km². The catchment area of the Barrow River continues to increase further downstream with the Barrow_240 SWB having a total upstream catchment of 2,829km². Therefore, the Old Leighlin Stream_020 SWB will be most susceptible to water quality/quantity impacts associated with the proposed development due to its smaller catchment area.

Table A: Downstream Catchment Size for River Waterbodies

WFD River Sub-Basin	Total Upstream Catchment Area (km ²)
Old Leighlin Stream_020	19.8
Barrow_190	2,416
Barrow_200	2,428
Barrow_210	2,575
Barrow_220	2,615
Barrow_230	2,774
Barrow_240	2,829

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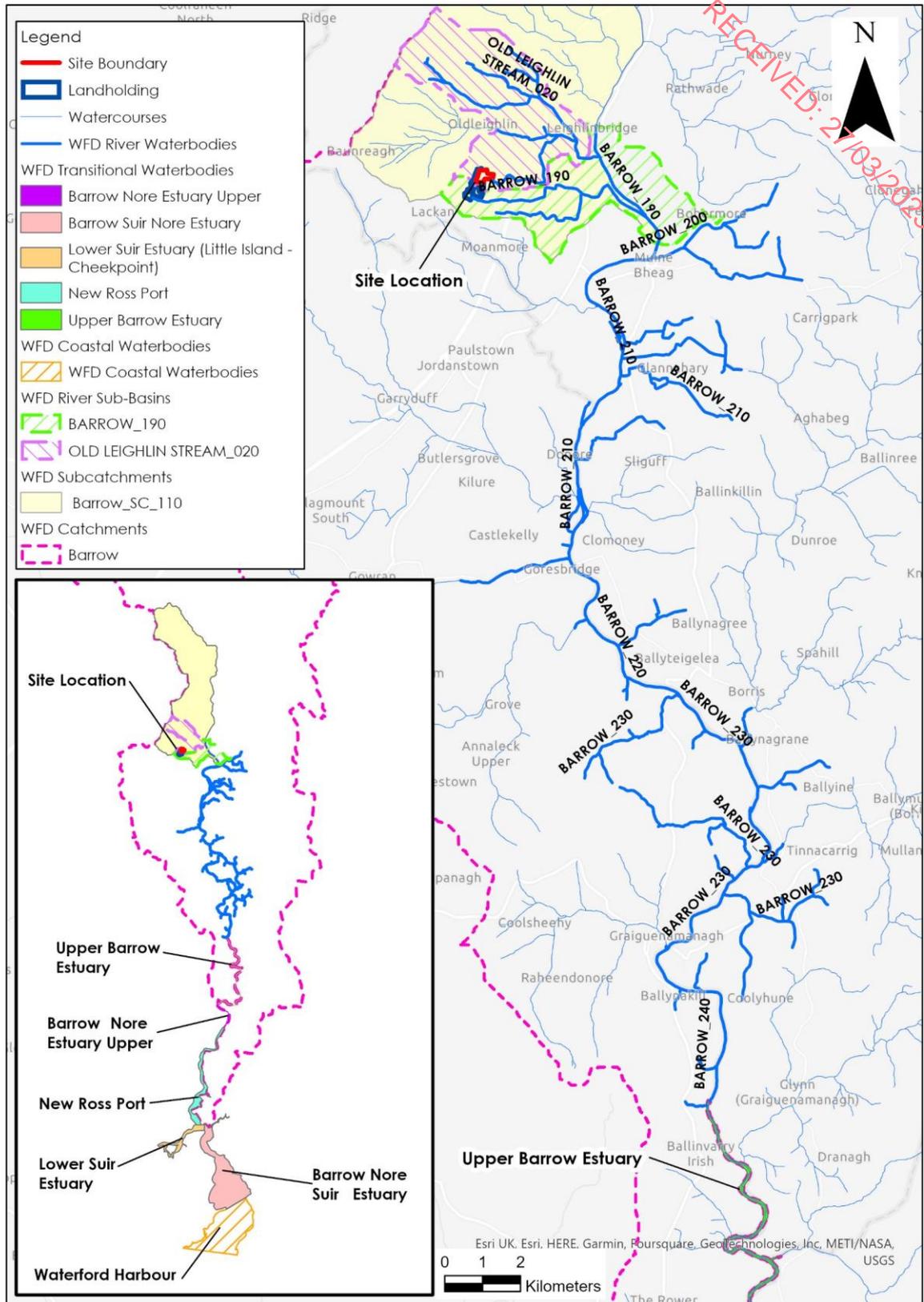


Figure A: Local Hydrology Map

2.3 SURFACE WATER BODY CLASSIFICATION

A summary of the WFD status and risk result for Surface Water Bodies (SWBs) downstream of the site are shown in **Table B**. The overall status of SWBs is based on the ecological, chemical and quantitative status of each SWB.

Local Groundwater Body (GWB) and Surface water Body (SWB) status information is available from (www.catchments.ie).

As stated above the site is located within the Old Leighlin Stream_020 river sub-basin. This SWB achieved "Moderate" status in all 3 no. WFD cycles (2010-2015, 2013-2018 and 2016-2021). Downstream of the confluence of the Madlin and Barrow rivers, the Barrow_190 SWB has been assigned "Moderate" status after being "Unassigned" with regards its WFD status in previous cycles. Meanwhile, near Bagenalstown the Barrow_200 SWB achieved "Moderate" status in the latest WFD cycle (2016-2021). Further downstream, the Barrow_210 SWB, downstream of Bagenalstown, and the Barrow_230 SWB, located between Borris and Graiguenamanagh, both achieved "Poor" status in all 3 no. WFD cycles. The Barrow_220 SWB and the Barrow_240 SWBs upstream of the Barrow Estuary achieved "Moderate" status in the latest WFD cycle.

In terms of transitional waterbodies downstream of the site, the Upper Barrow Estuary, the Lower Suir Estuary, the Barrow Nore Estuary, the New Ross Port SWB and the Barrow, Nore, Suir Estuary all achieved "Moderate" status in the latest WFD cycle (2016-2021). Further downstream the Waterford Harbour coastal waterbody also achieved "Moderate" status. We note that the Waterford Harbour coastal waterbody is listed as a designated shellfish area.

In terms of risk status, the Old Leighlin Stream_020 SWB in the vicinity of the site is currently 'at risk' of failing to meet its WFD objectives. Meanwhile, the risk status of the Barrow_190 SWB is currently under review. Further downstream the Barrow_200 SWB has been deemed to be "not at risk" while the Barrow_210, _220 and _230 SWBs are all "at risk" of failing to meet their respective WFD objectives. Furthermore, the 4 no transitional waterbodies located downstream of the site and the Waterford Harbour coastal waterbody are all "at risk" of failing to meet their respective WFD objectives.

The 3rd Cycle Draft Barrow Catchment Report (EPA, 2021) states that excess nutrients and morphological impacts remain the most prevalent issues in this catchment.

Agriculture is listed as a significant pressure on 2 no. river waterbodies (Old Leighlin Stream_020 and Barrow_220), 4 no. transitional waterbodies (Barrow Nore Estuary, New Ross Port, Lower Suir Estuary and Barrow, Nore, Suir Estuary) and 1 no. coastal waterbody (Waterford Harbour) downstream of the site. In relation to agriculture the draft catchment report (EPA, 2021) states that the issues related to farming in this catchment include diffuse phosphorus loss to surface water from, for example, direct discharges; or runoff from yards, roadways or other compacted surfaces, or runoff from poorly draining soils. High PIP for surface water nitrates was noted in arable and pasture lands, sediment is also a problem from land drainage works, bank erosion from animal access or stream.

Meanwhile, hydromorphology has been listed as a significant pressure on 2 no SWBs downstream of the site (Barrow_210 and Barrow_230). In relation to hydromorphology the draft catchment report (EPA, 2021) states that several waterbodies have been subject to extensive modification due to channelisation.

Urban runoff is note as a significant pressure on the Barrow_210, Barrow Nore Estuary and Waterford Harbour SWBs, The draft catchment report (EPA, 2021) states that diffuse urban pressures, caused by misconnections, leaking sewers and runoff from paved and unpaved areas, have been identified as a significant pressure in 12 no. river waterbodies within the catchment as well as Barrow Nore Estuary Upper transitional waterbody. Elevated concentrations of phosphates and ammonia are the significant issues. The Barrow_210 SWB is impacted by Goresbridge while Barrow Nore Estuary Upper is impacted by New Ross.

The SWB status for the 2016-2021 WFD cycle are shown on **Figure B**.

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Table B: Summary WFD Information for Surface Water Bodies

SWB	Overall Status (2010-2015)	Risk Status (2 nd Cycle)	Overall Status (2013-2018)	Overall Status (2016-2021)	Risk Status (3 rd Cycle)	Pressures
Old Leighlin Stream_020	Moderate	At risk	Moderate	Moderate	At risk	Agriculture
Barrow_190	Unassigned	Under Review	Unassigned	Moderate	Under Review	
Barrow_200	Good	Not at risk	Good	Moderate	Not at risk	-
Barrow_210	Poor	At risk	Poor	Poor	At risk	Hydromorphology, Industry & Urban Runoff
Barrow_220	Moderate	At risk	Moderate	Moderate	At risk	Agriculture
Barrow_230	Poor	At risk	Poor	Poor	At risk	Hydromorphology & Other
Barrow_240	Unassigned	Under Review	Moderate	Moderate	Under Review	
Transitional Waterbodies						
Upper Barrow Estuary	Good	Under Review	Good	Moderate	Under Review	
Barrow Nore Estuary Upper	Good	Under Review	Moderate	Moderate	At risk	Agriculture & Urban Runoff
New Ross Port	Moderate	At risk	Moderate	Moderate	At risk	Agriculture
Lower Suir Estuary	Moderate	At risk	Good	Moderate	At risk	Agriculture
Barrow Nore Suir Estuary	Good	Not at risk	Moderate	Moderate	At risk	Agriculture
Coastal Waterbodies						
Waterford Harbour	Good	Under Review	Moderate	Moderate	At risk	Agriculture and Urban Runoff

2.4 GROUNDWATER BODY IDENTIFICATION

The site is underlain by Dinantian Pure Bedded Limestones of the Clongrenan and Ballyadams Formations. These are classified by the GSI as being a Regionally Important Aquifer – Karstified (diffuse) (www.gsi.ie).

Dinantian Pure Bedded Limestones are also mapped to the north, south and east of the site. Meanwhile, Namurian Shales of the Killeshin Siltstone Formation and the Luggacurren Shale Formation are mapped to the west of the site and underlie the southwest of the overall landholding. These bedrock geology formations are classified by the GSI as being Poor Aquifer -Bedrock which is Generally Unproductive except for Local Zones (PI) and a Poor Aquifer – Bedrock which is Generally Unproductive (Pu) respectively (www.gsi.ie).

The majority of the site is underlain by the Bagenalstown Lower Groundwater Body (GWB) which is characterised by a karstic flow regime. Meanwhile, a small area in the southwest of the site is underlain by the Shanragh GWB which is characterised by poorly productive bedrock.

2.5 GROUNDWATER BODY CLASSIFICATION

The Bagenalstown Lower (IE_SE_G_157) and Shanragh GWBs (IE_SE_G_124) that underly the site achieved “Good” status in all 3 no. WFD cycles (2010-2015, 2013-2018 and 2016-2021) which is defined based on the quantitative status and chemical status of the GWB. The risk status of these GWBs is currently under review while the no significant pressure have been identified to be impacting on these GWBs.

The GWB status for the 2016-2021 WFD cycle is shown on **Figure B**.

Table C: Summary WFD Information for Groundwater Bodies

GWB	Overall Status (2010-2015)	Risk Status (2 nd Cycle)	Overall Status (2013-2018)	Overall Status (2016-2021)	Risk Status (3 rd Cycle)	Pressures
Bagenalstown Lower	Good	Under Review	Good	Good	Under Review	-
Shanragh	Good	Good	Good	Good	Under Review	-

2.6 PROTECTED AREAS

The WFD requires that activities are also in compliance with other relevant legislation, as considered below.

The potential effect of the proposed development on nature conservation designations, bathing waters, nutrient sensitive areas (NSAs), shellfish areas and drinking water protected areas (DWPAs) are also included as part of the WFD Compliance Assessment.

2.6.1 Nature Conservation Designations

Within the Republic of Ireland designated sites include Natural Heritage Areas (NHAs), Proposed Natural Heritage Areas (pNHAs), Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSAC) and Special Protection Areas (SPAs).

Ramsar sites are wetlands of international importance designated under the Ramsar Convention (adopted in 1971 and came into force in 1975), providing a framework for the conservation and wise use of wetlands and their resources.

The proposed site is not located within a Ramsar site or a designated site of national (Natural Heritage Area (NHA) / Proposed Natural Heritage Area (pNHA)) or European importance (Special Area of Conservation (SAC) / Special Protection Area (SPA)).

However, there are downstream hydrological connections with some Natura 2000 sites within the River Barrow surface water catchment. Designated sites that lie downstream of the site include:

- River Barrow and River Nore SAC (Site Code: 002162), is hydrologically linked within the proposed site as the Old Leighlin stream downgradient of the site is included within the SAC.

Other protected sites located in the vicinity of the proposed site but are not directly linked via surface water pathways are considered below:

- Whitehall Quarries pNHA (Site Code: 000858) located ~2.2km southwest of the site;
- Coan Bogs NHA (Site Code: 002382) located ~9.1km northwest of the site;
- Cloghistrick Wood pNHA (Site Code: 000806) located ~6km northeast of the site; and,
- Ballymoon Esker pNHA (Site Code: 000797) located ~5.8km southeast of the site.

2.6.2 Bathing Waters

Bathing waters are those designated under the Bathing Water Directive (76/160/EEC) or the later revised Bathing Water Directive (2006/7/EC).

There are no bathing water sites located in the vicinity or downstream of the site.

2.6.3 Nutrient Sensitive Areas

Nutrient Sensitive Areas (NSA) comprise Nitrate Vulnerable Zones and polluted waters designated under the Nitrates Directive (91/676/EEC) and areas designated as sensitive areas under the Urban Wastewater Treatment Directive (UWWTD)(91/271/EEC). Sensitive areas under the UWWTD are water bodies affected by eutrophication associated with elevated nitrate concentrations and act as an indication that action is required to prevent further pollution caused by nutrients.

The Barrow River NSA (IERI_SE_2001_0015) and the Barrow Estuary NSA (IE_EA_100_0300) are mapped downstream of the site. The Barrow River NSA is mapped includes the Barrow_190 SWB downstream of the site. The EPA carried out a review of Nutrient Sensitive Areas (NSAs)

downstream of large urban wastewater discharges in 2020. Once the regulations are in place, and nutrient sensitive areas have been identified, additional nutrient removal must be applied (if not already applied) to wastewater treatment plants discharging to the sensitive area. If this treatment was in place the objective was deemed to have been met.

According to the 3rd Cycle Draft Barrow Catchment Report (2021, EPA) the NSA objectives are being met for the River Barrow and Barrow Estuary.

2.6.4 Shellfish Area

The Shellfish Waters Directive (2006/113/EC) aims to protect or improve shellfish waters in order to support shellfish life and growth.

There are no Shellfish areas located in the vicinity of the proposed site. The Waterford Harbour (Cheekpoint/Arthurstown/Creadon) shellfish area (IE_SE_100_0100) is the nearest protected shellfish area downstream of the site.

2.6.5 Drinking Water

According to the 3rd Cycle Draft Boyne Catchment Report (EPA, 2021) there are 6 no. surface waterbodies in the catchment identified as Drinking Water Protected Areas (DWPAs). None of these DWPAs are located downstream of the site.

Meanwhile, all GWBs within the catchment, including the Bagenalstown Lower and Shanragh GWBs, are listed as DWPAs.

3. WFD SCREENING

As discussed in **Section 2**, there are a total of 7 no. river water bodies that are located in the vicinity or downstream of the site. In addition, there are 5 no. transitional waterbodies and 1 no. coastal waterbody located downstream of the site. Furthermore, the proposed development site is underlain by 2 no. groundwater bodies.

3.1 SURFACE WATER BODIES

As shown in **Figure A** above, there are 12 no. SWBs located in the vicinity or downstream of the site.

With consideration for the construction, operational and decommissioning phases of the proposed development, it is considered that the Old Leighlin Stream_020 SWB will be carried through to the WFD Impact Assessment due to the location of the proposed development within the catchment to this SWB. Additionally, the Barrow_190 SWB will be carried through to the WFD Impact Assessment due to its location directly downstream of the Old Leighlin Stream_020 SWB and its close proximity to the site. However, it is worth noting that the Barrow_190 SWB has a significant upstream catchment area (~2,416km²) and will therefore be significantly less susceptible to impacts arising from the proposed development in comparison to the Old Leighlin Stream_020 SWB. Nevertheless, the Barrow_190 SWB is carried forward for further assessment due to its proximal location to the proposed development site. The proposed development works must not in any way result in a deterioration in the status of these SWBS and/or prevent them from meeting the biological and chemical characteristics for good status in the future.

The Barrow_200 SWB and all downstream river waterbodies have been screened out of further assessment due to the large volumes of water within the River Barrow (associated with the large catchment area (>2,000km²) and their distant location from the site. Furthermore, all transitional and coastal waterbodies downstream of the site have been screened out of further assessment due to the large volumes of water within these SWBs and the saline nature of these waters. The proposed development has no potential to cause a deterioration in status of these SWBs and/or jeopardise the attainment of good surface water status in the future.

3.2 GROUNDWATER BODIES

With respect to groundwater bodies, the Bagenalstown Lower and Shanragh GWBs have been screened in due to their location directly underlying the site. The proposed development works must not in any way result in a deterioration in the status of these GWB and/or prevent them from meeting their required qualitative and quantitative characteristics in order to achieve good status in the future.

3.3 PROTECTED AREAS

The proposed site is hydrologically connected to the River Barrow and River Nore SAC via the Baunleath stream. The site is also hydrogeologically connected to the SAC via the underlying Regionally Important Aquifer which makes a significant contribution to the baseflow of the River Barrow. With consideration for the construction, operational and decommissioning phases of the proposed development, it is considered that the River Barrow and River Nore SAC is carried through into the WFD Impact Assessment.

Whitehall Quarries pNHA is located to the southwest and upgradient of the site. Surface and groundwater at the site follows surface topography and flows to the northeast towards the Madlin River. Furthermore the Moanmore stream acts as a hydrological barrier between this

site and this pNHA. Therefore, no hydrological or hydrogeological impacts will occur on this designated site as a result of the proposed development.

Coan Bogs NHA is located ~9km northwest of the site. This NHA is located in the Nore River catchment and is underlain by the Castlecomer GWB. Therefore, no surface or groundwater connections exist between this NHA and the site. No hydrological or hydrogeological impacts will occur on this designated site as a result of the proposed development.

Cloghistrick Wood pNHA is located ~6km northeast and upstream of the site. Therefore, no hydrological or hydrogeological impacts will occur on this designated site as a result of the proposed development.

Ballymoon Esker pNHA is located ~6km southeast of the site and no surface or groundwater connections exist between this NHA and the site. The River Barrow acts as a hydrological buffer between the site and this pNHA. No hydrological or hydrogeological impacts will occur on this designated site as a result of the proposed development.

The Barrow River NSA downstream of the site has been screened in due to the existing surface water connections between the site and the Barrow River.

The Barrow Estuary NSA has been screened out due to its distant location from the site, the large volumes of water within the surface waterbody and the saline nature of these waters. The proposed development has no potential to cause a deterioration in the status of this NSA.

The Waterford Harbour (Cheekpoint/Arthurstown/Creadon) shellfish area has been screened out due its distant location from the site and the large volumes of water within the estuary at this location.

In terms of DWPA's, the Bagenalstown Lower and Shanragh DWPA's are included for further assessment due to their location underlying the site.

3.4 WFD SCREENING SUMMARY

A summary of WFD Screening discussed above is shown in **Table D**.

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Table D: Screening of WFD Waterbodies Located Downstream and/or Underlying the Site

Type	WFD Classification	Waterbody Name/ID	Inclusion in Assessment	Justification	
Surface Water Body	River	Old Leighlin Stream_020	Yes	The vast majority of the site is located within the Old Leighlin Stream_020 river sub-basin. Therefore, an assessment is required to consider the potential impacts of the Proposed Development on this SWB.	
	River	Barrow_190	Yes	The Barrow_190 SWB is located directly downstream of the Old Leighlin Stream_020 SWB and in close proximity to the site. Therefore, an assessment is required to consider the potential impacts of the Proposed Development on this SWB.	
	River	Barrow_200	No	The Barrow_200 SWB has been screened out due to its large upstream catchment (~2,428km ²), the large volumes of water within this SWB and its distant location from the site. The Proposed Development has no potential to impact the status of this SWB.	
	River	Barrow_210	No	The Barrow_210 SWB has been screened out due to its large upstream catchment (2,575km ²), the large volumes of water within this SWB and its distant location from the site. The Proposed Development has no potential to impact the status of this SWB.	
	River	Barrow_220	No	The Barrow_220 SWB has been screened out due to its large upstream catchment (~2,615km ²), the large volumes of water within this SWB and its distant location from the site. The Proposed Development has no potential to impact the status of this SWB.	
	River	Barrow_230	No	The Barrow_230 SWB has been screened out due to its large upstream catchment (~2,774km ²), the large volumes of water within this SWB and its distant location from the site. The Proposed Development has no potential to impact the status of this SWB.	
	River	Barrow_240	No	The Barrow_240 SWB has been screened out due to its large upstream catchment (~2,829km ²), the large volumes of water within this SWB and its distant location from the site. The Proposed Development has no potential to impact the status of this SWB.	
	Transitional				
	Transitional	Upper Barrow Estuary	No	The Nore Estuary SWB has been screened out due to its distant location from the site, the saline nature of its waters and the large volumes of water within this SWB. The Proposed Development has no potential to impact the status of this SWB.	
	Transitional	Barrow Nore Estuary	No	The Barrow Nore Estuary SWB has been screened out due to its distant location from the site, the saline nature of its waters and the large volumes of water within this SWB. The Proposed Development has no potential to impact the status of this SWB.	
Transitional	New Ross Port	No	The New Ross Port SWB has been screened out due to its distant location from the site, the saline nature of its waters and the large volumes of water within this SWB.		

				The Proposed Development has no potential to impact the status of this SWB.
	Transitional	Lower Suir Estuary	No	The Lower Suir Estuary SWB has been screened out due to its distant location from the site, the saline nature of its waters and the large volumes of water within this SWB. The Proposed Development has no potential to impact the status of this SWB.
	Transitional	Barrow Nore Suir Estuary	No	The Barrow Nore Suir Estuary SWB has been screened out due to its distant location from the site, the saline nature of its waters and the large volumes of water within this SWB. The Proposed Development has no potential to impact the status of this SWB.
	Coastal			
	Coastal	Waterford Harbour	No	The Waterford Harbour coastal waterbody has been screened out due to the saline nature of its waters and the large volumes of water within this SWB. The Proposed Development has no potential to impact the status of this SWB.
Groundwater Body	Groundwater	Bagenalstown Lower	Yes	The site directly overlies the Bagenalstown Lower GWB. An assessment is required to consider potential impacts of the proposed development on this GWB.
	Groundwater	Shanragh	Yes	A small section of the site overlies the Shanragh GWB. An assessment is required to consider potential impacts of the proposed development on this GWB.
Protected Areas	Nature Conservation Designations	River Barrow and River Nore SAC	Yes	The site is hydrologically connected to the River Barrow and River Nore SAC via the Baunleath stream. An assessment is required to consider the potential impacts of the proposed development on this designated site.
		Whitehall Quarries pNHA	No	Whitehall Quarries pNHA has been screened out due to the lack of hydrological and hydrogeological connections between the site and the pNHA. Therefore the proposed development has no potential to impact the pNHA.
		Coan Bogs NHA	No	Coan Bogs NHA has been screened out due to the lack of hydrological and hydrogeological connections between the site and the NHA. Therefore the proposed development has no potential to impact the pNHA.
		Cloghristrick Wood pNHA	No	Cloghristrick Wood pNHA has been screened out due to the lack of hydrological and hydrogeological connections between the site and the pNHA. Therefore the proposed development has no potential to impact the pNHA.
		Ballymoon Esker pNHA	No	Ballymoon Esker pNHA has been screened out due to the lack of hydrological and hydrogeological connections between the site and the pNHA. Therefore the proposed development has no potential to impact the pNHA.
	Nutrient Sensitive Areas	River Barrow NSA	Yes	The Barrow River NSA downstream of the site has been screened in due to the existing surface water connections between the site and the Barrow River.
Barrow Estuary NSA		No	The Barrow Estuary NSA has been screened out due to its distant location from the site, the large volumes of water within the surface waterbody and the saline nature of these waters. The proposed development has no potential to cause a	

				deterioration in the status of this NSA.
	Shellfish Areas	The Waterford Harbour (Cheekpoint / Arthurstown / Creadon)	No	The Waterford Harbour (Cheekpoint/Arthurstown/Creadon) shellfish area has been screened out due to its distal location from the proposed site. The proposed development has no potential to impact this Shellfish Area.
	DWPAs	Bagenalstown Lower GWB	Yes	The site directly overlies the Bagenalstown Lower GWB. An assessment is required to consider potential impacts of the proposed development on this GWB.
		Shanragh GWB	Yes	A small section of the site overlies the Shanragh GWB. An assessment is required to consider potential impacts of the proposed development on this GWB.

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4. WFD COMPLIANCE ASSESSMENT

4.1 PROPOSALS

The proposed development comprises the development of a bedrock quarry. Extraction is proposed over a total area of 2.45ha and will involve the extraction of ~84,000tonnes (30,000m³) of material annually from the site. The proposed quarry void will be extracted to a depth of 2 no. benches of ~10m each from the top of the bedrock, with a final floor level of ~56.5mOD.

Extraction will be preceded by site preparation which will involve stripping soils and subsoils from the proposed extraction area. The volume of overburden to be removed is estimated to be ~120,000m³. The stripped overburden will be utilised in the construction of berms surrounding the extraction area while it is proposed to store the remainder in a soil storage area (~3.1ha) which will have an average fill depth of ~4m.

Site investigations have revealed that the usable dimension limestone at the site is at a depth of ~10m and a layer of unusable stone will require extraction prior to reaching the quality limestone bedrock. The proposed development includes a working area (~1.2ha) to the south of the extraction area which will provide for the crushing and processing of the unusable stone and storage of the dimension stone. The working area will also include parking, a staff canteen, a weighbridge and a stockpile area.

Once the quality dimension stone is exposed in the extraction area, the stone will be cut into blocks using a diamond tipped chain or diamond wire saws. The blocks of dimension stone will be lifted by an excavator and immediately transported offsite for processing elsewhere.

Access to the site will be facilitated by a HGV site entrance from the local road to the east of the site.

The proposed development will also include a wheel wash facility, storage shed (240m³), the installation of surface water attenuation and settlement ponds on the quarry floor and all other associated siteworks including the final quarry restoration.

Drainage controls within the proposed development will include the following:

- A series of land drains are proposed below the soil storage area, and these drain to an open drain on the eastern edge of the soil storage area. Any drainage water and runoff arising from this area will be directed into the quarry void, and managed via the quarry water management system.
- The setdown area will have a hardcore surface. Part of the setdown area also drains into the quarry void. The southern half of the setdown has bounding collection drains, and these will be filled with drainage stone (i.e. french drains), and any excess surface water arising from these French drains will discharge to ground via a proposed soakaway.
- Within the quarry void surface water and groundwater will be collected and pumped from temporary sumps to the main settlement pond. Water within the settlement pond will drain via gravity and flow through a hydrocarbon interceptor and then discharge to a drain at the northeastern corner of the site. The drain flows via a culvert under the L3036 towards the Baunleath Stream which in turn flows into the Madlin River. A discharge licence will be required for this proposed discharge.
- Drainage water from the main site access road will be collected in a roadside filter drain. Excess water from the filter drain will flow through a hydrocarbon interceptor and recharge to groundwater in a soakaway at the southeast of the site.

- Aco drains are proposed across the site entrance. The Aco drain closest to the entrance gate will drain into the filter drain/hydrocarbon interceptor/soakaway arrangement outlined in the previous paragraph. The second Aco drain prevents runoff from the site entrance area onto the public road. This Aco drain direct water to the south into a french drain/linear soakaway located inside the site boundary.

4.2 POTENTIAL EFFECTS

4.2.1 Construction Phase (Unmitigated)

4.2.1.1 Surface Water Quality Effects

Construction phase activities including vegetation removal and soil/subsoil removal will require earthworks. A total of 2.45ha of agricultural and forestry land will be stripped of all vegetation, soils and subsoils.

Earthworks and the stripping of soil/subsoil and the stockpiling of such material which will be a potential source of sediment laden water. All excess surface water within the site will be directed to temporary settlement pond within the quarry void. The retention time within the settlement pond will be at least 24hrs and this will allow enough time to remove fine silts. After settlement, water will be directed to a roadside drain which in turn discharges into the Baunleath Stream, the Old Leighlin Stream and the River Barrow and their associated aquatic ecosystems.

The main risk to surface water quality will be from accidental spill and leaks of oils and fuels. Removal of vegetation and soil/subsoil stripping will be completed using machinery. Such machinery are powered by diesel engines and operate using hydraulics. Unless carefully managed such plant and machinery have the potential to leak hydraulic oils or cause fuel leaks.

As part of the proposed development it is proposed to intermittently discharge surface water to a roadside drain located immediately to the east of the site. This drain discharges into the Old Leighlin Stream_020 SWB. Accidental release of hydrocarbons or oils into the local surface water environment will have a negative impact on downstream surface water quality and associated aquatic habitats and ecosystems.

A summary of potential status change to SWBs arising from surface water quality impacts from earthworks during the construction phase of the proposed development in the unmitigated scenario are outlined in **Table E**. Due to the increased catchment area and the associated increase in flow volumes the Barrow_190 SWB is less susceptible to water quality impacts than the Old Leighlin Stream_020 SWB.

Table E: Surface Water Quality Impacts during Construction Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Old Leighlin Stream_020	IE_SE_14O020700	Moderate	Poor
Barrow_190	IE_SE_14B012820	Moderate	Moderate (potential deterioration)

4.2.1.2 Groundwater Quality Effects

The removal of soil and subsoil from the proposed extraction area will have a direct impact on the groundwater vulnerability rating at the site. Groundwater vulnerability will be increased to Extreme (X) across the proposed extraction area with bedrock exposed at the surface due to the removal of soils and subsoils.

Accidental spillage during refuelling of construction plant with petroleum hydrocarbons is a major pollution risk to groundwater. The accumulation of small spills of fuels and lubricants during routine plant use can also be a pollution risk. Chemicals such as cement-based compounds also pose a threat to the groundwater environment. Runoff from concrete works can impact on groundwater quality. These sources of contamination have the potential to impact on groundwater quality in the underlying groundwater bodies in the area of the proposed development.

A summary of potential status change to GWBs arising from potential groundwater quality impacts during the construction phase of the proposed development in the unmitigated scenario are outlined in **Table F**.

Table F: Groundwater Quality Impacts during Construction Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Status Change	Potential Status Change
Bagenalstown Lower	IE_SE_G_157	Good	Moderate	
Shanragh	IE_SE_G_124	Good	Moderate	

4.2.1.3 Potential Effects on Protected Areas

The surface water connections from the site to the Old Leighlin stream and the Barrow River could transfer poor quality surface water that may affect the conservation objectives of the River Barrow and River Nore SAC. In addition poor quality surface water could be transferred to the River Barrow NSA.

Construction phase activities also pose a risk to groundwater and have the potential to impact the Bagenalstown Lower DWPA and the Shanragh DWPA.

4.2.2 Operational Phase (Unmitigated)

4.2.2.1 Increased Surface Water Discharge Volumes

The proposed development has the potential to increase volumes of water being discharged from the site to the Baunleath stream, which in turn discharges into the Madlin River (Old Leighlin Stream_020 SWB). This increase in surface water discharge will be as a consequence of the increased volumes of surface and groundwater being generated within the proposed quarry void.

Current flow volumes in Madlin River downstream of the site are estimated to exceed 0.031m³/sec 95% of the time.

As the proposed extraction extends below the groundwater table, increasing volumes of water will be required to be pumped from the void in order to allow quarrying operations to continue.

However, comparisons can be made with the existing Old Leighlin Quarry to the north of the site. Extraction at Old Leighlin Quarry is currently permitted to a depth of 21mOD and is operating well below the groundwater table. However, little groundwater inflow has been noted in the quarry void due to the absence of any solutionally enlarged joints or cavities (i.e. the absence of any karst features). Furthermore groundwater monitoring at Old Leighlin has revealed that the quarrying operations are having little impact on the elevation of the surrounding groundwater table. Therefore, the water being pumped from the quarry at Old Leighlin is predominantly comprised of rainfall which falls within the void.

Similarly, site investigations at the site comprising a total of 5 no. boreholes have not encountered any karst features. Therefore, a similar hydrogeological regime will exist at this site, whereby little groundwater inflow will occur into the proposed extraction area. As a consequence the surface water being discharged to the Baunleath stream will consist largely of rainfall falling within the site. Therefore, no significant increase in flow volumes in the Old Leighlin Stream_020 SWB will result from the proposed development.

Any unmitigated and uncontrolled increases in discharge has the potential to adversely impact local hydromorphology, water quality and increase flood risk downstream of the site. The pre-mitigation impact on surface water quantity is considered to be a negative, moderate, direct, medium-term, likely impact.

A summary of potential status change to SWBs arising from increased runoff during the operation stage of the proposed development in the unmitigated scenario are outlined in **Table G**.

Table G: Potential Impact on Surface Water Flows during Operational Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Old Leighlin Stream_020	IE_SE_14O020700	Moderate	Poor
Barrow_190	IE_SE_14B012820	Moderate	Moderate

4.2.2.2 Surface Water Quality Impacts from Operational Stage

During the operational phase runoff from the proposed extraction area will be directed to settlement ponds on the quarry floor. En-route to the ponds, surface water will increase in turbidity due to the collection of sediment particles. Surface waters may also be contaminated with any leaked hydrocarbons on the quarry floor. This will reduce the quality of surface water runoff from the site and will have an adverse impact on local downstream receiving SWBs (Old Leighlin Stream_020 and Barrow_190) and their associated aquatic ecosystems.

A summary of potential status change to SWBs arising from surface water quality impacts during the operation stage of the proposed development in the unmitigated scenario are outlined in **Table H**.

Table H: Surface Water Quality Impacts during Operational Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Old Leighlin Stream_020	IE_SE_14O020700	Moderate	Poor
Barrow_190	IE_SE_14B012820	Moderate	Moderate

4.2.2.3 Groundwater Quantity Effects

Quarrying activities below the water table have the potential to impact on local groundwater levels in the vicinity of the proposed extraction area. Once the quarrying operations extend below the groundwater table, groundwater levels in the surrounding area will be lowered as the groundwater flows towards the newly created void.

However, site investigations have revealed an absence of karst features, conduits or preferential flowpaths in the bedrock aquifer beneath the site. Therefore, groundwater inflow

into the extraction area will be minimal and as a result the proposed development will not have a significant impact on local groundwater levels.

A summary of potential status change to GWBs arising from dewatering activities during the operation stage of the proposed development in the unmitigated scenario are outlined in **Table I**.

Table I: Groundwater Quantity Effects During Operational Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Status Change	Potential
Bagenalstown Lower	IE_SE_G_157	Good	Good	
Shanragh	IE_SE_G_124	Good	Good	

4.2.2.4 Groundwater Quality Effects

The removal of the protective layer of soil and subsoil will increase the vulnerability of the underlying bedrock to contamination. During the operational stage of the proposed development groundwater vulnerability in the extraction areas will be 'Extreme' with exposed bedrock at the surface. Groundwater contamination can occur due to hydrocarbon spills or leaks on the quarry floor or through the use of explosives during blasting operations.

Once quarrying extends below the groundwater table, the risk of contamination is reduced, as groundwater surrounding the quarry drains into the excavation footprint, acting as a hydraulic trap.

The greatest risk to groundwater quality occurs during excavation works above the groundwater table when groundwater contaminated from any accidental leaks or spills has the potential to migrate off-site.

Table J: Groundwater Quantity Effects During Operational Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Status Change	Potential
Bagenalstown Lower	IE_SE_G_157	Good	Moderate	
Shanragh	IE_SE_G_124	Good	Moderate	

4.2.2.5 Protected Areas

During the operational phase, the surface water connections from the site to the Old Leighlin stream and the Barrow River could transfer poor quality surface water that may impact the conservation objectives of the River Barrow and River Nore SAC and the River Barrow NSA.

Furthermore potential groundwater quality and groundwater quantity effects have the potential to impact the Bagenalstown Lower GWB DWPA and the Shanragh GWB DWPA.

4.3 MITIGATION MEASURES

In order to mitigate against the potential negative effects on surface and groundwater quality, quantity and flow patterns, mitigation measures will be implemented during the construction and operational phases of the proposed development. These are outlined below.

4.3.1 Construction Phase

4.3.1.1 Mitigation Measures to Protect Against the Release of Hydrocarbons

The following mitigation is proposed:

- All plant and machinery will be serviced before being mobilised to site;
- Refuelling will be completed in a controlled manner using drip trays (bundled container trays) at all times;
- Only designated trained operators will be authorised to refuel plant on site; and,
- Procedures and contingency plans will be set up to deal with emergency accidents or spills.

4.3.1.2 Mitigation Measures to Protect Against the Entrainment of Suspended Solids in Surface Waters

The proposed construction phase is short term.

Prior to the commencement of earthworks, silt fencing will be placed down-gradient of the construction areas where surface water may drain towards the Baunleath stream and/or other small drainage ditches present within or adjacent the site. These silt fences will be embedded into the local soils to ensure all site water is captured and filtered.

Daily monitoring and inspections of any constructed site drainage channels during the construction phase will be completed. Earthworks for the construction phase will take place during periods of low rainfall to reduce run-off and potential siltation of watercourses.

Excavated soil will be utilised in the construction of berms surrounding the proposed extraction area with any excess soil stored in the proposed soil storage area. These spoil areas will be vegetated as soon as practicable and silt fences placed downstream of all soil storage area until they have been stabilised.

4.3.2 Operational Phase

4.3.2.1 Increased Surface Water Discharge Volumes

The proposed water management system will direct surface water and any minor groundwater inflows in the site towards suitably designed settlement lagoons on the quarry floor. These lagoons will serve to attenuate discharge from the site and will ensure that discharge rates to the Old Leighlin Stream_020 SWB do not exceed the existing greenfield runoff rates or the maximum permitted daily discharge volume as per the discharge licence. The discharge rate from the proposed quarry is estimated to be ~76m³/day.

The proposed infrastructure will attenuate storm water so that any increase in discharge volumes during storm events are gradual and controlled, preventing an increase in the flood risk downstream of the site.

4.3.2.2 Mitigation Measures to Protect Surface Water Quality

The proposed development will utilise a water management system designed to prevent contamination of local surface waters with elevation concentrations of suspended solids or hydrocarbons. The water management system involves Aco drains, filter drains, a quarry floor sump, a primary settlement pond and hydrocarbon interceptors to ensure the protection of surface water quality.

All surface water within the site will be directed to quarry void where water will gather in the quarry floor sump. From here surface water will be pumped to the primary settlement pond which will allow for the settlement of suspended solids from the water column. Water from the

settlement pond will drain via gravity to a drain at the northeastern corner of the site which discharges to the Baunleath stream. All surface water will flow through a hydrocarbon interceptor prior to discharge.

Water from the wheel wash will be recycled and will not enter the settlement ponds or be discharged to the Old Leighlin Stream_020 SWB.

In addition the following measures will be implemented to ensure that surface waters are not contaminated with hydrocarbons:

- Hydrocarbons at the site will continue to be stored in a suitably designed bunded fuel tank with all chemicals and petroleum-based products stored in the workshop on spill palates.
- Mechanical repairs will only take place in the quarry void in case of emergencies with an emergency spill kit kept on-site.
- All water from the site will be passed through a hydrocarbon interceptor prior to discharge to the receiving watercourse.

4.3.2.3 Mitigation Measures to Protect Groundwater Quantity

The proposed development will only extend to 56.5mOD, therefore limiting the extent of local groundwater drawdown.

Groundwater monitoring has revealed that the quarrying activities immediately to the north of the site have not resulted in any impact on local groundwater wells (SLR, 2017). Therefore, given the absence of karst features and flow conduits in the bedrock aquifer beneath the site, groundwater inflow into the proposed quarry will be minimal. Hence, the proposed development will not have a significant impact on local groundwater levels.

No specific mitigation measures are required however groundwater monitoring in surrounding wells will be completed as part of the proposed monitoring.

4.3.2.4 Mitigation Measures to Protect Groundwater Quality

All quarrying activities at the site will operate within a site-specific protocol for extraction which will follow the current international best practice.

Mitigation measures to protect groundwater quality will be implemented throughout the operational phase. The primary risks to groundwater quality result from hydrocarbon spills and leaks. The following mitigation measures will be implemented at the site.

- No refuelling or maintenance of construction/operation vehicles or plant will take place within the extraction area;
- Preventative maintenance and relevant maintenance logs will be kept for all on-site plant and equipment;
- Refuelling will only occur at the designated fuel pad area, which will include an oil/fuel interceptor, from a mobile double skinned fuel bowser or equivalent;
- A spill kit will be kept beside the designated fuel pad area. The spill kit will contain fuel absorbent material, pads/mats and oil boom for use in the event of any accidental spill;
- Drip trays and fuel absorbent mats will be used during all refuelling operations;
- Onsite refuelling will be carried out by trained and competent personnel only;
- All plant and machinery will be serviced before been mobilized to site and regular leak inspections and fitness for purpose will be completed during the backfilling works;
- No substantial plant maintenance will be completed on site, any broken down plant will be removed from site to be fixed; and,
- The site will operate under a dedicated Environmental Management System.

4.3.1 Restoration Phase

The restoration plan includes allowing the quarry void to naturally fill with water with some of the void backfilled with spoil from the surrounding berms. The void will be surrounded by a secure post and wire fence. The proposed soil storage areas will be allowed to revert to scrubland. Meanwhile, the proposed set down area and shed will be cleared and restored to scrubland. The remainder of the site will be planted with trees.

The potential impacts associated with restoration phase of the proposed development will be similar to those associated with the construction phase but of a reduced magnitude, due to the reduced scale of the proposed works in comparison to construction phase works.

With the implementation of the mitigation measures no negative impacts on the hydrological and hydrogeological environments are expected during the restoration or post restoration phase. The restoration will have a positive effect in terms of returning the site back to scrubland.

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4.3.2 Potential Effects with the Implementation of Mitigation

In all instances, the mitigation measures described in **Section 4.3** are sufficient to meet the WFD Objectives. The assessment of WFD elements for the WFD waterbodies is summarised in **Table K** below.

Table K: Summary of WFD Status for Unmitigated and Mitigated Scenarios

WFD Waterbody	WFD Code	WFD Status (2016-2021)	Assessed Potential Status Change- Unmitigated	Assessed Potential Status Change
Old Leighlin Stream_020 SWB	IE_SE_14O020700	Moderate	Poor	Moderate
Barrow_190 SWB	IE_SE_14B012820	Moderate	Moderate	Moderate
Bagenalstown Lower GWB	IE_SE_G_157	Good	Moderate	Good
Shanragh GWB	IE_SE_G_124	Good	Moderate	Good

5. WFD ASSESSMENT CONCLUSION

WFD status for SWBs (Surface Water Bodies) and GWBs (Groundwater Bodies) hydraulically linked to the site are defined in **Section 2** above.

The proposed development comprises the development of a bedrock quarry in the townland of Bannagagole, Old Leighlin, Co. Carlow. The proposed quarry void will extend to a final floor level of 56.5mOD which is below the existing groundwater table. However, based on site investigations groundwater inflows into the void will be minimal and the proposed development will not have a significant impact on groundwater levels (groundwater quantity).

Mitigation for the protection of surface water quality during the construction, operation and decommissioning phases of the development will ensure the qualitative and quantitative status of the receiving waters will not be altered by the proposed development.

There is also mitigation proposed to protect groundwater quality within the proposed development during the construction, operational and decommissioning phases of the development. These mitigation measures will ensure the qualitative status of the underlying GWBs will not be altered by the proposed development.

There will be no change in GWB or SWB status in the underlying GWB or downstream SWBs resulting from the proposed development. There will be no change in quantitative (volume) or qualitative (chemical) status, and the underlying GWB and downstream SWBs are protected from any potential deterioration.

Furthermore, with the implementation of the proposed mitigation measures, there will be no potential effects on any downstream protected areas as a result of the proposed development.

As such, the Proposed Development:

- will not cause a deterioration in the status of all surface and groundwater bodies assessed;
- will not jeopardise the objectives to achieve 'Good' surface water/groundwater status;
- does not jeopardise the attainment of 'Good' surface water/groundwater chemical status;
- does not jeopardise the attainment of 'Good' surface water/groundwater quantity status;
- does not permanently exclude or compromise the achievement of the objectives of the WFD in other waterbodies within the same river basin district;
- is compliant with the requirements of the Water Framework Directive (2000/60/EC); and,
- is consistent with other Community Environmental Legislation including the EIA Directive (2014/52/EU), the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC) (Note that a full list of legislation complied with in relation to hydrology and hydrogeology is included in Section 8.1.3 of EIAR Chapter 8).

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