Ummera Gravel Pit
Ummera
Macroom
County Cork

Water Framework Directive Compliance Assessment Report

for

The Further Development of Ummera Gravel Pit

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1. Introduction

1.1 Background

Drimoleague Concrete Works Ltd (DCWL) operate the Ummera Gravel Pit near Macroom County Cork. It, or its affiliated company, has been working the Ummera Gravel Pit since the 1970's. Gravel extraction has been ongoing at the Ummera site since the 1940's, which has been confirmed by locals living near the site.

Murnane & O'Shea Ltd (M&OS) (an affiliate of DCWL) became involved in the site in or around 1978. M&OS leased an area of land, including the existing gravel pit, and continued extraction activities at the site. In 1978, M&OS applied and secured planning permission for '*Gravel Plant in Existing Pit*' (i.e. a washing plant) – planning number 1365/78 refers. The washing plant and settlement lagoons were installed at the pit in late 1978 / early 1979. The original settlement lagoon is located to the west of the gravel pit and on the opposite side of the road (local road L-3423-20) – between the public road and the Clashavoon Stream (EPA name – Bealick Stream). At the request of the South-Western Regional Fisheries Board (now Inland Fisheries Ireland – IFI), settlement lagoons were constructed within the gravel pit in the 1980's. There were concerns that the original lagoon was too close to the stream. While the original lagoon continued to be used, it acted only as a polishing lagoon. It is now overgrown, no longer used and is not cleaned out.

In 1995/96, the washing plant was relocated within the gravel pit – from the northwest corner to its current location, along with enlargement of the settlement lagoons. The entrance into the gravel pit was also relocated from the northwest corner to its current location around that time.

In 2004, DCWL applied to Cork County Council to have the gravel pit registered under Section 261 of the Planning & Development Act 2000 – registration number QR01 refers. The Council initially indicated its intention to register the pit using S261(7) which is a provision restricted to pre-1963 sites. However, on 07 September 2006, Cork County Council issued a notice under S261(6)(a)(ii) [rather than S261(6)(a)(i)] of its decision to modify and add conditions (64 No.) imposed under planning permission Reg No 76/375. Permission 76/375 was for opening a gravel pit, granted to a third party but was not acted upon and lapsed in April 1981.

On 23 August 2012, Cork County Council issued its decision for Ummera under Section 261A(3) on foot of a determination under Section 261A(2) that *'Quarry development was undertaken post 1st February 1990 that would, having regard to the Environmental Impact Assessment Directive, have required an environmental impact assessment but that such an assessment was not carried out or made'.* On 24 February 2014 following its review, the Board decided to confirm the Council's determination requiring DCWL to apply for substitute consent including a remedial EIS. DWCL applied for a judicial review of that decision. This is still a live case.

DCWL made the substitute consent application in August 2020 followed by an application for further development of the gravel pit in September 2020. In October 2025, An Coimisiún Pleanála requested that a water framework directive compliance assessment be prepared and submitted for the Board's consideration. Item 2 of the Board's correspondence states:

> '*In order to determine that the subject development will not result in a risk of deterioration on any water body (rivers, lakes, groundwaters, transitional and coastal) either qualitatively or quantitatively or on a temporary or permanent basis or otherwise jeopardise any water body in reaching its WFD objectives, you are required to submit a Water Status Impact Assessment which adequately addresses this matter*.'

1.2 Scope and Purpose

The purpose of this report is to assess compliance with the Water Framework Directive (WFD) for the further development of the gravel pit. The EU Water Framework Directive (2000/60/EC), as amended by Directives 2008/105/EC, 2013/39/EU and 2014/101/EU, was signed into law in October 2000. It requires EU member States to achieve water quality of at least *Good Status* in rivers, lakes, groundwater, estuaries and coastal waters by 2027 at the latest. The Directive was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003).

As noted, the Directive requires that all member states protect and improve water quality in all waters, with the aim of achieving good status by 2027. The Board requires an assessment of the impacts of the further development of the Ummera Gravel Pit on water quality which could jeopardised any water body in reaching its WFD objective.

The WFD is implemented through the River Basin Management Plans (RBMP) in 6-year cycles. WFD Cycle 1 covered the period 2010 – 2015; WFD Cycle 2 covered the period 2016 – 2021; and WFD Cycle 3 covers the period 2022 – 2027. Ireland's 31 local authorities coordinate water quality management across a 5-region structure.

The River Basin Management Plan objectives include:

- Ensure full compliance with relevant EU legislation.
- Prevent deterioration.
- Meet the objectives for designated protected areas.
- Protect high-status waters.
- Implement targeted actions and pilot schemes in focused sub-catchments aimed at:
    - targeting water bodies close to meeting their objective.
    - addressing more complex issues that will build knowledge for subsequent cycles.

2.0 WFD Waterbodies & Designated Sites

2.1 Surface Water Bodies

The site is within hydrometric area 19 (Lee, Cork Harbour and Youghal Bay). Hydrometric area No 19 includes the surface catchment drained by the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay and between Knockaverry and Templebreedy, extending to an area of 2,153km^2. The Ummera Gravel Pit is in the:

- Lee, Cork Harbour and Youghal Bay WFD catchment/Hydrometric Area 19 – refer to Figure 1.
- Sullane_SC_020 WFD sub-catchment – refer to Figure 2.
- Laney_040 WFD River sub-basin – refer to Figure 3.

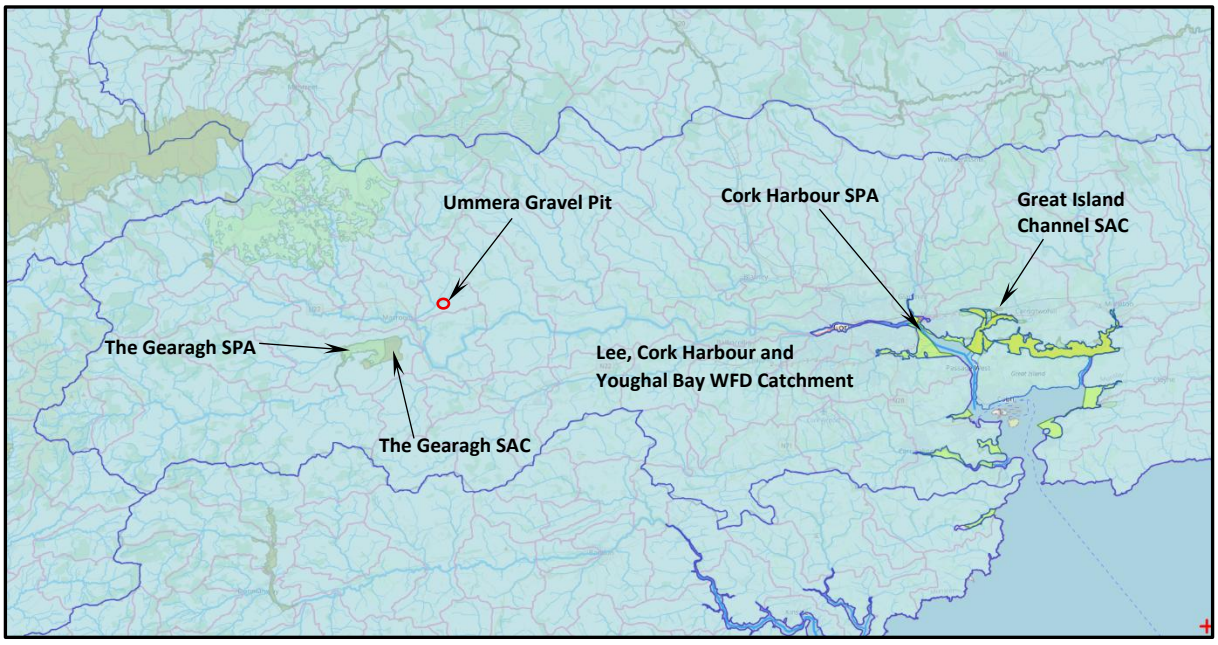


Figure 1: WFD Catchment Area - Lee, Cork Harbour and Youghal Bay

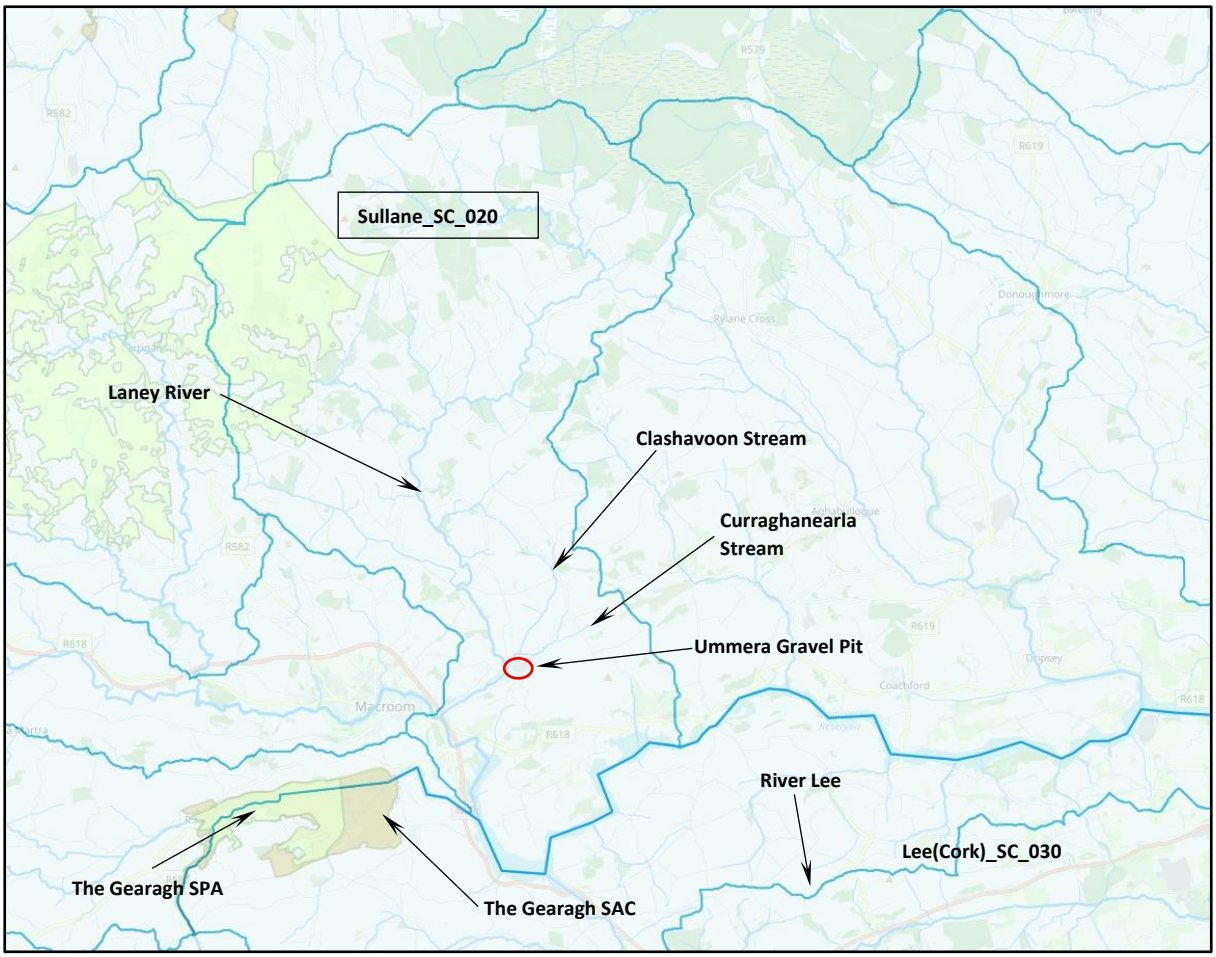


Figure 2: WFD Sub-Catchment Areas – Sullane_SC_020

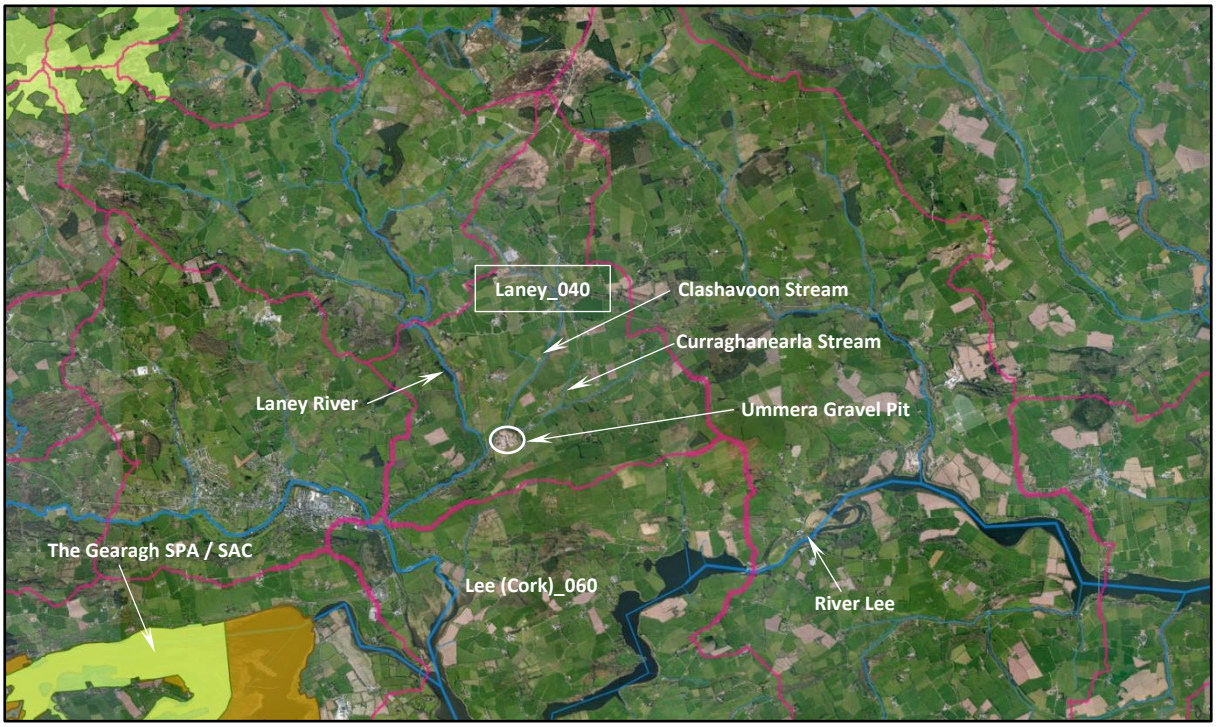


Figure 3: WFD Sub-Basin Area - Laney_040

The Curraghanearla Stream is a second order stream that rises in the townland of Coolkisha, to the northeast of the gravel pit. It flows generally in a south-westerly direction, passing nearby the northern site boundary, but separately from it by the public road. It is referred to as the Clashavoon Stream in this report to align with the nomenclature in the EIAR). It joins the Clashavoon (EPA name - Bealick) Stream near the northwest corner of the gravel pit. The Clashavoon Stream is a third order stream that rises in the townland of Kilberrihert, to the north of the gravel pit. The Clashavoon Stream joins the Laney River just southwest of the gravel pit. The Laney River flows to the southwest, parallel to the public road, and joins the Sullane River near Bealick Mills, approximately 2km southwest of the site. The Sullane River flows generally in a southerly direction joining the River Lee's Carrigadrohid Reservoir at Mashanaglass. Local drainage is shown on Figure 4.

The Curraghanearla Stream, Clashavoon Stream and Laney River are fast flowing depositing lowland watercourses near the gravel pit. All have gravel / cobble beds. Photographs of the watercourses at SW1 to SW3 are shown on Plates 1 to 3.



Figure 4: Local Drainage Network



Plate 1: Photograph of Surface Water Sampling Location SW1 - Clashavoon Stream



Plate 2: Photograph of Surface Water Sampling Location SW2 - Clashavoon Stream



Plate 3: Photograph of Surface Water Sampling Location SW3 – Laney River

2.1.1 Surface Water Quality

The EPA monitors water quality in the rivers and streams across the country – refer to https://gis.epa.ie/EPAMaps/. There are no EPA / Council monitoring locations on either the Curraghanearla or Clashavoon streams. There are several monitoring stations on the Laney River upstream of its confluence with the Clashavoon Stream. There is one monitoring location downstream of the gravel pit on the Laney River and one on the Sullane River.

The river / lake waterbody WFD statuses for the rivers and reservoir at and downstream of the gravel pit are summarised in Table 1.

Table 1: River Waterbody Statuses

Waterbody WFD Period	Curraghanearla Stream	Clashavoon Stream	Laney River	Sullane River	River Lee
WFD Status 2019-2024	High	High	High	High	Good
WFD Status 2016-2021	High	High	High	High	Moderate
WFD Status 2013-2018	Good	Good	Good	Good	Moderate
WFD Status 2010-2015	High	High	High	Unassigned	Poor
WFD Status 2010-2012	High	High	High	Unassigned	Moderate
WFD Status 2007-2009	High	High	High	Unassigned	Good

The WFD River / Lake waterbody statues are shown on Figures 5 to 7 for the WFD cycles 2013-2018, 2016-2021 and 2019-2024, respectively.

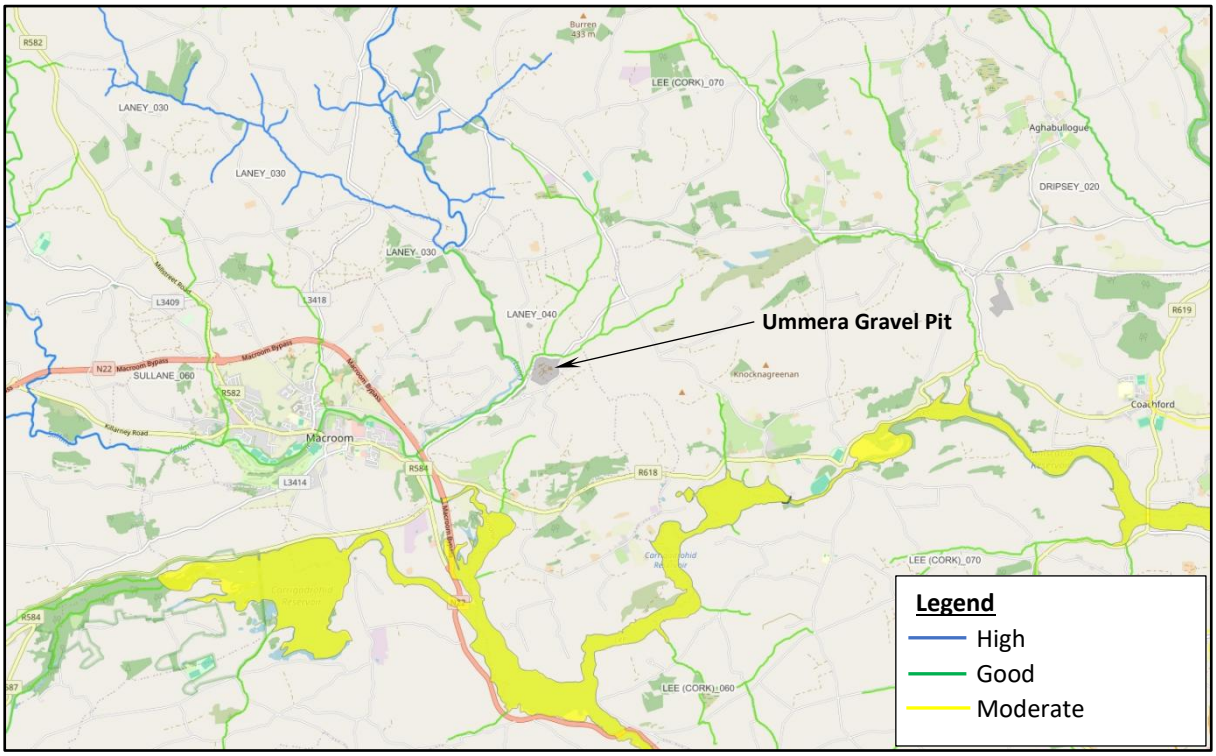


Figure 5: River & Lake WFD Waterbody Status 2013-2018

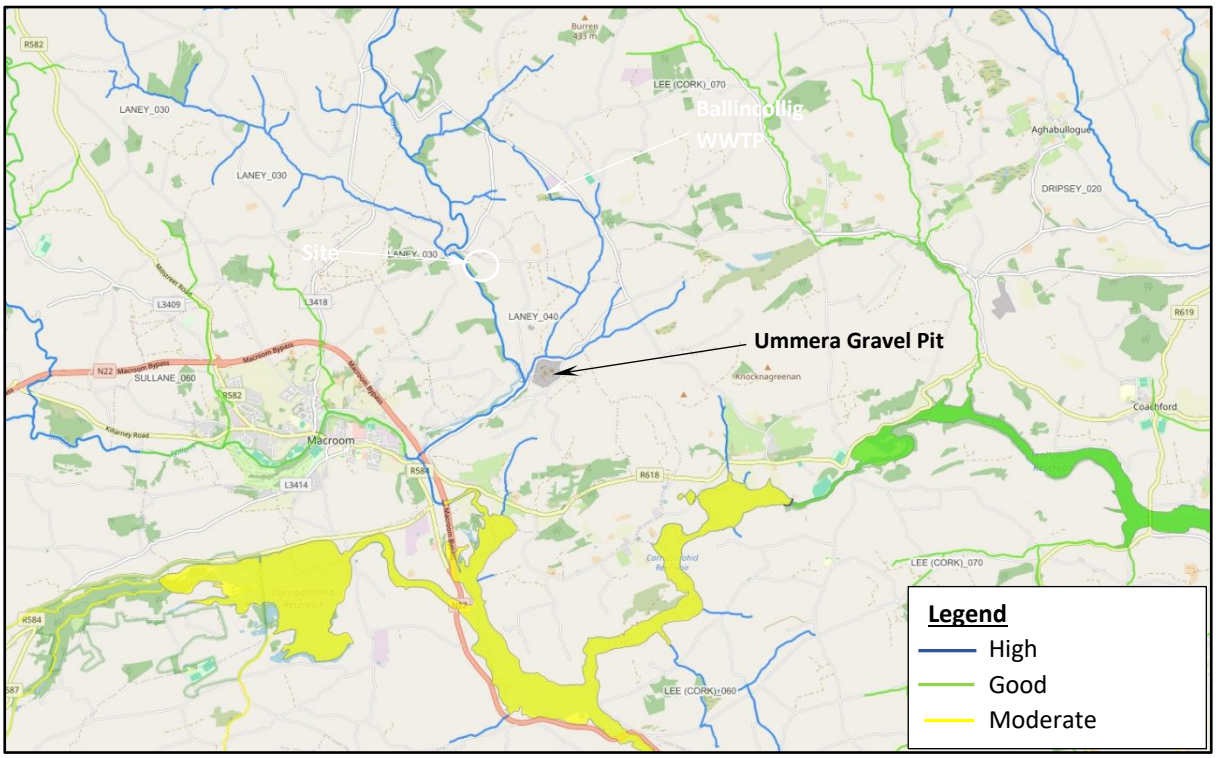


Figure 6: River & Lake WFD Waterbody Status 2016-2021

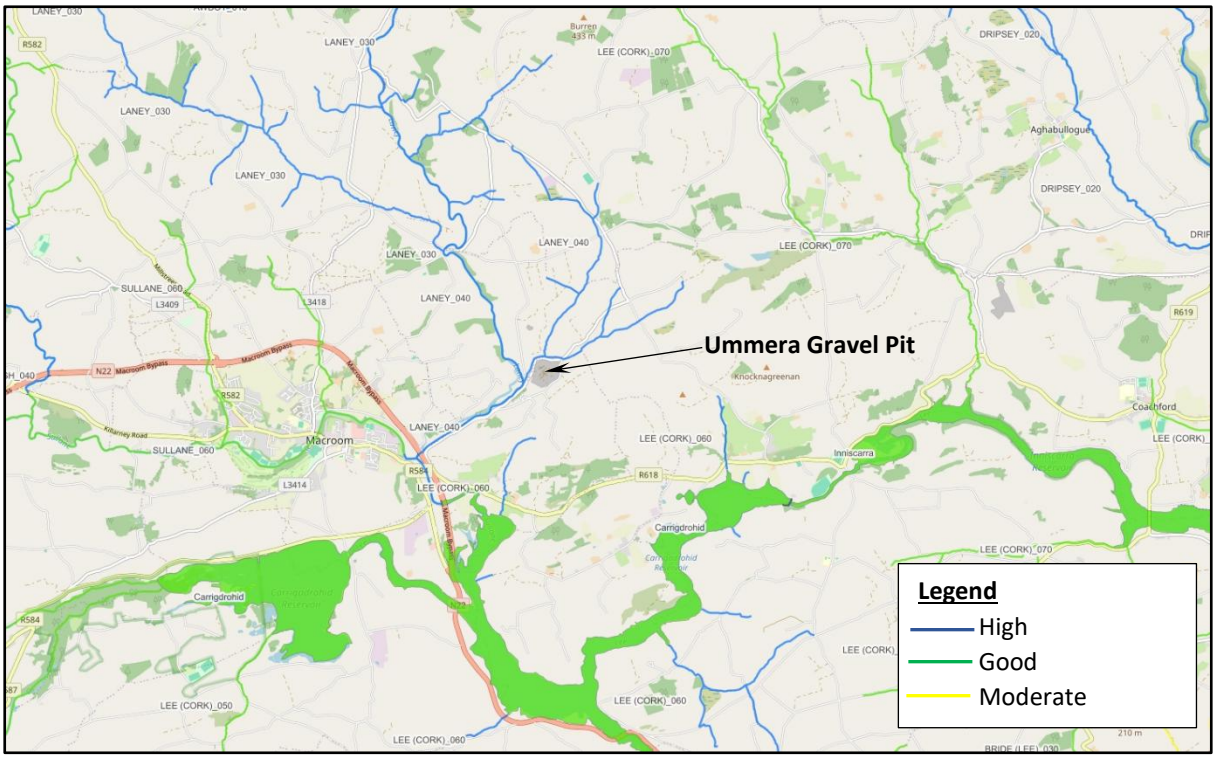


Figure 7: River & Lake WFD Waterbody Status 2019-2024

The risk assignment for the Laney River is currently under review. The Sullane River is assigned 'Not at Risk', while the Carrigadrohid Reservoir is assigned 'At Risk'. Figure 8 shows the current WFD river and lake waterbody risk assignment.

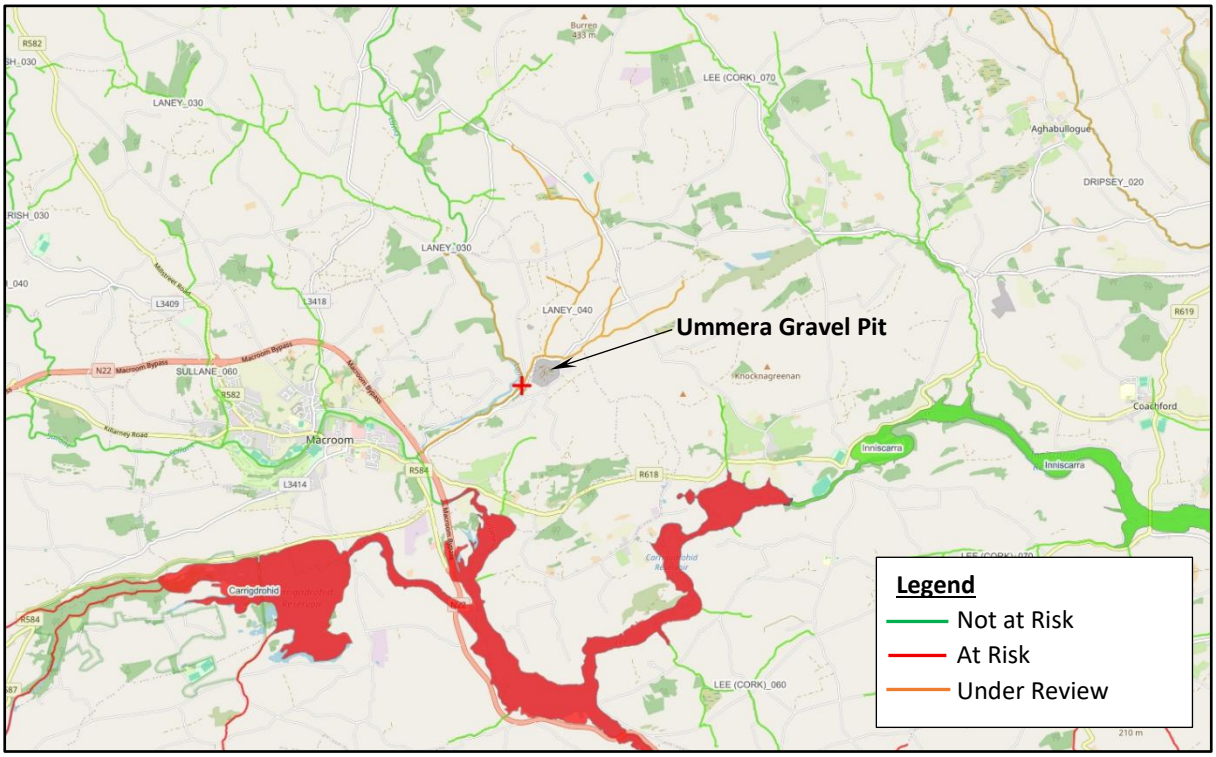


Figure 8: WFD River & Lake Waterbody Risk Assignment

2.1.2 Surface Water Quality Monitoring

Surface water monitoring is carried out at three locations in the Clashavoon Stream and Laney River. Sample locations are shown on Figure 4. The parameter of interest for the gravel pit is suspended solids. The results indicate that the three sampling locations, TSS was typically <10mg/l. Results for June 2026 show slightly elevated TTS concentrations reflecting the heavy rainfall in the preceding 24 hours – 27.4mm in Cork Airport, and the high river stage. TSS results for the last four years are summarised in Table 2.

Table 2: Total Suspended Solids Results

	Sampling Location		
Date	**SW1**	**SW2**	**SW3**
26/01/2022	<2	<2	2.45
11/07/2022	<2	<2	<2
30/11/2022	2.78	<2	<2
30/01/2023	<2	<2	<2
10/04/2023	<2	<2	<2
04/09/2023	2.4	1.6	1.6
04/12/2023	2.7	1.8	1.4
16/05/2024	3.0	2.6	10.6
05/09/2024	2.0	1.8	1.0
30/09/2024	2.6	2.4	4.2
10/12/2024	1.8	1.8	1.6
30/04/2025	1.2	1.0	1.2
27/08/2025	2.2	2.2	2.0
19/02/2026	1.4	1.6	1.8
19/06/2026	12.4	12.4	18.0

2.1.3 Aquatic Ecology Assessment

Atkins undertook an aquatic ecology assessment on the Clashavoon Stream in 2019. As part of this assessment, it carried out kick sampling at two locations – Site 1 and Site 2. Site 1 is located 30m upstream of SW2, while Site 2 is located near SW1, an upstream location. The Curraghanearla and in turn the Clashavoon Stream are considered to be Depositing/Lowland River (FW2) habitat. The Clashavoon Stream runs through a section of woodland north of the quarry site before joining the Laney River. Site 1 was characterised by a riffle - glide sequence, comprising 80% fast glide and 20% riffle. Site 2 was characterised by a riffle - glide sequence, comprising 50% fast glide and 50% riffle

Based on the findings from the kick samples in 2019, both locations were assigned a small stream risk (SSR) score. The sampling sites upstream (Site 2) and downstream (Site 1) are very similar in channel characteristics and macroinvertebrate community composition. Both sites are categorised as 'At Risk', demonstrating that the river is experiencing pressures upstream of the gravel pit. The main difference between the two sites is the amount of detritus material present in the samples and siltation within the channel. Both factors were greater at the downstream sampling site, although the increase of these factors was not expressed in the macroinvertebrate community of Site 1.

In August 2026, JWK Environmental Ltd repeated the kick sampling at two locations – Site 1 and Site 2. Similar results were recorded, with SSRS of 5 and 4 at the upstream and downstream locations, respectively. Again, both sites are categorised as 'at risk', demonstrating that the river is experiencing pressures upstream of the gravel pit. It is noted however, that in contrast to the 2019 sampling, the amount of detritus and siltation was similar at both locations.

2.1.4 Review of Macroom By-Pass EIS

Electrofishing surveys carried out by the ESB in 2001 recorded salmon in the main channel of the Sullane and Laney rivers. It notes that the biological water quality data for both rivers indicate unpolluted, pristine or close to pristine conditions. Freshwater pearl mussel (FPM) has also been recorded in both rivers. It noted that surveys indicate high levels of nutrient enrichment which has led to a decline of FPM. During the September 2007 surveys, the smallest FPM population (40 per km) was found in the Laney River, all upstream of the Bealick Mill Bridge – total population likely to be less than 150. Both the Sullane and Laney rivers have exceptionally high-quality salmonid habitat.

2.2 Groundwater Bodies

The gravel pit is underlain by the Ballytrasna Formation and the Caha Mountain Formation. They are Devonian in age and form part of the Central Cork Succession. The Ballytrasna Formation is characterised by dusky-red to purple coloured mudstone and siltstone with subordinate fine-grained pale-red sandstones. The north-western part of the site is underlain by the Caha Mountain Formation. It consists of purple siltstones and fine-grained parallel and cross-laminated sandstones. The Caha Mountain Formation underlying the north-western part of the site is classified by the GSI as PL – Poor Aquifer, bedrock which is generally unproductive except for local zones. The Ballytrasna Formation is classified by the GSI as LI - Locally Important Aquifer - bedrock which is moderately productive only in local zones. The gravels underlying the site are not classified as an aquifer.

These formations form part of the Ballinhassig West groundwater body. The ground waterbody WFD status 2013-2018, 2016-2021 and 2019-2024 is Good. It is categorised as 'Not at Risk'.

2.3 Designated Sites

The designated sites downstream of the Ummera Gravel Pit are:

- Lee Valley pNHA – site code 000094.
- Great Island Channel SAC & pNHA – site code 001058.
- Cork Harbour SPA - site code 004030.
- Douglas River Estuary pNHA - site code 001046.
- Dunkettle Shore pNHA - site code 001082.
- Rockfarm Quarry, Little Island pNHA - site code 001074.
- Monkstown Creek pNHA – site code 001979.
- Lough Beg (Cork) pNHA – site code 001066.
- Whitegate Bay pNHA – site code 001084.

The Gearagh SAC, SPA and pNHA are not located downstream of the gravel pit, so there is no hydrological connectivity.

Designated sites near the gravel pit are shown on Figure 9.

JKW Environmental Ltd prepared the Appropriate Assessment Screening Report for the further development of the gravel pit. The findings of the assessment are that '*on the basis of objective scientific information, that the development is not likely to give rise to significant effects on any Natura 2000 site, either individually or in combination with other plans or projects'*. It is also noted that Cork County Council's Section 261A assessment in 2012 concluded that Appropriate Assessment was not required as the gravel pit was not located within or adjacent to any European site, and further that there were no pathways linking the quarry with any such site.



Figure 9: Designated Sites

3.0 The Development

The gravel pit is in a rural setting in the townland of Ummera, approximately 2.5km to the northeast of Macroom as shown in the above figures. The site varies in elevation between approximately 85mOD and 115mOD. The site entrance is at an elevation of approximately 85mOD and rises to the east to approximately 115mOD. The floor of the gravel pit is at an elevation of approximately 91mOD.

The activities at Ummera gravel pit consist of extraction of sand & gravel in an area extending to approximately 3.4ha, with yard area, settlement ponds and stockpile areas extending to approximately 7.1ha. The additional development area extends to approximately 2ha plus the continued operation of the existing gravel pit.

The gravel is won using a track-mounted excavator which selects suitable material for processing; silty material is set to one side for later use in restoration. The track-mounted excavator is brought to site periodically to stockpile material near the working face prior to washing. A front-end loader is used to draw material from the working face to the washing plant. Material is tipped into a hopper with a coarse screen that rejects stones greater than 60mm in diameter; smaller material drops onto the conveyor which takes it to the washing plant. Various aggregate sizes are screened and directed into concrete bunkers below the washing plant. The wash water is directed into the settlement ponds carrying silts and fines. This washing plant has been used at the gravel pit since the late 1970's and has been at its current location since the late 1990's. Blasting is not carried out at the pit.

The processes and activities at the gravel pit are summarised as follows:

1. Topsoil and overburden are stripped from the area from which gravel is to be extracted. Stripping is carried out using an excavator. A dumper is used to draw soil around the site if necessary. The topsoil and overburden are used to provide temporary screening around the working area.
2. The deposit is variable in content (variable grain size), so is worked in different areas to achieve the desired blend of aggregate sizes to suit demand. Silt / clay layers occur in the deposit, and these are set aside using an excavator.
3. Gravel is loaded into the washing plant using the front-end loader. The washing plant screens the aggregate into a number of size fractions, including sand, 6 to 10mm stone, 10 to 20mm stone, 20 to 50mm stone and 50mm^{+} stone.
4. Silts and fines are carried to the settlement ponds by the wash water. The ponds are cleaned periodically, and the silt is stored to the west and east of the of the ponds where it dries out. The silt will be used for future restoration. Occasionally, there is demand for this silt for use as bedding sand for underground utilities.

The site layout is shown on Figure 10. The main elements of the gravel pit are described in the subsection below.

3.1 Settlement Ponds

Up to the late 1970's, gravel was only dry screened at the Ummera pit. In 1978, M&OS obtained planning permission for a washing plant and settlement pond. The original settlement pond for the gravel pit was constructed on the western side of the landholding, between the public road and Bealick / Clashavoon Stream. The pond is shallow (~0.5m deep), U-shaped and approximately 350m long. Wash water was delivered to the pond using a 6-inch diameter PVC pipe.



Figure 10: Site Layout Plan

In the 1980's, the SWRFB (now IFI) requested that steps be taken to reduce the risk of wash water discharge to the stream. New settlement ponds were constructed within the gravel pit at the locations where they are today. In the late 1990's they were enlarged when the washing plant was moved within the pit (to its current location) and as space was created with the progression of extraction. The ponds were modified over time to increase settlement efficiency. The ponds need to be cleaned out regularly, as water storage volume is lost as the ponds fill with silt. The ponds are separated by raised gravel platforms used for access by machinery during cleaning. In this arrangement, water used for washing was sourced from the Clashavoon Stream, pumped directly to the washing plant.

In March 2000 the ponds were re-arranged to improve silt removal and the management of wash water. This included the division of the ponds to increase flow paths and the interconnection of the ponds with pipework. A new pump was installed at the ponds to recirculate wash water; water is only abstracted from the Clashavoon Stream to top-up the ponds.

Another issue that this rearrangement addresses is the influx of runoff water into the ponds from the elevated ground to the east. In these circumstances, the inflow – outflow of water is not in balance. Excess water is now decanted from the western settlement pond and directed to a pond used to treat runoff water from the western side of the yard area and access road, prior to discharge to the roadside drain.

3.2 Site Plant

The plant used on site include:

- A stationary washing plant powered by an electrical motor – see Plate 4.
- A Volvo front-end loader used for loading raw material into the washing plant and loading trucks.
- A water pump powered by electrical motor located adjacent to the Clashavoon Stream. This pump had been used solely to deliver water to the washing plant but is now used to top up the water recirculation system.
- A second pump powered by electrical motor located in the western pond, adjacent to the site office, to recirculate wash water. It has capacity of 135m^3/hr.
- Track-mounted excavators are hired-in when needed to clean out the settlement ponds, segregate materials at the working face and strip topsoil.



Plate 4: View of Washing Plant from the East

3.3 Power Supply

The power supply to the site is mains ESB supply. The mains supply is taken from an overhead 10kV powerline that crosses over the western side of the pit. The supply enters the pit from a pole-mounted transformer at the north-western corner of the pit; located adjacent to the original location of the washing plant. An underground cable goes to the electrical panel located adjacent to the site office. There is no back-up generator at the pit. This has been the power supply arrangement to the gravel pit since the late 1970's.

3.4 Fuel Storage

Refuelling of site plant takes place in the yard area of the gravel pit. Fuel is stored in a self-bunded plastic tank with 1,300 litre capacity. Plastic drums (20 litres typical) of oil are kept in a storage shed. It is proposed to construct a fuel storage shed and concrete pad with hydrocarbon interceptor for fuel dispensing.

3.5 Water Usage

Water is used at the gravel pit for washing gravel, as described above. Water has also been used for dust suppression; a sprinkler system was installed along the site access road, around the floor of the pit and around the working face of the pit in the late 1990's. Water used for dust suppression was sourced from the Clashavoon Stream and stored in a 26m^3 tanker. The sprinkler system has fallen into dis-repair and currently not used. There are no groundwater supply wells at the gravel pit.

Potable water is brought to site by the site manager for personal use. Water used in the welfare facilities is tapped from the water supply to the washing plant.

3.6 Welfare Facilities

The site office and welfare facilities are located in the yard area of the gravel pit. Foul effluent is treated in the on-site septic tank and percolation area. This will be replaced by a sealed foul water holding tank that will be emptied periodically by a licensed waste contractor.

3.7 Characteristics of Proposed Development

The aspects of the development that have the potential to affect the surface water and / or the groundwater environment are discussed in the subsections below.

3.7.1 Discharges to Surface Water

The gravel pit uses water to wash gravel. The water is recirculated through the settlement ponds in a closed-loop system. Overflow from the pond is to a fifth pond which holds excess runoff water. The overflow from this pond is to a roadside drain. Since its installation in 2020, there have only been a few occasions of discharge from this pond. Water percolates into the floor of this pond before it rises to the invert of the discharge pipe.

There are also several informal settlement ponds throughout the gravel pit which intercept overland flow from exposed areas. These ponds trap water which percolates into the ground. This runoff could potentially carried silt to the Clashavoon Stream or Laney River.

3.7.2 Discharges to Groundwater

The gravel pit uses a septic tank and percolation area to manage foul effluent. There is one worker at the gravel pit, so volumes of wastewater generated are approximately 30 litres/day. This doesn't present a significant risk to groundwater quality.

Seepage of wash water from the base of the settlement ponds and other retention ponds around the gravel pit is occurring. The volume of seepage from the settlement ponds varies; seepage is greater following cleaning and decreases with silt / clay build-up. The seepage of water into the underlying aquifer doesn't present a risk to groundwater quality.

3.7.3 Water Supply

The water used for washing gravel is recirculated in a closed-loop system. Water is however lost in the process and is required to be topped up – retained in the washed aggregate, evaporation and seepage into the base of the settlement ponds. The primary source of top-up water is the collection of rainwater runoff from the gravel pit. Runoff from the north-eastern corner of the gravel pit is directed into the first settlement pond. On occasion, during periods of dry weather, the settlement ponds are topped up with water abstracted from the Clashavoon Stream. Improvements have been made to the settlement ponds during the operational period to reduce reliance on water abstraction from the stream.

Bottled water is used for the drinking water supply.

Water used in the welfare facilities is tapped from the water supply to the washing plant.

3.7.4 Contamination

Polluting materials stored and used at the gravel pit include hydrocarbons – diesel and oils. These present a risk of polluting the surface water and groundwater environment due to leakage or spills.

4.0 Potential Impact on Water Bodies

The potential risks present at the gravel pit that could potentially impact the water environment are discussed below. These relate primarily to the operational phase of the gravel pit and to a lesser extent to the restoration phase. These are:

- Sediment loading in the surface water runoff from the site and entering the Clashavoon Stream and / or the Laney River, as discussed in Section 3.7.1.
- Potential spillage of oil and diesel used on site for plant and equipment as discussed in Section 3.7.4. There is one mobile plant (front-end loader) used at the gravel pit. It is refuelled from a 1,300-litre self-bunded plastic storage tank. It is refuelled every 2 to 3 days. The front-end loader also uses hydraulic oils and motor oils. There is potential for leaks and spillages of diesel or oils during refuelling, breakdowns (e.g., breaking of a hydraulic hose) etc.
- Abstraction of water from the Clashavoon Stream could reduce flows in the stream, impacting aquatic life during dry weather flows.

The potential impacts on groundwater quality are of a similar nature to the surface water environment as discussed above but confined to impacts from hydrocarbon spills or leaks. The discharge to groundwater from the septic tank and percolation area do not present a significant risk to the groundwater environment.

Groundwater (aquifer) vulnerability will increase as topsoil is stripped and gravel is removed from the further development areas. The groundwater vulnerability at the gravel pit is mapped by GSI as High. For soils with high permeability, such as sand and gravels, this indicates thicknesses of greater than 3m. The removal of gravel will increase bedrock aquifer vulnerability to Extreme.

5.0 Mitigation

The avoidance and mitigation measures that will be implemented to protect the water environment during the further development of the gravel pit are discussed below.

1. The settlement ponds, improved in March 2020, will be maintained for the duration of the gravel pit's further development. These improves included:
    a. Rearrangement of ponds to improve silt removal.
    b. Use of a second pump to recirculate wash water from the main ponds.
    c. Addition of a surface water retention pond to treat runoff from the yard area and overflow from the settlement ponds when inflow from rainfall runoff occurs.

    The capacity of the ponds within the gravel pit is estimated at 14,790m^3. The washing plant uses approximately 800m^3/day, giving a retention time in the ponds of approximately 18.5 days (which increases to 21 days when weekends are factored).
2. The improvement in the recirculation of wash water has limited the volume of water abstracted from the Clashavoon Stream. As requested by IFI, a gauge will be installed near the abstraction point and the dry weather flow (95%tile flow) level will be marked. Abstraction of water at or below this level will be avoided.
3. The weir obstruction on the Clashavoon Stream will be modified, in consultation with IFI during the appropriate season (July – September), to allow the free passage of fish.
4. Holding ponds have been excavated across the pit area, when and where required, to intercept runoff from the gravel pit to settle silt before the water leaves the site.
5. The flow from springs is directed through the site to avoid trafficked areas. This will keep this water clean as it discharges from the site.
6. The access road into the site will be paved as far as the yard area. This will incorporate a concrete channel for roadside drainage. The access road will be kept clean, so runoff of silt-laden water doesn't occur.
7. A concrete refuelling pad will be installed which will contain any spills during refuelling.
8. Hydrocarbons are currently stored in a self-bunded above-ground storage tank. It is proposed to construct a bunded storage shed adjacent to the refuelling pad. The diesel storage tank will be relocated to this shed as will the storage of oils.
9. Maintenance and repairs to the mobile plant will be carried out on the concrete pad.
10. A spill kit will be kept in the front-end loader.
11. Domestic wastewater is currently treated with an on-site septic tank and percolation system. Due to the low throughput, the septic tank and percolation area will be replaced with a sealed 2.2m^3 underground tank which will be emptied by a licensed contractor.
12. Surface water monitoring will be carried out in the Clashavoon Stream and Laney River.

These measures are considered standard practice in the quarrying industry.

6.0 Residual Impacts

With the implementation of the mitigation measures (current and proposed) at the gravel pit, the residual impacts on the water environment are predicted as follows:

- No impacts on surface water quality have been detected / observed in the receiving watercourses that has been attributed to quarrying activities. With the continued implementation of the mitigation measures, no significant impacts on surface water or groundwater are predicted.
- No significant impacts on groundwater / aquifers are predicted. There has been no hydrocarbon released to the environment, including no spills or leaks to the subsurface; there is no groundwater abstraction; and gravel extraction doesn't extend below the groundwater table. Ephemeral springs are encountered where clay layers occur.
- No impacts on designated sites are predicted to occur.
- There have been no incidences at the quarry which could have put any waterbody at risk of not reaching its WFD objectives.

The overall residual impact of the quarry operations on the water environments is predicted to be imperceptible.

7.0 WFD Compliance

WFD status for the river waterbodies and ground waterbodies is defined in Section 2. Also as noted in Section 2, there are no designated sites hydraulically linked to the Ummera gravel pit. Avoidance and mitigation measures, detailed in Sections 4 and 5 above, demonstrate that the gravel pit can be developed with no significant impacts on the water quality of the underlying ground waterbody or surface waterbodies at and downstream of it. It can therefore be concluded that compliance of the WFD can be achieved. As detailed in Section 6 above, the significance of the residual effects on the water environment is determined to be 'Imperceptible'. A review of the water quality data and WFD river, lake and ground waterbody statuses and risks confirm that:

- There will be no effects on downstream protected areas. It is consistent with the EIA Directive (2014/52/EU), the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC).
- It will not cause a deterioration in the status of any surface and ground waterbodies assessed.
- The WFD river waterbody status of the Curraghanearla Stream, Clashavoon Stream and Laney River has had High or Good status since transposing the WFD. The status of these rivers has not been, nor will be jeopardised.
- The good status of the Ballinhassig West WFD ground waterbody has not been jeopardised. It has remained at Good status for all WFD cycles.
- There will be no conflicts with the objectives set in the River Basin Management Plan.

It can therefore be concluded that the further development of the Ummera gravel pit is compliant with the requirements of the Water Framework Directive (2000/60/EC) and that it will not put any waterbody at risk of not reaching its WFD objectives.