

SECTION G – PROGRAMME OF IMPROVEMENTS

Attachment G1: Compliance with Council Directives

– Compliance with Council Directives

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ATTACHMENT G.1
COMPLIANCE WITH COUNCIL DIRECTIVES

Dangerous Substances Directive 2006/11/EC

In the aquatic environment, this Directive sets limits on the concentration of various pesticides, solvents, metals, and some other substances in a water body. These limits themselves result from extensive testing of the toxicity of these compounds to marine life, not just at the adult stage, but at the juvenile or larval stage as well.

The regulations outline annual mean concentrations of the following substances, which must not be exceeded: Pesticides and Solvents – Atrazine; Dichloromethane; Simazine; Toluene, Tributyltin and Xylenes. Metals and other substances – Arsenic; Chromium; Copper; Cyanide; Fluoride; Lead; Nickel and Zinc.

Monitoring for dangerous substances in the final effluent has been carried out and results are recorded in Section D of this application, it is concluded that Fluoride alone and none of the other substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are seen to be present in the effluent from the works, at concentrations above the standards set in the Water Quality (Dangerous Substances) Regulations, 2001 (S.I. 12 of 2001). Fluoride concentrations in the treated effluent were recorded at 666µg/l, which is above the standard of <500µg/l set by the above regulations (where the hardness of the water measured in mg/l CaCo3 is >100mg/l).

Based on the analysis of water upstream and downstream of the Primary Discharge Point (Tables F.1(i)(a) & F.1(i)(b)), it is concluded that none of the substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are seen to be present in the receiving water environment upstream or downstream of the discharge from the works, at concentrations above the standards set in the Water Quality (Dangerous Substances) Regulations, 2001 (S.I. 12 of 2001).

The Water Framework Directive 2000/60/EC

This Directive came into force on the 22nd of December 2000. The objective of the Directive is to rationalise and update existing water legislation by setting common EU wide objectives for water. The WFD has a broad scope relating to water quality in rivers, lakes, canals, groundwater, transitional (estuarine) waters and coastal waters out a distance of at least one nautical mile.

The fundamental objective of the WFD aims at maintaining "high status" in relation to all waters by 2015 and that status does not deteriorate in any water body. Under this Directive

Member States are obliged to ensure that a co-ordinated approach is adopted for the achievement of the WFD and for the implementation of programmes of measures for this purpose. The main activities for the implementation of the WFD have taken place in the context of River Basin Management Plan (RBMP) Projects led by Local Authorities.

The Carlanstown Agglomeration discharges to the Moynalty River, which is situated within the Boyne River Catchment and forms part of the Eastern RBD. Local authorities are working together and with others to prepare a River Basin Management Plan (RBMP) in relation to the Eastern River Basin District (ERBD) by mid-2009. A draft copy of the Eastern RBD Management Plan as issued on December 2008 is contained in Section F1.(E) of this application.

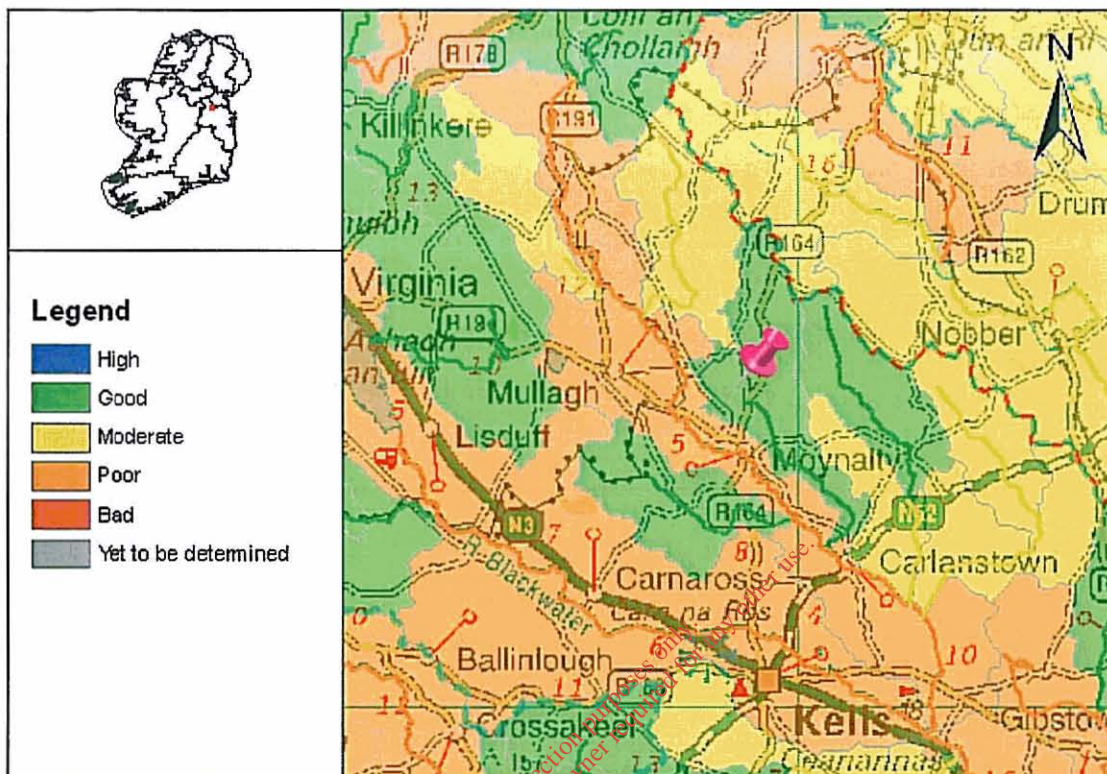
In support of the draft River Basin Management Plan documentation, mapping information have been made available on-line on the www.watermaps.wfdireland.ie. Water maps present data relating to waterbody status, risks, objectives and measures, and detailed waterbody reports.

The detailed waterbody report for the Moynalty River at the location of Carlanstown Village is presented on the following pages.

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Full Report for Waterbody Moynalty, Trib of Blackwater and Boyne



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Date Reported to Europe: 22/12/2008

Date Report Created 04/06/2009



Summary Information:

WaterBody Category: Subbasin Waterbody

WaterBody Name: Moynalty, Trib of Blackwater and Boyne

WaterBody Code: IE_EA_07_940

Overall Status: Poor

Overall Objective: Restore

Overall Risk: 1a At Risk

Applicable Supplementary Measures: Unsewered; Urban & Industrial; Morphology; Forestry;
Report data based upon Draft RBMP, 22/12/2008.



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Status Report

WaterBody Category: Subbasin Waterbody
WaterBody Name: Moynalty, Trib of Blackwater and Boyne
WaterBody Code: IE_EA_07_940
Overall Status Result: Poor



Status Element Description		Result
EX	Status from Monitored or Extrapolated Waterbody	
Biological Elements		
Q	Macroinvertebrates (Q-Value)	Poor
F	Fish	n/a
DI	Phytobenthos (Diatoms)	n/a
FPM	Status value as determined by Margartifera	n/a
Supporting Elements		
MOR	Hydromorphology	n/a
SP	Specific Pollutants	n/a
PC	General Physico-Chemical	Fail
Chemical Status		
PAS	Chemical Status	n/a
Overall Ecological Status		
O	Overall Ecological Status	Poor

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Risk Report

WaterBody Category: Subbasin Waterbody
WaterBody Name: Moynalty, Trib of Blackwater and Boyne
WaterBody Code: IE_EA_07_940
Overall Risk Result: 1a At Risk



Risk Test Description		Risk
Point Risk Sources		
RP1	WWTPs (2008)	1a At Risk
RP2	CSOs	2b Not At Risk
RP3	IPPCs (2008)	1a At Risk
RP4	Section 4s (2008)	2b Not At Risk
RPO	Overall Risk from Point Sources - Worst Case (2008)	1a At Risk
Diffuse Risk Sources		
RD1	EPA diffuse model (2008)	1b Probably At Risk
RD2a	Road Wash - Soluble Copper	2b Not At Risk
RD2b	Road Wash - Total Zinc	2b Not At Risk
RD2c	Road Wash - Total Hydrocarbons	2b Not At Risk
RD3	Railways	2b Not At Risk
RD4a	Forestry - Acidification (2008)	2b Not At Risk
RD4b	Forestry - Suspended Solids (2008)	2b Not At Risk
RD4c	Forestry - Eutrophication (2008)	2a Probably Not At Risk
RD5a	Unsewered Areas - Pathogens (2008)	2a Probably Not At Risk
RD5b	Unsewered Phosphorus (2008)	2b Not At Risk
RD5	Overall Unsewered (2008)	2b Not At Risk
RD6a	Arable	2b Not At Risk
RD6b	Sheep Dip	2b Not At Risk
RD6c	Forestry - Dangerous Substances	2b Not At Risk
RDO	Diffuse Overall -Worst Case (2008)	1b Probably At Risk

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Morphological Risk Sources		
RM1	Channelisation (2008)	1a At Risk
RM2	Embankments (2008)	2b Not At Risk
RM3	Impoundments	2b Not At Risk
RM4	Water Regulation	2b Not At Risk
RMO	Morphology Overall - Worst Case (2008)	1a At Risk
Q/RDI or Point/Diffuse		
QPD	Q class/EPA Diffuse Model or worst case of Point and Diffuse (2008)	1a At Risk
Hydrology		
RHY1	Water balance - Abstraction	2b Not At Risk
Overall Risk		
RA	Rivers Overall - Worst Case (2008)	1a At Risk

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Objectives Report

WaterBody Category: Subbasin Waterbody
WaterBody Name: Moynalty, Trib of Blackwater and Boyne
WaterBody Code: IE_EA_07_940
Overall Objective: Restore



Objectives Description		Result
Objectives		
OB1	Objective 1 - Protected Areas	Restore
OB2	Objective 2 - Protect High and Good Status	Not Applicable
OB3	Objective 3 - Restore Less Than Good Status	Not Applicable
OB4	Objective 4 - Reduce Chemical Pollution	Not Applicable
OBO	Overall Objective	Restore
Deadline		
YR	Default Year by which the objective must be met	2015
EX	Revised Objective Deadline	2015
OBO	Overall Objective and Deadline	Restore - 2015

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Basic Measures Report

WaterBody Category: Subbasin Waterbody
WaterBody Name: Moynalty, Trib of Blackwater and Boyne
WaterBody Code: IE_EA_07_940



Basic Measures Description		Applicable
Key Directives		
BA	Bathing Waters Directive	No
BI	Birds Directive	No
HA	Habitats Directive	Yes
DW	Drinking Waters Directive	Yes
SEV	Major Accidents and Emergencies (Seveso) Directive	Yes
EIA	Environmental Impact Assessment Directive	Yes
SE	Sewage Sludge Directive	Yes
UW	Urban Waste Water Treatment Directive	Yes
PL	Plant Protection Products Directive	Yes
NI	Nitrates Directive	Yes
IP	Integrated Pollution Prevention Control Directive	Yes
Other Stipulated Measures		
CR	Cost recovery for water use	Yes
SU	Promotion of efficient and sustainable water use	Yes
DWS	Protection of drinking water sources	Yes
AB	Control of abstraction and impoundments	Yes
PT	Control of point source discharges	Yes
DI	Control of diffuse source discharges	Yes
GWD	Authorisation of discharges to groundwater	No
PS	Control of priority substances	Yes
MOR	Control of physical modifications to surface waters	Yes
OA	Controls on other activities impacting on water status	Yes
AP	Prevention or reduction of the impact of accidental pollution incidents	Yes

Date Reported to Europe: 22/12/2008

Date Report Created 04/06/2009



Urban and Industrial Discharges Supplementary Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: Moynalty, Trib of Blackwater and Boyne

WaterBody Code: IE_EA_07_940



	Point discharges to waters from municipal and industrial sources	Result
PINDDIS	Is there one or more industrial discharge (Section 4 licence issued by the local authority or IPPC licence issued by the EPA) contained within the water body?	Yes
PINDDISR	Are there industrial discharges (Section 4 licence issued by the local authority or IPPC licence issued by the EPA) that cause the receiving water to be 'At Risk' within the water body?	Yes
PB1	Basic Measure 1 - Measures for improved management.	Yes
PB2	Basic Measure 2 - Optimise the performance of the waste water treatment plant by the implementation of a performance management system.	Yes
PB3	Basic Measure 3 - Revise existing Section 4 license conditions and reduce allowable pollution load.	Yes
PB4	Basic Measure 4 - Review existing IPPC license conditions and reduce allowable pollution load.	Yes
PB5	Basic Measure 5 - Investigate contributions to the collection system from unlicensed discharges.	Yes
PB6	Basic Measure 6 - Investigate contributions to the collection system of specific substances known to impact ecological status.	Yes
PB7	Basic Measure 7 - Upgrade WWTP to increase capacity.	Yes
PB8	Basic Measure 8 - Upgrade WWTP to provide nutrient removal treatment.	No
PS1	Supplementary Measure 1 - Measures intended to reduce loading to the treatment plant.	Yes
PS2	Supplementary Measure 2 - Impose development controls where there is, or is likely to be in the future, insufficient capacity at treatment plants.	Yes
PS3	Supplementary Measure 3 - Initiate investigations into characteristics of treated wastewater for parameters not presently required to be monitored under the urban wastewater treatment directive.	Yes
PS4	Supplementary Measure 4 - Initiate research to verify risk assessment results and determine the impact of the discharge.	Yes
PS5	Supplementary Measure 5 - Use decision making tools in point source discharge management.	No
PS6	Supplementary Measure 6 - Install secondary treatment at plants where this level of treatment is not required under the urban wastewater treatment directive.	No
PS7	Supplementary Measure 7 - Apply a higher standard of treatment (stricter emission controls) where necessary.	Yes

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PS8	Supplementary Measure 8 - Upgrade the plant to remove specific substances known to impact on water quality status.	Yes
PS9	Supplementary Measure 9 - Install ultra-violet or similar type treatment.	No
PS10	Supplementary Measure 10 - Relocate the point of discharge.	Yes

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Physical Modifications Supplementary Measures Report

WaterBody Category: Subbasin Waterbody
WaterBody Name: Moynalty, Trib of Blackwater and Boyne
WaterBody Code: IE_EA_07_940



	Physical Modifications Supplementary Measures	Applicable
	Reduce	
SM1	Codes of Practice	Yes
SM2	Support for voluntary initiatives	Yes
	Remediate	
SM3	Channelisation impact remediation schemes	No
SM4	Channelisation investigation	Yes
SM5	Overgrazing remediation	No
SM6	Impassable barriers, impact confirmed, investigation into feasibility of remediation required	No
SM7	Impassable barriers investigation	Yes

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Date Report Created 04/06/2009



Unsewered Properties Supplementary Measures Report

WaterBody Category: Subbasin Waterbody
WaterBody Name: Moynalty, Trib of Blackwater and Boyne
WaterBody Code: IE_EA_07_940



Supplementary Measures for Unsewered Properties		Applicable
SP1	Amend building regulations	Yes
SP2	Establish certified expert panels for site investigation and certification of installed systems	Yes
SP3	Assess applications for new unsewered systems by applying risk mapping/decision support systems and codes of practice	Yes
SP4	Carry out an inspection programme in prioritised locations for existing systems and record results in an action tracking system	No
SP5	Enforce requirements for percolation	No
SP6	Enforce requirements for de-sludging	Yes
SP7	Consider connection to municipal systems	No

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Date Report Created 04/06/2009



Forestry Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: Moynalty, Trib of Blackwater and Boyne

WaterBody Code: IE_EA_07_940



	Forestry Measures for	Applicable
	Forestry	
SF1	Management Instruments - Ensure regulations and guidance are cross referenced and revised to incorporate proposed measures	No
SF2	Acidification - Avoid or limit afforestation on 1st and 2nd order stream catchments in acid sensitive areas	No
SF3	Acidification - Revise the Acidification Protocol to ensure actual minimum alkalinities are detected and revise boundary conditions for afforestation in acid sensitive areas	No
SF10	Pesticide Use - Pre-dip trees in nurseries prior to planting out	No
SF11	Pesticide Use - Maintain registers of pesticide use	No
SF12	Acidification - Restructure existing forests to include open space and structural diversity through age classes and species mix, including broadleaves	No
SF13	Acidification - Mitigate acid impacts symptomatically using basic material	No
SF14	Acidification - Manage catchment drainage to increase residence times and soil wetting	No
SF15	Acidification - Implement measures to increase stream production.	No
SF16	Eutrophication - Establish riparian zone management prior to clearfelling	No
SF17	Eutrophication and Sedimentation - Enhance sediment control	No
SF18	Eutrophication - Manage catchment drainage to increase residence times and soil wetting, including no drainage in some locations	No
SF19	Sedimentation - Establish riparian zone management prior to clearfelling	No
SF20	Sedimentation - Enhance sediment control	No
SF21	Sedimentation - Manage catchment drainage to increase residence times and soil wetting, including no drainage in some locations	No
SF22	Hydromorphology - Enhance drainage network management, minimise drainage in peat soils	No
SF23	Pesticide Use - Develop biological control methods	No

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SF4	Eutrophication and Sedimentation - Avoid or limit forest cover on peat sites	No
SF5	Eutrophication and Sedimentation - Change the tree species mix on replanting	No
SF6	Eutrophication and Sedimentation - Limiting felling coup size	No
SF7	Eutrophication and Sedimentation - Establish new forest structures on older plantation sites	No
SF8	Hydromorphology - Audit existing drainage networks in forest catchments	No
SF9	Pesticide Use - Reduce pesticide usage	No

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As can be seen from the water maps report the Moynalty River has an overall status of Poor. This status relates to the Ecological Status of the surface water body and is derived from measurements of biological, hydro-morphological and physio-chemical elements.

The EPA monitor water quality in the Moynalty River at stations upstream and downstream of the discharges from Carlanstown WWTP. The closest EPA station upstream of the agglomeration (07M030800) has a most recent Q-Value rating of Q3-4 (= moderate water quality (slightly polluted)), whilst the closest EPA station downstream of the agglomeration (07M030900) also has a most recent Q-Value rating of Q3-4 (=moderate water quality (slightly polluted)). This consistency in water quality from upstream of the Carlanstown WWTP discharge locations, to that downstream of the discharge locations, would indicate that the quality of the effluent discharged is not having a negative effect on the quality of the Moynalty River.

A risk assessment has been carried out on the Moynalty River and it was determined that the overall risk rating is 1a – At Risk. The risk rating relates to the likelihood that the surface water body within the RBD will fail to meet environmental quality objectives set out for the bodies under Article 4 of the WFD.

A breakdown of the overall risk rating is provided in the water maps detailed risk report. The report presents a Risk Test Description together with the individual risk classification. Under Point Risk Sources, WWTPs (2008) were assigned a risk rating of 1a - At Risk. However, monitoring results from the Carlanstown WWTP indicate that this WWTP is performing well and providing effluent treatment to the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) standards.

Hence the discharge from Carlanstown WWTP does not constitute a significant risk to the Eastern RBD's WFD targets of achieving a good status in all waters by 2015.

The Birds Directives 79/409/EEC

In 1979 the European Community adopted Council Directive 79/409/EEC on the conservation of wild birds. (The 'Birds Directive'). The Directive provides a framework for the conservation of, and human interactions with, wild birds in Europe.

Proposed Special Protection Area's (SPA's) are selected at national level in accordance with the criteria set out in the various Annexes contained in the Birds Directive. The Birds Directive gives different levels of protection to different species. The species are grouped according to the level of protection they are given, as shown in the Directive Annexes.

As the primary discharge point from the waste water treatment plant is not located in a SPA, it is not anticipated that the Carlanstown WWTP will have negative environmental impacts, within the scope of the Birds Directive.

The Groundwater Directives 80/68/EEC & 2006/118/EC

[Council Directive 80/68/EEC is to be repealed with effect from 22/12/2013 in accordance with the WFD.] This directive mainly deals with the protection of groundwater, groundwater dependant ecosystems and the use of groundwater in water supply for human consumption.

There are no emissions to ground/groundwater from the Carlanstown WWTP, therefore negative impacts on soil / groundwater is not anticipated.

The Drinking Water Directives 80/778/EEC

The Drinking Water Directives 80/77/EEC concerns water intended for human consumption either in its original state or after treatment.

At present there are 2 no. Meath County Council Drinking Water Abstraction Points (Liscarton & Roughgrange) located ca. 15.85km & 39.23km downstream (respectively) of the Carlanstown Agglomeration Primary Discharge Point.

The quality of the final effluent being discharged from the Carlanstown WWTP, coupled with the very large distances (15.85km & 39.23km) between the Carlanstown Primary Discharge Point and the 2 no. Meath County Council Drinking Water Abstraction Points, indicate that the Drinking Water Abstraction Points are adequately protected.

Urban Waste Water Treatment Directive, 91/271/EEC

The Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001) give effect to this Directive and Directive No. 2000/60/EC (WFD). These regulations were amended by the Urban Waste Water Treatment Amendment Regulations, 2004 (S.I. No. 440 of 2004). These regulations specify limits on wastewater treatment discharge of BOD₅, COD and Total Suspended Solids. The regulations also set discharge limits for Total Phosphorus and Total Nitrogen for discharges to sensitive waters, as listed in the Third Schedule of the regulations. The Urban Waste Water Treatment Regulations also set out deadlines for secondary treatment of wastewaters depending on the size of agglomerations.

Final effluent from Carlanstown WWTP is discharged to a tributary of the Moynalty River, which is not classified as nutrient sensitive under the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001). The Moynalty River however forms part of the Boyne Catchment which is listed in the Urban Waste Water Treatment Regulations, 2001 Part 1 as:

River Boyne, County Meath – 6.5km section downstream of sewage treatment works outfall at Blackcastle, Navan, County Meath.

The existing treatment works at Carlanstown provides consistent effluent treatment to the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) standards.

The Habitats Directives, 92/43/EEC

In 1992 the European Community adopted Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. This directive is the main community instrument, which aims to safeguard biodiversity. Under the Directive, Member States have a responsibility to preserve habitats and species of Community interest and to identify and designate, as Special Areas of Conservation (SAC), sites which are important for the protection of the species and habitats covered by the Directive. The Special Areas of Conservation, and the Special Protection Areas (SPA) designated under the Birds Directive (79/409/EEC), make up the European network of protected sites, known as Natura 2000.

There are two emission points from the Carlanstown Sewerage Agglomeration that discharge to the Moynalty River. As the Moynalty River has no European Site Designation it is therefore not anticipated that Carlanstown WWTP will have any adverse environmental impacts, within the scope of the Habitats Directive.

The Environmental Liabilities Directive, 76/160/EEC

The Directive 2004/35/EC of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage provides a framework of environmental liability based on the "polluter pays" principle.

The Directive applies to certain occupational activities, including the operation of installations under the IPPC Directive, the Waste Framework Directive, the Landfill Directive and the Waste Incineration Directive. The Directive will also apply to activities under the proposed Extractive Industry Waste Directive.

It imposes strict liability on those who cause environmental damage (that is, damage to biodiversity and water resources and land contamination that causes significant risk of harm to human health). It requires such persons to take preventive measure to avoid damage occurring, remedy damage that occurs and bear the remediation costs of damage that is remedied by the competent authority.

The existing Carlanstown Sewerage Agglomeration operation adheres to this directive.

The Bathing Water Directives, 76/160/EEC

The Directive is not applicable to the discharge.

Shellfish Waters Directive, 79/923/EEC

The Directive is not applicable to the discharge.

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SECTION G – PROGRAMME OF IMPROVEMENTS

Attachment G2: Compliance with Water Quality Standards for Phosphorus Regulations

- **Compliance with Water Quality Standards for Phosphorus
Regulations (S.I. NO. 258 OF 1998)**

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ATTACHMENT G.2
COMPLIANCE WITH THE WATER QUALITY STANDARDS FOR PHOSPHORUS
REGULATIONS (S.I. NO. 258 OF 1998)

1.0 Programme of Improvements

A 'Phosphorus Regulations Implementation Report 2006' was prepared by Meath County Council in accordance with the requirements of S.I. No. 258 of 1998 – Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorus) Regulations, 1998.

Prior to the report, baseline sites were established for the purposes of determining compliance with the phosphorus regulations, with Q values being assigned to each site during the 1995-1997 period. The above-mentioned report has shown substantial improvements in water quality in County Meath as a whole since the baseline survey was carried out. The percentage of stations classed as unpolluted increased from 22% in 1997 to 40.6% for 2006. Additionally, the report indicated that serious pollution had been eliminated for the baseline sites (5.5% in 1997, 0% for 2006).

Figure 1.1 below has been abstracted from the 'Phosphorus Regulations Implementation Report 2006':

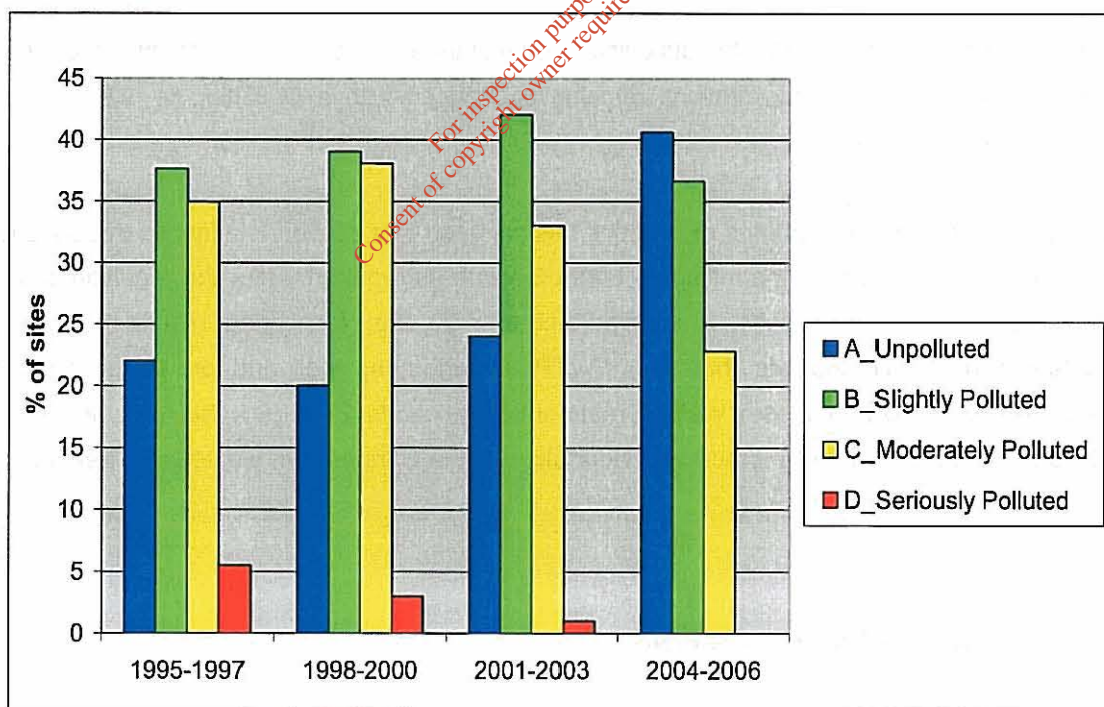


Figure 1.1 Water Quality Status in Meath – 1995 to 2006,

(source: Phosphorus Regulations Implementation Report 2006)

Table 2.2 entitled 'Implementation Programme Summary Table for Rivers' registers the Moyalty River and assigns a baseline Q value standard to be achieved at the various EPA

sampling sites located along the river. The closest sampling site located on the Moynalty River upstream of the Carlanstown WWTP is Carlanstown Br Site Code No. 07M030800 and this has been assigned a Q value rating to be achieved of Q4. The nearest downstream sampling point is Fyanstown Br Site Code 07M030900 and this has been assigned a Q value rating to be achieved of Q4. The report states that the Carlanstown WWTP was built in 2002 and progress to date (2006) list the plant as performing well.

The requirements for the EPA monitoring stations Carlanstown Br (07M030800) and Fyanstown Br (07M030900) under the 1998 Phosphorus Regulations are as follows:

Station Ref.	River	Baseline Q Value	Minimum Target Q Value (as reqd. under the Phosphorus Regs.)	Current Q Value (taken from EPA ENVision maps)
Carlanstown Br 07M030800	Moynalty	3-4	4	3-4
Fyanstown Br 07M030900	Moynalty	4	4	3-4

*provisional 2006 results provided by EPA

The above table illustrates that the biological quality of the water between Carlanstown Bridge and Fyanstown Br sampling stations remains unchanged with a Q Rating of Q3-4 being recorded at both stations.

Compliance with the phosphorus regulations has not been met at either station, as the current Q values are not reaching the minimum target Q value as required under the regulations. In interpreting the above results, it is important to note that monitoring results from the Carlanstown WWTP indicate that this WWTP is performing well and providing effluent treatment to the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) standards. Nutrient removal is actively undertaken at the Carlanstown wastewater treatment facility.

2.0 Catchment Management Plans

The Moynalty River flow within the Boyne Catchment. A copy of the '*River Boyne Water Quality Management Plan*' (November 1997) has been included in Attachment F.1(E) of this application. In addition, an ERBD Draft River Basin Management Plan has been prepared and was published in December 2008, however this plan is currently out for consultation and is in draft format.

Under the heading 'Water Quality Management Policies', the 'River Boyne Water Quality Management Plan' states that:

"Wastewater treatment to be a minimum of secondary treatment for all significant waste discharges with site specific consideration of the need for higher standards of effluent, nutrient control or the impact of combined sewer overflows to be evaluated, having regard to the nature of the effluent load, low river flow (95 percentile), background water quality and compliance with the stated water quality objectives..."

With regards to Orthophosphate and Total Phosphorus, the report goes on to state:

"It should be noted that the Urban Wastewater Treatment Directive (91/271) makes specific provision for nutrient removal from wastes discharged to waters which are eutrophic or are liable to become eutrophic. Accordingly, phosphate removal should be provided for significant effluent discharges (at least those from WWT plants with a design capacity \geq 2000 PE)"

The existing Carlanstown Wastewater Treatment Plant (WWTP) and associated sewer network was constructed in 2002. In order to comply with requirements for phosphorus removal for discharge of treated effluent to the Moynalty River, ferric dosing is practiced at the plant. The ferric sulphate is dosed from the 1000l tank at variable rates (related to laboratory test results).

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SECTION G – PROGRAMME OF IMPROVEMENTS

Attachment G3: Impact Mitigation

– Impact Mitigation

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ATTACHMENT G.3
IMPACT MITIGATION

As outlined in Sections D of this application, monitoring for dangerous substances in the final effluent has been carried out, it is concluded that Fluoride alone and none of the other substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are seen to be present in the effluent from the works, at concentrations above the standards set in the Water Quality (Dangerous Substances) Regulations, 2001 (S.I. 12 of 2001). Fluoride concentrations in the treated effluent were recorded at 666µg/l, which is above the standard of <500µg/l set by the above regulations (where the hardness of the water measured in mg/l CaCo3 is >100mg/l).

Based on the analysis of water upstream and downstream of the Primary Discharge Point (Tables F.1(i)(a) & F.1(i)(b)), it is concluded that none of the substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are seen to be present in the receiving water environment upstream or downstream of the discharge from the works, at concentrations above the standards set in the Water Quality (Dangerous Substances) Regulations, 2001 (S.I. 12 of 2001).

Considering the level of treatment achieved at Carlanstown WWTP, the treated waste water discharge from Carlanstown WWTP does not constitute risk of 'significant environmental pollution'.

Thus the Scheme is considered in compliance with Council Directives. With regard to a programme of improvement, Section B10 of this submission refers to the capital investment programme for the Carlanstown agglomeration.

SECTION G – PROGRAMME OF IMPROVEMENTS

Attachment G4: Stormwater Overflows

- **Stormwater Overflow**

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ATTACHMENT G.4
STORMWATER OVERFLOW – CARLANSTOWN SEWERAGE SCHEME

1.0 STORMWATER FACILITIES

The definition of 'Storm Water Overflow' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007 is as follows:

"Storm water overflow" - means a structure or device on a sewerage system designed and constructed for the purpose of relieving the system of excess flows that arise as a result of rain water or melting snow in the sewered catchment, the excess flow being discharged to receiving waters;

All discharges from the Carlanstown WWTP and agglomeration (other than the primary discharge) comply with the definition of 'Storm Water Overflow' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007.

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