Annual Environmental Report 2016

Agglomeration Name:	**Carrickmacross**
Licence Register No.	**D0062-01**

Contents

Section 1. Executive Summary and Introduction to the 2016 AER

1.1 Summary Report on 2016

This Annual Environmental Report has been prepared for **D0062-01, Carrickmacross,** in County **Monaghan**, in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified assessments are included as an appendix to the AER as follows:

- Sewer Integrity Risk Assessment in **Appendix 7.3**
- Storm water overflow assessment in **Appendix 7.4**

The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 12,150. The treatment process includes the following:-

- Preliminary Treatment (Screening and Grit Removal)
- Secondary Treatment (Aeration)
- Nutrient Removal (Ferric dosing and Anoxic Zone)
- Tertiary Treatment (Sand Filter)

The final effluent from the Primary Discharge Point was compliant with the Emission Limit Values in 2016.

1,164,660 kgs total weight sludge was removed from the wastewater treatment plant in 2016 as dried cake. Sludge was transferred to the BioCore Sludge Treatment Centre in Co Meath.

A flow meter was installed on the SWO at the WWTP in 2016 as part of the Flow monitoring and Sampling Programme. There were no other major capital or operational changes undertaken in 2016.

An Annual Statement of Measures is included in **Appendix 7.1.**

Section 2. Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Table 2.1 Influent Monitoring Summary

2.1.1 Monthly Influent Monitoring	BOD (mg / l)	COD (mg / l)	SS (mg / l)	TP (mg / l)	TN (mg / l)	Hydraulic Loading (m3/d)	Organic Loading (PE/Day)
Number of Samples	12	12	12	12	12		
Annual Max.	411	1301	678	9.5	57.2	7,166.4	10,243
Annual Mean	126.60	336.93	141.63	2.94	22.26	2,134.13	5,809.99

Other inputs, where relevant, are detailed in Section 3.6.

Significance of results

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2

The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliant with Emission Limit Values

The annual mean organic loading is less than the Treatment Plant Capacity as detailed further in Section 3.2.

The annual maximum organic loading is less than the Treatment Plant Capacity as detailed further in Section 3.2.

2.2 Discharges from the agglomeration

Table 2.2 - Effluent Monitoring

2.2.1 Effluent Monitoring Summary	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Total P (mg/l)	Ortho P (mg/l)	Ammonia NH3 (mg/l)	pH
WWDL ELV (Schedule A) where applicable	10.00	125.00	10.00	1.00	0.40	0.75	6 to 9
ELV with Condition 2 Interpretation included	20.00	250.00	25.00	1.20	0.80	1.50	No allowable exceedances
Interim % Reduction (Schedule A)							
Number of sample results	12	12	12	12	12	12	12
Number of sample results above WWDL ELV	0	0	2	0	2	1	0
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	0	0	0	N/A
Annual Mean (for parameters where a mean ELV applies)							
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Significance of results

The WWTP was compliant with the ELV's set in the wastewater discharge licence.

2.3.1. Ambient Monitoring Summary

Table 2.3. Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Bathing Water	Drinking Water	FWPM	Shellfish	Current WFD Status
Upstream Monitoring Point	284561E 302882N	RS06P010230					Good
Downstream Monitoring Point	284719E 302758N	RS06P010280	No	No	No	No	Poor

The results for the upstream and downstream monitoring and/or additional monitoring data sets from Irish Water are included in the Appendix 7.2.

Significance of results

- The WWTP was compliant with the ELV's set in the wastewater discharge licence as detailed in Section 2.2.
- The discharge from the wastewater treatment plant does have an observable negative impact on the water quality.
- The discharge from the WWTP does have an observable negative impact on the Water Framework Directive status.
- Other potential causes of deterioration in water quality relevant to this area are unknown.

2.4 Data collection and reporting requirements under the UWWTD

The electronic submission of data was completed on 11/01/2017.

2.5 Pollutant Release and Transfer Register (PRTR) - report for previous year

A PRTR is not required as the PE is < 100,000.

Section 3. Operational Reports Summary

3.1 Treatment Efficiency Report

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)
Influent mass loading (kg/year)	127,239	338,627	142,340	2,954	22,370
Effluent mass emission (kg/year)	1,994	14,700	5,136	339	12,156
% Efficiency (% reduction of influent load)	98%	96%	96%	89%	46%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)	2,758
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)	8,274
Hydraulic Capacity – Current loading (m3/day)	2,134
Hydraulic Capacity – Remaining (m3/day)	6,140
Organic Capacity - Design / As Constructed (PE)	12,150
Organic Capacity - Current loading (PE)	5,810
Organic Capacity – Remaining (PE)	6,340
Will the capacity be exceeded in the next three years? (Yes / No)	No
Is an upgrade or expansion of the WWTP proposed? (i.e. if on Minor Programme or CIP) (Yes/No)	Yes

3.3 Extent of Agglomeration Summary Report

In this section Irish Water is required to report on the amount of urban waste water generated within the agglomeration. It does not include any waste water collected and created in a private system and discharged to water under a Section 4 Licence issued under the Water Pollution Acts 1977 (as amended).

Table 3.3 - Extent of Agglomeration Summary Report

	% of P.E. load generated in the agglomeration	Estimated / Measured
Load generated in the agglomeration that is collected in the sewer network	100%	Estimated
Load collected in the agglomerations that enters treatment plant	100%	Estimated
Load collected in the sewer network but discharges without treatment (includes SWO, EO, and any discharges that are not treated)	Unknown	Estimated

Load generated in the agglomeration that is collected in the sewer network is the total load generated and collected in the municipal network within the boundary of the agglomeration.

Load collected in the agglomerations that enters treatment plant is that portion of the previous figure which enters the waste water treatment plant.

Load collected but discharged without treatment is that portion of the first figure which is discharged without treatment.

3.4 Complaints Summary

A summary of complaints of an environmental nature is included below.

Table 3.4 - Complaints Summary Table

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
9	Investigation Sewage Flooding - Below Ground Waste Water	1	8

3.5 Reported Incidents Summary

A summary of reported incidents is included below.

Table 3.5.1 - Summary of Incidents

3.5.1 Incident Type (e.g. Non-compliance, Emission, spillage, pollution incident)	Incident Description	Cause	No. of Incidents	Recurring Incident (Yes/No)	Corrective Action	Authorities Contacted. Note 1	Reported to EPA (Yes/No)	Closed (Yes/No)
Abatement equipment offline	INCI010815 Breakdown of 3 No aerators on the 04/09/16	Lightning strikes caused the 3 aerators to trip	1	No	Caretaker responded to alarms. 1 aerator fixed by 13.00 05/09/16 and all aerators were fully operational on the 08/09/16	IFI	Yes	Yes

Note 1: For shellfish waters notify the Marine Institute (MI) Sea Fisheries Protection Authority (SFPA) Food Safety Authority (FSAI) and An Bord Iascaigh Mhara (BIM). This should also include any other authorities that should be contacted arising from the findings of any Licence Specific Reports also e.g. Drinking Water Abstraction Impact Risk Assessment, Fresh Water Pearl Mussel Impact Assessments etc.

Table 3.5.2 - Summary of Overall Incidents

Number of Incidents in 2016	1
Number of Incidents reported to the EPA via EDEN in 2016	1
Explanation of any discrepancies between the two numbers above	N/A

3.6 Sludge / Other inputs to the WWTP

Other inputs to the waste water treatment plant are summarised in Table 3.6 below.

Table 3.6 - Other Inputs

Input Type	m3/year	P.E.	% of load to WWTP	Included in Influent Monitoring? (Y/N)	Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
Domestic /Septic Tank Sludge	216	3	0.05%	Yes	Yes	No
Industrial / Commercial Sludge	20	0	0.00%	Yes	Yes	No
Landfill Leachate (delivered by tanker)						
Landfill Leachate (delivered by sewer network)						
Other (specify)	56 * from other Council WWTP	1	0.01%	Yes	Yes	No

Section 4. Infrastructure Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

The Storm Water Overflow Identification & Inspection report is included in Appendix 7.4. A summary of the significance and operation is included below.

Table 4.1.1 - SWO Identification and Inspection Summary Report

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High/Med/ Low)	Compliance with DoEHLG criteria	No. of times activated in 2016 (No. of events)	Total volume discharged in 2016 (m3)	Total volume discharged in 2016 (P.E.)	Estimated / Measured data
SW-2	2845888E 302680N	Yes	Medium	Non Compliant	None	0	0	Estimated

Table 4.1.2 - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m3/yr)?	0
How much sewage was discharged via SWOs in the agglomeration in the year (p.e.)?	0
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2016?	0
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	Yes
Have the EPA been advised of any additional SWOs / changes to Schedules A/C under Condition 1 ?	N/A

4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.

The Improvement Programme report is in Appendix 7.1.

Table 4.2.1 - Specified Improvement Programme Summary

Specified Improvement Programmes	Licence Schedule	Licence Completion Date	Date Expired	Status of Works	% Construction Work Completed	Licensee Timeframe for Completing the Work	Comments
Decommissioning of SW1 (Existing)	A	31/12/2014	Yes	At planning stage	0%		On capital investment programme due to commence 2017
Main Upgrade Works at waste water treatment plant, including (1) effluent outfall pipeline and associated works (2) Pumping Station (inlet and outlet) (3) Storm Tanks and (4) Inlet Works	C	01/01/2015	Yes	At planning stage	0%		On capital investment programme due to commence 2017
Discharges to be continued	A	31/12/2011	Yes	Completed	100%		SW3 and SW12

A summary of the status of any improvements identified by under Condition 5.2 is included below.

Table 4.2.2 - Improvement Programme Summary

Improvement Identifier / Name	Improvement Description	Improvement Source	Progress (% complete)	Expected Completion Date	Comments
No standby pump at main inlet Oriel Road pump station no overhead lifting equipment or gantry to lift pump when required.	Provision and installation of standby pump and overhead lifting equipment and gantry at Orial road Inlet Pump Station	WWTP assessment (Condition 5.2)	100%	01/04/2015	Completed 2015
No record of activation or flow measurement from SWO tank at the WWTP	Install SWO measurement /recorder device to measure flows/ record no times it activates	SWO assessment (Condition 4 & 5.2)	100%	02/08/2016	Flow meter installed on the SWO at the WWTP in 2016 as part of the Flow monitoring and Sampling Programme
Carrickmacross Sewage Scheme Contract 3 (Treatment Plant upgrade and Outfall)	Carrickmacross Sewage Scheme Contract 3 (Treatment Plant upgrade and Outfall)	Drinking Water Abstraction Risk Assessment	0%		On IW capital Investment programme works due to commence 2017
Overflows from storm tank during adverse weather	Extension/ upgrade of aeration tank No 1	WWTP assessment (Condition 5.2)	0%		On IW capital Investment programme works due to commence 2017.

Table 4.2.3 - Sewer Integrity Risk Assessment Tool Summary

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	Risk Assessment Rating (High, Medium, Low)	Risk Assessment Score	Reference to relevant section of AER (e.g. Appendix 2 Section 4.	Specified improvements	Comment
Hydraulic Risk Assessment Score	High	150	Appendix 7.3 AER 2016		
Environmental Risk Assessment Score	Low	500	Appendix 7.3 AER 2016		
Structural Risk Assessment Score	High	150	Appendix 7.3 AER 2016		
Operation & Maintenance Risk Assessment Score	Low	200	Appendix 7.3 AER 2016		
Overall Risk Score for the agglomeration	High	1000	Appendix 7.3 AER 2016		

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Never required by condition 5 in Licence	Required in this AER or outstanding from previous AER	Included in this AER / Remains outstanding	Reference to previous AER containing report or relevant section of this AER
Priority Substances Assessment	Required	No	No	AER 2011
Drinking Water Abstraction Point Risk Assessment	Required	No	No	AER 2012
Shellfish Impact Assessment	Not Required	No	No	
Pearl Mussel Report	Not Required	No	No	
Toxicity/Leachate Management	Not Required	No	No	
Toxicity of Final Effluent Report	Not Required	No	No	
Small Stream Risk Score Assessment	Not Required	No	No	
Habitats Impact Assessment	Not Required	No	No	

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	Yes	Screening for priority substances
Drinking Water Abstraction Point Risk Assessment	Yes	To relocate the discharge below the drinking water abstraction point
Shellfish Impact Assessment	No	
Pearl Mussel Report	No	
Toxicity/Leachate Management	No	
Toxicity of Final Effluent Report	No	
Small Stream Risk Score Assessment		
Habitats Impact Assessment	No	

5.1 Priority Substances Assessment

The Priority Substances Assessment was submitted previously in AER 2011 and is summarised below:

Priority Substance Assessment Summary Report	**Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.**
Does the assessment use the Desk Top Study Method or Screening Analysis to determine if the discharge contains the parameters in Appendix 1 of the EPA guidance	Desktop study and Screening Analysis
Does the assessment include a review of Trade inputs to the works?	No
Does the assessment include a review of other inputs to the works?	No
Does the report include an assessment of the significance of the results where a listed material is present in the discharge? (e.g. impact on the relevant EQS standard for the receiving water)	Yes
Does the assessment identify that priority substances may be impacting the receiving water?	No
Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?	No
Recommendations	Screening for priority substances
Status of any improvement measures required	Screening results submitted with 2012 AER

5.2 Drinking Water Abstraction Point Risk Assessment

The Drinking Water Risk Assessment was submitted previously in AER 2012

Drinking Water Abstraction Point Risk Assessment Summary Report	Licensee self-assessment checks to determine whether all relevant information is included
Is a Drinking Water Abstraction Point Risk Assessment required in the 2016 AER (or outstanding from a previous AER)	No
Does the Drinking Water Abstraction Point Risk Assessment identify whether any of the discharges in Schedule A of the licence pose a risk to a drinking water abstraction	Yes
Does the assessment identify if any other discharge (s) from the works pose a risk to a drinking water abstraction (includes emergency overflows)	Yes
What is the overall risk ranking applied by the licensee	Medium
Does the risk assessment consider the impacts of normal operation	Yes
Does the risk assessment consider the impacts of abnormal operation (eg. Incidents / overflows)	Yes
Does the risk assessment include control measures for each risk identified	Yes
Does the risk assessment consider operational control measures eg waste water incident notification to drinking water abstraction operator	Yes
Does the risk assessment include infrastructural control measures	Yes
Recommendations	To relocate the discharge below the drinking water abstraction point
Does the Improvement Programme for the agglomeration include control measures / corrective actions to eliminate / reduce priority substances identified as having an impact on receiving water quality?	No
Status of any improvement measures required	Findings from the assessment have been included under the programme of improvements required under Condition 5 as part of the contract 3 for Carrickmacross. This is on the IW capital investment programme and is due to commence in 2017

Section 6. Certification and Sign Off

Table 6.1 - Summary of AER Contents

Does the AER include an executive summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for consideration of a technical amendment / review of the licence?	Yes
List reason e.g. additional SWO identified	N/A
Is there a need to request/advise the EPA of any modifications to the existing WWDL? Refer to Condition 1.7 (changes to works/discharges) & Condition 4 (changes to monitoring location, frequency etc.)	No
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements	N/A
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	No
Ensure the following reports are included	Sewer Risk Integrity Assessment (Appendix 7.3) Storm water overflow assessment (Appendix 7.4)

Declaration by Irish Water

The AER contains the following:

- Introduction and background to 2016 AER.
- Monitoring Reports Summary.
- Operational Reports Summary.
- Infrastructural Assessment and Programme of Improvements.
- Licence specific reports
- Certification and Sign Off
- Appendices

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Signed:  Date: 24/02/2017

Elizabeth Arnett
Head of Corporate Affairs and Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures

1	Issue	No standby pump at main inlet Oriel Road pump station, no overhead lifting equipment or gantry to lift pump when required.
	Mitigation Measure	Provision and installation of standby pump and overhead lifting equipment at Orial road inlet pump station.
	Status	Complete 2015
2	Issue	No record of activation or flow measurement from SWO tank at the WWTP
	Mitigation Measure	Install SWO measurement/recorder device to measure flows/record no times it activates
	Status	Recorder device on SWO installed as part of flow and monitoring programme 2016.
3	Issue	Failed asset replacement of venturi aerator pump in oxidation ditch No 2. Pump has burned out and is no longer operational.
	Mitigation Measure	Replacement of venturi aerator pump in oxidation ditch no 2
	Status	2 replaced 2015 and Complete 2016.

Specified Improvement Programme

Under Schedule C.1 'Improvement Programme for Primary Discharge' of the licence, 'Advance Works' are specified at the WWTP, including,

- Storm tanks
- Inlet Works
- Pumping Station (inlet and outlet)
- Effluent outfall pipeline and associated works.

Schedule C.3 'Specified Improvement for Storm Water Overflows' of the licence, upgrading of Storm Water Overflow, SW-2, is required to comply with the criteria outlined in the DoECLG, 'Procedures and Criteria in relation to Storm Water Overflows, 1995'.

Schedule C.1 and C.3 specified improvements form part of proposed Contract 3 for Carrickmacross WWTP. These works are on the IW capital investment programme. Works are due to commence in 2017.

Appendix 7.2 Ambient Monitoring Results

Upstream Carrickmacross WWTP								
Sample Date	Sample Method	Dissolved Oxygen mg/l	Temp °C	Total Nitrogen mg/l	Ortho Phosphorus mg/l	Ammonia mg/l	pH units	BOD mg/l
05/01/16	Grab	9.85	9.6	1.1	0.037	0.024	8	3.7
09/02/16	Grab	10.6	7.5	1.4	0.026	0.016	7.9	<1
02/03/16	Grab	10.44	7.9	1.7	0.027	0.031	7.9	<2
04/04/16	Grab	10.35	8.9	1.7	0.039	0.027	7.8	2.7
09/05/16	Grab	9.23	13.8	2.9	0.04	0.027	8.1	1.6
10/06/16	Grab	7.52	17.9	3.4	0.026	0.043	7.9	1.1
04/07/16	Grab	9.71	13.4	<1	0.016	0.051	8.2	1.9
15/08/16	Grab	8.77		3.5	0.039	0.009	8	1.5
20/09/16	Grab	9.33	9.33	2.1	0.033	0.01	8	6.6
12/10/16	Grab	9.44	9.44	2.5	0.036	<0.007	8.1	<1
14/11/16	Grab	9.62	9.62	1.3	0.187	<0.007	8	2.7
06/12/16	Grab	11.03	11.03	1.8	0.015	<0.007	8.1	7
	Average	9.65	10.76	2.033	0.0434	0.0216	8	2.73

Downstream Carrickmacross WWTP								
Sample Date	Sample Method	Dissolved Oxygen mg/l	Temp °C	Total Nitrogen mg/l	Ortho Phosphorus mg/l	Ammonia mg/l	pH units	BOD mg/l
05/01/16	Grab	9.66	10.1	1.6	0.032	0.01	8	3.2
09/02/16	Grab	10.15	8.7	1.9	0.309	0.02	7.9	<1
02/03/16	Grab	9.67	7.3	2.4	0.035	0.04	7.6	<2
04/04/16	Grab	8.9	10.39	2.3	0.046	0.045	7.7	2.3
09/05/16	Grab	8.99	14.3	2.9	0.044	0.039	7.9	1.9
10/06/16	Grab	8.44	18.3	11.2	0.285	0.07	7.9	1.2
04/07/16	Grab	9.19	14.4	4.9	0.058	0.055	7.9	2
15/08/16	Grab	8.77		7.3	0.084	0.009	7.9	3.1
20/09/16	Grab	9.26	14.7	9.7	0.061	0.029	7.9	1
12/10/16	Grab	9.16	10.3	15.8	0.113	0.012	7.9	1.6
14/11/16	Grab	9.25	12.7	5.4	0.119	0.017	7.8	1.4
06/12/16	Grab	10.09	11.3	6.4	0.039	<0.07	7.8	5.5
	Average	9.29	12.044	5.98	0.102	0.034	7.85	2.18

Appendix 7.3 Sewer Integrity Risk Assessment 2016

	Section 1.1 Agglomeration Details					
	Name	**Carrickmacross**				
	Licence Number	**D0062-01**				
	Insert Name of Catchment if the Risk Assessment is for part of an agglomeration (only divide agglomeration where p.e. >5,000p.e. and where such division is warranted)	**Carrickmacross**				
	Date Licence Issued	**08/11/2011**				
	Current Date	**13/02/2017**				
			Year	Year	Year	Year
	Waste Water Works - Wastewater Treatment Plant Details	**Unit**	2015	2016	2017	2018
1.1	Is there an existing WWTP in operation?		**Yes**	**Yes**	**Yes**	**Yes**
	Section 1.2 BOD Loading & Population Equivalent					
1.2	Average Daily Influent Flow or Average Total Flow in system (If no measured data exists, insert estimated figure)	l/day, measured	2615000	2134000		
1.3	Average Daily Influent BOD or Average BOD Load from area served (If no measured data exists, insert estimated figure)	mg/l, measured	262.54	123.6		
1.4	Total BOD Load	kg/day	686.5421	263.7624	0	0
1.5	Average Population Equivalent (@0.06kg/person/day)	p.e.	11442	4396	0	0
1.6	Estimated (existing) Non-Domestic Load	p.e.	2878	2878		
1.7	Estimated Domestic Load	p.e.	8564	1518	0	0
1.8	Occupancy Rate for the Agglomeration	pop/house	2.7	2.7		
1.9	Estimated Number of Connected Properties	houses	3172	562	0	0
1.10	Number of properties within the agglomeration when compared with CSO Data or An Post Geodirectory	houses	2669	2669		
	Section 1.3 Hydraulic Details					
1.11	Average Dry Weather Flow arriving at WWTP OR Total Average DWF in system (If no measured data exists insert estimated figure)	l/s, measured	30	10.08680556		
1.12	Estimated 3DWF	l/sec	90.00	30.26	0.00	0.00
1.13	Annual Average Peak Flow to WWTP or discharging from whole system if there is no existing WWTP	l/s, measured	111.9212963	67.24		
1.14	This Annual Average Peak as Multiples of Dry Weather Flow (Peaking Factor)	Nr	3.73	6.67	0.00	0.00
1.15	Highest Peak Flow Recorded (Insert UNKNOWN if no records exist)	l/s	Unknown	111.92		
1.16	Does this Peak Flow (multiple of DWF) cause hydraulic capacity problems within the network ?	---	No	No	Yes	Yes
1.17	Total Rainfall for Previous Year	mm	1269	891		
1.18	Comparison - Mean Annual Rainfall for the agglomeration	mm	1006.9	1006.9		
1.18.1	Define the Weather Station Used		Ballyhaise	Ballyhaise		
1.19	If Storm Water Storage is available at the Wastewater Treatment plant, what is the volume of the storm tank ?	m^3	Unknown	Unknown		
1.20	Is the capacity of the storm tank sufficient to capture and retain all overflows to the tank ?	---	Yes	Yes	No	No
1.21	Total monthly average volume of Storm Water Stored or Returned for Treatment within the Waste Water Treatment Plant	m^3 per month	Unknown	Unknown		
1.22	If the answer to 1.20 above is No, What is the estimated frequency of Overflows from the Storm Tank ? (N/A if no overflow)		N/A	N/A	1 to 2 times per month	< 1 per month
	Waste Water Works - Sewer Network Details	**Unit**	2015	2016	2017	2018
	Section 1.4 Waste Water Works - Gravity Sewer Details					
1.23	What database is used to maintain records of the sewer network		Autocad Drawings	Autocad Drawings	SUS 2002	SUS 2003
1.23.1	If other or combination of the above please describe	Describe				
1.24	Total length of sewers (use drop down menus to define whether these figures are estimated or measured)	km Estimated	13.70	13.70	0.00	0.00
1.24.1	Total length of sewers > 450mm Diameter	km Estimated	1.00	1.00		
1.24.2	Total length of sewers > 300mm but ≤ 450mm in Diameter	km Estimated	2.10	2.10		
1.24.3	Total length of sewers > 225mm but ≤ 300mm in Diameter	km Measured	1.70	1.70		
1.24.4	Total length of sewers ≤ 225mm in Diameter	km Estimated	8.90	8.90		
1.24.5	Other	km Estimated	0.00	0.00		
1.25	Pipeline Material					
1.25.1	What portion of the sewer network consists of Concrete Pipes	% Estimated	40%	40%		
1.25.2	What portion of the sewer network consists of Plastic Pipes	% Estimated	56%	56%		
1.25.3	What portion of the sewer network consists of Clay materials	% Estimated	0%	0%		
1.25.4	What portion of the sewer network consists of Brick Type Sewers	% Estimated	0%	0%		
1.25.5	What portion of the sewer network consists of Other Materials	% Estimated	4%	4%		
1.26	Total number of Storm Water Overflows	Nr	1	1		

1.27	What Screening or other mechanical devices are employed at the storm water overflows					
	SW-2 located at 284588E 302860N	Describe				
1.28	Water Quality at the receiving waters					
1.28.1	Where the receiving water is a river - indicate the EPA Biological Rating of the Receiving Water for each SWO below (Particularly if there is more than one receiving water within the agglomeration)					
	SW-2 located at 284588E 302860N	Describe	Q2-Q3	Q2-Q3		
1.28.2	Where the receiving water is a coastal water indicate the Status of the Receiving Water for each SWO below (Particularly if there is more than one receiving water within the agglomeration)					
	SW-2 located at 284588E 302860N	Describe	N/A	N/A		
1.28.3	With reference to the SWO's detailed above define if the receiving waters are sensitive in accordance with the Urban Wastewater Treatment Regulations as amended.					
	SW-2 located at 284588E 302860N	Describe	Sensitive	Sensitive		
1.28.4	With reference to the SWO's detailed above define are the receiving waters Protected Areas (designated or awaiting designation)					
	SWO No. 001 located at southern corner of WWTP site.	Designation	Not Listed	Not Listed		
1.28.5	With reference to the SWO's detailed above define do the receiving waters have any other designations.					
	SWO No. 001 located at southern corner of WWTP site.	Designation	Not Listed	Not Listed		
	Section 1.5 Waste Water Works - Pumping Stations					
1.29	Number of Pumping Stations (operated by the Local Authority)	Nr	16	16		
1.30	Total Length of Rising Mains (operated by the Local Authority)	km				
1.31	Rising Main Material					
1.31.1	What portion of the rising mains consists of ductile iron pipes	% Measured	Unknown	Unknown		
1.31.2	What portion of the rising mains consists of plastic pipes	% Measured	Unknown	Unknown		
1.31.3	What portion of the rising mains consists of other materials	% Estimated	Unknown	Unknown		
1.32	Discharge Capacity of the Pump Set (s) at normal duty point					
	At Pump Station 1 at E284666, N302947		10	10		
	At Pump Station 2 at E284348, N304094		4	4		
	At Pump Station 3 at E284662, N303734		3	3		
	At Pump Station 4 at E284215, N304790		4	4		
	At Pump Station 5 at E283965, N302717		6	6		
	At Pump Station 6 at E283659, N303129		6 and 11 (D+A=12 l/s)	6 and 11 (D+A=12 l/s)		
	At Pump Station 7 at E284765, N302953		5	5		
	At Pump Station 8 at E283717, N305053		10	10		
	At Pump Station 9 at E284543, N302877		180	180		
	At Pump Station 10 at E284230, N303922		35	35		
	At Pump Station 11 at E283822, N303863		53	53		
	At Pump Station 12 at E284680, N302404		5.5	5.5		

	At Pump Station 13 at E284984, N304086		3.5	3.5		
	At Pump Station 14 at E285826, N303016		5.5	5.5		
	At Pump Station 15 at E284578, N301801		6	6		
	At Pump Station 16 at E284831, N303627		9.5	9.5		
1.33	What percentage of the pumping stations have recorded flow data (i.e. if all pumping stations have flow meters on the rising mains then this would read 100%)	%	0.00%	0.00%		
1.34	Available Storage Capacity at Pump Stations (include pump sump and any storm water/emergency overflow tanks)					
	At Pump Station 1 at E284666, N302947	m^3	Unknown	Unknown		
	At Pump Station 2 at E284348, N304094	m^3	Unknown	Unknown		
	At Pump Station 3 at E284662, N303734	m^3	Unknown	Unknown		
	At Pump Station 4 at E284215, N304790	m^3	Unknown	Unknown		
	At Pump Station 5 at E283965, N302717	m^3	50	50		
	At Pump Station 6 at E283659, N303129	m^3	Unknown	Unknown		
	At Pump Station 7 at E284765, N302953	m^3	Unknown	Unknown		
	At Pump Station 8 at E283717, N305053	m^3	Unknown	Unknown		
	At Pump Station 9 at E284543, N302877	m^3	18	18		
	At Pump Station 10 at E284230, N303922	m^3	Unknown	Unknown		
	At Pump Station 11 at E283822, N303863	m^3	Unknown	Unknown		
	At Pump Station 12 at E284680, N302404	m^3	Unknown	Unknown		
	At Pump Station 13 at E284984, N304086	m^3	Unknown	Unknown		
	At Pump Station 14 at E285826, N303016	m^3	Unknown	Unknown		
	At Pump Station 15 at E284578, N301801	m^3	Unknown	Unknown		
	At Pump Station 16 at E284831, N303627	m^3	Unknown	Unknown		
1.35	Total Number of ***"Licenced Secondary Discharge Points and Stormwater Overflows"*** at pumping stations	Nr	0	0		
1.36	Total Number of ***"Emergency Overflow Points"*** at pumping stations	Nr	16	16		
1.37	What Screening or other mechanical devices are employed at the secondary discharge points or emergency overflows ?					
	At Pump Station 1 at E284666, N302947	Describe	None	None		
	At Pump Station 2 at E284348, N304094	Describe	None	None		
	At Pump Station 3 at E284662, N303734	Describe	None	None		
	At Pump Station 4 at E284215, N304790	Describe	None	None		
	At Pump Station 5 at E283965, N302717	Describe	None	None		
	At Pump Station 6 at E283659, N303129	Describe	None	None		
	At Pump Station 7 at E284765, N302953	Describe	None	None		
	At Pump Station 8 at E283717, N305053	Describe	None	None		
	At Pump Station 9 at E284543, N302877	Describe	None	None		
	At Pump Station 10 at E284230, N303922	Describe	None	None		

	At Pump Station 11 at E283822, N303863	Describe	None	None		
	At Pump Station 12 at E284680, N302404	Describe	None	None		
	At Pump Station 13 at E284984, N304086	Describe	None	None		
	At Pump Station 14 at E285826, N303016	Describe	None	None		
	At Pump Station 15 at E284578, N301801	Describe	None	None		
	At Pump Station 16 at E284831, N303627	Describe	None	None		
1.38	Water Quality at the receiving waters at each pumping station location					
1.38.1	Where the receiving water is a river - indicate the EPA Biological Rating of the Receiving Water for each secondary discharge point or emergency overflow at each pumping station (Particularly if there is more than one receiving water within the agglomeration)					
	At Pump Station 1 at E284666, N302947	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 2 at E284348, N304094	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 3 at E284662, N303734	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 4 at E284215, N304790	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 5 at E283965, N302717	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 6 at E283659, N303129	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 7 at E284765, N302953	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 8 at E283717, N305053	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 9 at E284543, N302877	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 10 at E284230, N303922	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 11 at E283822, N303863	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 12 at E284680, N302404	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 13 at E284984, N304086	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 14 at E285826, N303016	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 15 at E284578, N301801	Describe	Q2-Q3	Q2-Q3		
	At Pump Station 16 at E284831, N303627	Describe	Q2-Q3	Q2-Q3		
1.38.2	Where the receiving water is a coastal water indicate the Status of the Receiving Water for each secondary discharge point or emergency overflow at each pumping station (Particularly if there is more than one receiving water within the agglomeration)					
	At Pump Station 1 at E284666, N302947	Describe	N/A	N/A		
	At Pump Station 2 at E284348, N304094	Describe	N/A	N/A		
	At Pump Station 3 at E284662, N303734	Describe	N/A	N/A		
	At Pump Station 4 at E284215, N304790	Describe	N/A	N/A		
	At Pump Station 5 at E283965, N302717	Describe	N/A	N/A		
	At Pump Station 6 at E283659, N303129	Describe	N/A	N/A		
	At Pump Station 7 at E284765, N302953	Describe	N/A	N/A		
	At Pump Station 8 at E283717, N305053	Describe	N/A	N/A		
	At Pump Station 9 at E284543, N302877	Describe	N/A	N/A		
	At Pump Station 10 at E284230, N303922	Describe	N/A	N/A		

	At Pump Station 11 at E283822, N303863	Describe	N/A	N/A		
	At Pump Station 12 at E284680, N302404	Describe	N/A	N/A		
	At Pump Station 13 at E284984, N304086	Describe	N/A	N/A		
	At Pump Station 14 at E285826, N303016	Describe	N/A	N/A		
	At Pump Station 15 at E284578, N301801	Describe	N/A	N/A		
	At Pump Station 16 at E284831, N303627	Describe	N/A	N/A		
1.38.3	With reference to the pumping stations, for each secondary discharge point or emergency overflow detailed above, define if the receiving waters are sensitive in accordance with the Urban Wastewater Treatment Regulations as amended.					
	At Pump Station 1 at E284666, N302947		Sensitive	Sensitive		
	At Pump Station 2 at E284348, N304094		Sensitive	Sensitive		
	At Pump Station 3 at E284662, N303734		Sensitive	Sensitive		
	At Pump Station 4 at E284215, N304790		Sensitive	Sensitive		
	At Pump Station 5 at E283965, N302717		Sensitive	Sensitive		
	At Pump Station 6 at E283659, N303129		Sensitive	Sensitive		
	At Pump Station 7 at E284765, N302953		Sensitive	Sensitive		
	At Pump Station 8 at E283717, N305053		Sensitive	Sensitive		
	At Pump Station 9 at E284543, N302877		Sensitive	Sensitive		
	At Pump Station 10 at E284230, N303922		Sensitive	Sensitive		
	At Pump Station 11 at E283822, N303863		Sensitive	Sensitive		
	At Pump Station 12 at E284680, N302404		Sensitive	Sensitive		
	At Pump Station 13 at E284984, N304086		Sensitive	Sensitive		
	At Pump Station 14 at E285826, N303016		Sensitive	Sensitive		
	At Pump Station 15 at E284578, N301801		Sensitive	Sensitive		
	At Pump Station 16 at E284831, N303627		Sensitive	Sensitive		
1.38.4	With reference to the pumping stations, for each secondary discharge point or emergency overflow detailed above, are the receiving waters Protected Areas (designated or awaiting designation) .					
	At Pump Station 1 at E284666, N302947	Designation	No	No		
	At Pump Station 2 at E284348, N304094	Designation	No	No		
	At Pump Station 3 at E284662, N303734	Designation	No	No		
	At Pump Station 4 at E284215, N304790	Designation	No	No		
	At Pump Station 5 at E283965, N302717	Designation	No	No		
	At Pump Station 6 at E283659, N303129	Designation	No	No		
	At Pump Station 7 at E284765, N302953	Designation	No	No		
	At Pump Station 8 at E283717, N305053	Designation	No	No		
	At Pump Station 9 at E284543, N302877	Designation	No	No		
	At Pump Station 10 at E284230, N303922	Designation	No	No		
	At Pump Station 11 at E283822, N303863	Designation	No	No		

	At Pump Station 12 at E284680, N302404	Designation	No	No		
	At Pump Station 13 at E284984, N304086	Designation	No	No		
	At Pump Station 14 at E285826, N303016	Designation	No	No		
	At Pump Station 15 at E284578, N301801	Designation	No	No		
	At Pump Station 16 at E284831, N303627	Designation	No	No		
1.38.5	With reference to the pumping stations, for each secondary discharge point or emergency overflow detailed above, do the receiving waters have any other designations.					
	At Pump Station 1 at E284666, N302947	Designation	No	No		
	At Pump Station 2 at E284348, N304094	Designation	No	No		
	At Pump Station 3 at E284662, N303734	Designation	No	No		
	At Pump Station 4 at E284215, N304790	Designation	No	No		
	At Pump Station 5 at E283965, N302717	Designation	No	No		
	At Pump Station 6 at E283659, N303129	Designation	No	No		
	At Pump Station 7 at E284765, N302953	Designation	No	No		
	At Pump Station 8 at E283717, N305053	Designation	No	No		
	At Pump Station 9 at E284543, N302877	Designation	No	No		
	At Pump Station 10 at E284230, N303922	Designation	No	No		
	At Pump Station 11 at E283822, N303863	Designation	No	No		
	At Pump Station 12 at E284680, N302404	Designation	No	No		
	At Pump Station 13 at E284984, N304086	Designation	No	No		
	At Pump Station 14 at E285826, N303016	Designation	No	No		
	At Pump Station 15 at E284578, N301801	Designation	No	No		
	At Pump Station 16 at E284831, N303627	Designation	No	No		
1.39	Estimated Number of Private Pumping Stations within the agglomeration (not operated by the Local Authority)	Nr	0	0		
	Section 1.6 Reporting					
	Section 1.6.1 Reported Number of Sewer Related Complaints ('Complaint' as defined in the Discharge Licence)					
1.40	Number of Reported Complaints	Nr	3	3		
1.41	Number of Reported Complaints which have been rectified	Nr	3	3		
	Section 1.6.2 Reported/Recorded/Estimated Number of Secondary Discharges					
1.42	Number of Reported Secondary Discharges	Nr	0	0		
1.43	Number of Recorded Secondary Discharges	Nr	0	0		
1.44	Estimated Total Number of Secondary Discharges	Nr	0	0	0	0
	Section 1.6.3 Reported/Recorded/Estimated Number of Emergency Overflow Discharges from Pumping Stations					
1.45	Number of Reported Emergency Overflow Discharges	Nr	0	0		
1.46	Number of Recorded Emergency Overflow Discharges	Nr	0	0		
1.47	Estimated Total Number of Emergency Overflow Discharges	Nr	0	0	0	0
	Section 1.7 Operational Staff					
1.48	In the four boxes below, describe the extent of operation staff employed by the Local Authority to maintain and operate the sewer network and pumping stations *(The individual personnel shall not be named , only grade and level of training needs to be provided)*					

1.48.1	Caretaker 10 is responsible for the maintenance and operation of the Carrickmacross network and WWTP					
1.48.2	Caretaker operates under the supervision of a Line Manager Technician					
1.48.3	The Line Manager Technician is supervised by the Senior Executuve Engineer					
1.48.4						
	Waste Water Works - Investment Details	**Unit**	2015	2016	2017	2018
	Section 1.8 Capital Investment works carried out since most recent report (including works not included on WSIP Programme or not WSIP funded)					
1.49	Sewers Upgraded or Replaced	m	0	0		
1.50	Sewers Rehabilitated	m	0	0		
1.51	Manholes Rehabilitated	Nr	0	0		
1.52	Local Repairs	Nr	0	0		
1.53	Total Length of sewers Upgraded, Replaced or Rehabilitated	m	0	0	0	0
1.54	Pumping Stations Operated by Local Authority Upgraded or Repaired	Nr	0	0		
1.55	WWTW operated by Local Authority Upgraded or Replaced	Nr	0	0		
1.56	In the following two cells describe the actual Capital Investment undertaken in the reporting period.					
1.56.1	No work has been undertaken there were no major capital or operational changes undertaken in 2015 An Annual Statement of Measures is included in AER report 2015					
1.56.2						
	Section 1.9 Licence Specified Improvements Works					
1.57	*2015 AER, Appendix 7.3* *Advancement works at the WWTP* *Upgrading of SWO to comply with criteria outlined in DoEHLG'procedures and criteria in relation to SWO's, 1995'*					
	Section 1.10 Other Updates Since Last Report					
1.58						
1.59						

Section 2.1 Hydraulic Risk Assessment

Query	Description	Prompt	Risk Score	Short Commentary by the Local Authority	Comment or Action to be Taken
2.1	**Has a Hydraulic Performance Assessment been undertaken for the Sewer Network (e.g., Computer Model or other Engineering Design or Design Review) ?**	No	40		If the answer is **No** assess the need and cost benefit of developing a computer model or engineering design assessment of the Sewer Network and complete Query 2.12. If the answer is **Yes** proceed to Queries 2.1.1 to 2.1.4 inclusive
2.1.1	If Answer to Query 2.1 is Yes, what % of the Network is covered by the hydraulic assessment ?	N/A	0		The % coverage of the Network by the Hydraulic Assessment can be estimated by the area assessed against the area served by the Network. ENTER "N/A" IF COMPUTER MODEL or DESIGN DOES NOT EXIST. DO NOT LEAVE BLANK OR ENTER "0".
2.1.2	How many years has it been since the **completion** of the hydraulic assessment ?	N/A	0		Select N/A response if no design assessment or design exists.
2.1.3	Are the outcomes of the Hydraulic Assessment being implemented ?	N/A	0		Select N/A response if no design assessment or design exists.
2.1.4	How many years has it been since the **outcomes** of the hydraulic assessment have been implemented ?	N/A	0		Select N/A response if no hydraulic performance assessment or design exists. For onging works select "less than 5".
2.2	**Has a Dynamic Computer Model been used to Assess the Hydraulic Performance of the Sewer Network ?**	No	10		Computer Model means a Hydroworks/Infoworks Model, Micro-Drainage Model or equivalent.
2.3	**Has a Manhole Survey been undertaken in accordance with WRc Documentation "Model Contract Document for Manhole Location Surveys and the Production of Record Maps" ?**	No	10		If the answer is **No** assess the need and cost benefit of undertaking a Manhole Survey and complete Query 2.12. If the answer is **Yes** proceed to Query 2.2.1
2.3.1	If yes, how many years has it been since the survey was undertaken or updated?	N/A	0		Select N/A if no Manhole Survey has been undertaken. Enter N/A value for Confidence Grade if Prompt Box is "N/A"
2.4	**Has a Flow Survey been undertaken in accordance with WRc Documentation "A Guide to Short Term Flow Surveys of Sewer Systems" and "Contract Documents for Short Term Sewer Flows" ?**	No	20		If the answer is **No** assess the need and cost benefit of undertaking a Flow Monitoring Survey and complete Query 2.12. . If answer is **Yes** Proceed to Query 2.5
2.5	**What was this Flow Survey Information Used for ?**				
2.5.1	To Determine the extent of Problematic Sewer Catchments	N/A	0		Select N/A if no Flow Survey has been undertaken.
2.5.2	To Verify a Computer or Mathematical Model of the Network	N/A	0		Select N/A if no Flow Survey has been undertaken.
2.6	**Have Performance Criteria been developed to determine the short, medium or long term capacity of the sewer network ?**	No	10		If the answer is **No** assess the Future Needs of the Sewer Network and complete Query 2.12. If the answer is **Yes** proceed to Query 2.8
2.7	**How many flood events resulting from surcharge in the network have occurred in the past 3 years?**	1 to 3	5		Flood events in this context means water/sewage backing up from the Network causing flooding of properties or causing disruption of traffic
2.8	**Are there deficiencies in performance criteria within the sewer network ?**	No	0		If the answer is **No**, Proceed to Query 2.10 and complete Query 2.12. If the answer is **Yes** proceed to Query 2.9
2.9	**Have the causes of these deficiencies in the Performance Criteria been identified and rectified ?**	No	10		If the answer is **No**, consider further examination of the hydraulic model (if available) and complete Query 2.12. If the answer is **Yes** proceed to Query 2.10
2.10	**Can the Hydraulic Assessment (defined in Query 2.1 above) be used to determine the benefit of reducing the contributory Impermeable Areas or extent of surface water contributions**	No	10		If the answer is **No**, consider further development of the Hydraulic Assessment (or model if available) and complete Query 2.12. If the answer is **Yes** proceed to Query 2.11
2.11	**Has an Impermeable Area Survey been carried out for the agglomeration or parts of the agglomeration ?**	No	10		If the answer is **No**, consider the need and cost benefit of undertaking an Impermeable Survey for parts of the agglomeration which are under hydraulic pressure and complete Query 2.12. .
	Total Risk Assessment Score (RAS)		**125**		
2.12	**Prepare Assessment of Needs & Sewer Upgrade Implementation Plan**	In the AER Attach Assessment of Needs and Rehabilitation Implementation Plan as separate documents			
2.13	In the AER provide Summary of Proposed Works or Direction to be taken to improve hydraulic efficiency				

Section 3.1 Environmental Risk Assessment					
Query	**Description**	**Prompt**	**Risk Score**	**Short Commentary by the Local Authority**	**Comment or Action to be Taken**
3.1	What Environmental or Discharge Quality Data is available with regard to the sewer network ?	largely anecdotal	20		Select N/A if no discharges, secondary discharges or overflows from network; if discharges do exist complete Query 3.12
3.1.1	Do trade effluents discharge to the sewer network?	Yes	20		If the answer is **No**, proceed to Query 3.1.2. If the answer is **Yes**, Proceed to Query 3.2
3.1.2	Are there Storm Water Overflows within the network ?	Yes	20		If the answer is **No**, proceed to Query 3.1.3. If the answer is **Yes,** Proceed to Query 3.3
3.1.3	Are there Secondary Discharges within the network (excluding Emergency Overflows at Pump Stations)?	No	0		If the answer is **No**, proceed to Query 3.1.4.
3.1.4	Is there any evidence that exfiltration is occurring from the network ?	No	0		If the answer is **No**, does all wastewater enter a wastewater treatment plant (insert summary details in the AER)? If **Yes**, Proceed to Query 3.6
3.2	If Answer to Query 3.1.1 is "Yes", what % of trade effluents have a licence to Discharge to the Public Sewer ?	>90%	0		Select N/A if answer to Query 3.1.1 is **No**. If not all trade effleunts are licenced, Local Authority should consider issuing and controlling such discharges under the appropriate Legislation.
3.2.1	Are all licenced trade Discharges compliant with their relevant licence and associated conditions	Yes	0		Answer N/A if none of the trade effluents are licenced. Answer No if this information is unknown. If the answer is **Unknown** or **No**, consider issuing a direction to the relevant Licencee. If the answer is **Yes,** no further action is needed.
3.2.2	If Answer to Query 3.2.1 is "No", state what % of Trade Discharges are NOT compliant with their relevant licence and associated conditions (where that non-compliance led to enforcement action)	N/A	0		Select **N/A** if answer to Query 3.2.1 is Yes. If N/A is selected as answer to Query 3.2.2
3.3	In accordance with the DoEHLG paper "Procedures & Criteria in relation to Storm Water Overflows", what % of storm water overflows in the system have been classified for their significance?	<25%	50	Advance works of WWTP to inlcude upgrading of SWO to comply with criteria outlined in DoEHLG'procedures and criteria in relation to SWO's, 1995'	If the answer is **No,** consider a review of each discharge within the sewer network complete and Query 3.11. If the answer is **Yes**, proceed to Query 3. 6
3.4	Have samples from any Secondary Discharges within the system been analysed ?	N/A	0		Select N/A if no secondary discharges in system. If the answer to Query 3.4 is **No**, consider examining the quality of each secondary discharge within the sewer network complete Query 3.11. If the answer is **Yes**, proceed to Query
3.5	What percentage of discharges from the system are known to cause environmental pollution of the receiving waters ?	None	0		If the answer is greater than 50% then detail, in the AER, the Improvement Programme necessary to reduce this percentage.
3.6	In relation to possible exfiltration has a risk analysis of ground water contamination or pollution been undertaken ?	No	20		Select N/A if answer to Query 3.1.4 is NO. If the answer is **No**, consider undertaking ground water risk analysis and complete Query 3.12 If the answer is **Yes**, proceed to Query 3.6
3.6.1	If Answer to Query 3.6 is "Yes", have any groundwater aquifers been identified in the area of the Network and/or Discharge Points?	No	0		Select **N/A** if no risk analysis of groundwater contamination has been undertaken.
3.6.2	If Answer to Query 3.6.1 is "Yes", state the classification of groundwater aquifer identified in the area?	N/A	0		Select **N/A** if no risk analysis of groundwater contamination has been undertaken.
3.6.3	In relation to Query 3.6.1, is the aquifer used as a source for Public, Private or Group Water Supply Schemes?	N/A	0		Select **N/A** if no risk analysis of groundwater contamination has been undertaken.
3.7	Has an Impact Assessment of each Storm Water Overflow been undertaken in accordance with the DoEHLG paper "Procedures & Criteria in relation to Storm Water Overflows" including setting performance criteria?	No	40		If the answer is **No**, consider assessing the risk category of the receiving waters. If the answer is **Yes**, proceed to Query 3.8 and provide summary details of the assessment in the AER.
3.8	What percentage of storm water overflows comply with the performance criteria referred to in Query 3.7?	N/A	0		Select N/A if answer to Query 3.7 is **No** or if there are no SWOs in system. **(Risk Score is locked at 0 if no SWOs in system is stated in Agglomeration Details)**
3.9	Have the causes of these Capacity Deficiencies (storm water overflows & Secondary Discharges) been identified ?	No	15		Select N/A if answer to Query 3.7 is NO or if there are no SWOs in system. If the answer to Query 3.9 is **No**, consider further examination of the environmental model or assimilative model
		Total Risk Assessment Score (RAS)	**185**		
3.10	Prepare Assessment of Needs & Sewer Upgrade Implementation Plan	In the AER Attach Assessment of Needs and Rehabilitation Implementation Plan as separate documents			
3.11	Provide Summary Details (in the AER) of records upstream and downstream of licenced discharges with regard to Environmental Performance of the network. These details can be included as part of the AER submitted for the agglomeration.				

Section 4.1 Structural Risk Assessment

Query	Description	Prompt	Risk Score	Short Commentary by the Local Authority	Comment or Action to be Taken
4.1	Has a CCTV Survey been undertaken in accordance with WRc Documentation "Model Contract Document for Sewer Condition Inspections" and "Manual of Sewer Condition Classification" ?	No	10		If the answer is **No** assess the need and benefit of undertaking CCTV Survey. If **Yes** Proceed to Query 4.2
4.1.1	How many years has it been since the **completion** of the CCTV Survey?	N/A	0		If no CCTV has been undertaken, select "N/A" response
4.2	What was this CCTV Survey Information Used for?	N/A	10		Select N/A if answer to Query 4.1 is NO.
4.3	Has the CCTV Survey been used to Assess the Structural Condition of the Sewer Network or targeted sections of the Sewer Network?	No	5		If no CCTV has been undertaken, select "No" response. If the answer is **No** assess the need and benefit of undertaking an assessment of the Structural Condition of the Sewer Network. If the answer is **Yes** proceed to Q
4.4	Have Performance Criteria been developed to determine the short, medium or long term structural condition of the sewer network ?	No	5		If the answer is **No**, enter "unknown" in response to Queries 4.4.1 to 4.4.5; consider assessing the Future Needs of the Sewer Network. If the answer is **Yes** proceed to Queries 4
4.4.1	What % of the Total Sewer Length contains Collapsed or Imminent Collapse of Sewers (Grade 5)	unknown	30		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 5 collapse, include the total length of that sewer in calcuating the %. If information is not available type "Unknown" into Prompt Box
4.4.2	What % of Total Sewer Length contains Sewers Likely to Collapse (Grade 4)	unknown	25		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 4 condition, include the total length of that sewer in calcuating the %. If information is not available type "Unknown" into Prompt Box
4.4.3	What % of Total Sewer Length contains sewers with Further Possible Deterioration (Grade 3)	unknown	10		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 3 deterioration, include the total length of that sewer in calcuating the %. If information is not available type "Unknown" into Prompt Box
4.4.4	What % of Total Sewer Length contains sewers with Minimal Collapse (Grade 2)	unknown	5		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 2 feature, include the total length of that sewer in calcuating the %. If information is not available type "Unknown" into Prompt Box
4.4.5	What % of Total Sewer Length contains sewers of Acceptable Structural Condition (Grade 1)	unknown	5		Insert Percentage of Overall Network Length. If information is not available type "Unknown" into Prompt Box
If all % lengths are known, Check Total Length = 100%			**75**		If answers to Queries 4.4.1, 4.4.2 or 4.4.3 are above a set level, the RAS for Query 4 is automitically set at the maximum of 140.
4.5	What % of the deficiencies, as detailed in Items 4.4.1, 4.4.2 and 4.4.3, have been rectified ?	N/A	35		Select N/A if answer to Query 4.4 is **No**. If the answer is **No**, Proceed to Query 4.6 If the answer is **Yes**, what monitoring is in place to ensure continued acceptance of structural condition? Proceed to Query 4.7
4.6	Have the causes of the Structural Deficiencies (Grades 3, 4 and 5) been identified or is there a Preventative Maintenance Programme in place?	N/A	0		If the answer is **No**, consider further examination of the sewer network, the structural loading conditions, gradients and possible H_2S Formation. If Yes completed Query 4.7
		Total Risk Assessment Score (RAS)	**140**		

4.7	Prepare Assessment of Needs & Sewer Rehabilitation Implementation Plan	In the AER Attach Assessment of Needs and Rehabilitation Implementation Plan as separate documents

Section 5.1 O&M Risk Assessment

Query	Description	Prompt	Risk Score	Short Commentary by the Local Authority	Comment or Action to be Taken
5.1	Are complaints of an environmental nature recorded and held in a central database?	Yes	0		Consider setting up Central Database for Complaints
5.2	Is there an emergency response procedure in place?	No	20		Consider setting up target response times for dealing with Complaints
5.3	What has been the highest frequency of flooding in the network due to hydraulic inadequacy, over the past 5 years?	Twice/yr	8		Refers to flooding from the Network only, not natural flooding from rivers/streams/high tides. Select the highest number of events in any 12 month period.
5.4	What has been the highest frequency of flooding in the network due to operational causes over the past 5 years?	None	0		Refers to flooding from the Network only, not natural flooding from rivers/streams/high tides. Select the highest number of events in any 12 month period.
5.5	What has been the highest frequency of surcharging of critical sewers in the network, over the past 5 years?	Twice/yr	4		Select the highest number of events in any 12 month period.
5.6	What has been the highest frequency of reportable incidents in the network, over the past 5 years?	Twice/yr	4		Select the highest number of events in any 12 month period.
5.7	What has been the highest frequency of reportable incidents due to discharges, for whatever reason, from Pumping Station Emergency Overflows in the network, over the past 5 years?	None	0		Select the highest number of events at any given Pumping Station in any 12 month period.
5.8	What has been the highest frequency of blockages in sewers in the network over the past 5 years?	unknown	20		Select the highest number of events per km of sewer network in any 12 month period.
5.9	What has been the highest frequency of collapses in sewers in the network over the past 5 years?	None	0		Select the highest number of events in any 12 month period.
5.10	What has been the highest frequency of bursts in rising mains in the network over the past 5 years?	None	0		Select the highest number of events in any 12 month period.
	Total Risk Assessment Score (RAS)		**56**		

5.11	Prepare Up Dated Operational and Maintenance Plan	

Section 6.1 Summary of Risk Assessment Scores

Element	Risk Assessment Score	Risk Category	% Risk Score	Maximum Risk Score
Section 2.1 Hydraulic Risk Assessment	125	High Risk	83%	150
Section 3.1 Environmental Risk Assessment	185	Low Risk	37%	500
Section 4.1 Structural Risk Assessment	140	High Risk	93%	150
Section 5.1 O&M Risk Assessment	56	Low Risk	28%	200
Total RAS for Network	506	High Risk	51%	1000

If the total RAS is greater than 750, or if any of the individual RASs are greater than 75% of the Maximum Available Score, the Risk category for the Network is graded "High Risk"

Appendix 7.4 Storm water overflow assessment

Storm Water Overflow Assessment

Agglomeration Name:	**Carrickmacross**
Licence Register No.	**D0062-01**

Table of Contents

1 Introduction

This report has been prepared for D0062-01, Carrickmacross, in County Monaghan in accordance with the requirements of Condition 4.12 of the wastewater discharge licence for the agglomeration. This report identifies storm water overflows within the agglomeration and assesses the compliance of the storm water overflows with the criteria set out in the DoEHLG document on *'Procedures and Criteria in Relation to Storm Water Overflows', 1995.*

There is 1 Nr. SWO within the agglomeration. This is listed in Table 1.

Table 1: Storm Water Overflows in the Agglomeration

Licence Code	Discharge Location		Receiving Water Name and WFD Code	WFD Status of Receiving Water	Other designation of receiving water
	Easting	Northing			
SW-2	284588	302860	River Proules IE_NB_06P010300	Poor	Sensitive area (from AER 2013)

A storm water overflow assessment is required to comply with the requirements of the wastewater discharge licence condition as detailed below.

Condition 4.12 - Storm Water Overflows

4.12.1 *The licensee shall, prior to the date for submission of the second AER (required under Condition 6.8), carry out an investigation for the identification and assessment of storm water overflows. A report on the storm water overflows shall be submitted to the Agency as part of the second AER. The assessment shall include a determination of compliance with the criteria for storm water overflows, as set out in the DoEHLG Procedures and Criteria in Relation to Storm Water Overflows', 1995, and any other guidance as may be specified by the Agency.*

4.12.2 *The licensee shall carry out an assessment of storm water overflows at least once every three years thereafter and report to the Agency on each occasion as part of the AER. The assessment shall include a determination of compliance with the criteria for storm water overflows, as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995, the Groundwater Directive (2006/11 UEC) having regard to the European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S 1. No 9 of 2010), as applicable, and any other guidance as may be specified by the Agency. The licensee shall maintain a written record of all assessments and remedial measures arising from the assessment.*

2 Storm Water Overflow Assessment

2.1 Description of SWOs

The storm water overflow (SWO) is located adjacent the waste water treatment plant (WWTP) at the inlet works. There is a flow meter installed, however, the flow meter is faulty and recording inaccurate readings. The WWTP has a 450m^3 storm water holding tank with an emergency overflow into the River Proules. According to the caretaker of the WWTP:

- No complaints are received in relation to pollution.
- The SWO does not operate in dry weather flow conditions.

Photo 1 – SW-2 at the inlet works.

Photo 2 – 450m^3 storm water holding tank

2.2 Assessment of Operating Criteria of SWOs

The following criteria for each SWO on the network have been examined in accordance with the assessment criteria set out in *Procedures and Criteria in Relation to Storm Water Overflows* in order to determine possible capacity constraints.

1. Does the SWO cause significant visual or aesthetic impact and public complaints
2. Does the SWO cause deterioration in water quality in the receiving water (i.e. is there a deterioration in ecological quality status attributable to the SWO)
3. Does the SWO gives rise to failure in meeting the requirements of national regulations on foot of EU Directives (e.g. bathing water quality standards, shellfish water quality standards, Water Framework Directive status etc.),
4. Does the SWO operate in dry weather.

Table 2: Assessment of Operating Criteria

CSO Ref	Causes significant visual or aesthetic impact and public complaints.	Causes deterioration in water quality in the receiving water	Gives rise to failure in meeting the requirements of national Regulations on foot of EU Directives.	Operates in dry weather	Compliant / Non-Compliant
SW-2	No	Unknown	Unknown	No	Compliant

2.3 Assessment of Design Criteria of SWOs

2.3.1 Compliance with Formula A

As SW-2 is located at the inlet to the WWTP its compliance has been assessed in accordance with the Irish Water inlet works specification. In accordance with the specification an inlet works and storm tank must be provided at all WWTPs with a design loading of greater than 500PE. Inlet works are to be designed for a hydraulic loading equivalent to 'Formula A' and a storm tank is sized to store Formula A less the hydraulic capacity of the WWTP for two hours.

SW-2 has therefore been assessed under these criteria as outlined below.

Formula A is used in the *Procedures and Criteria in Relation to Storm Water Overflows* as follows:-

Formula A = DWF + 1.36P + 2E (m^3/day)

P = design domestic population contributing to SWO (to be estimated)

E = design industrial effluent flow (estimated to be 20% of domestic PE unless otherwise by LA)

*DWF = Dry weather flow m^3/day (dry weather flow of total PE, based on **0.175m^3**/PE/day)*

According to the Annual Environmental Report the design loading for the Carrickmacross agglomeration was 12,150PE. The current loading for the plant is 10,034PE.

Tank versus Design Loading

Total Design PE = 12,150PE

E (Non-domestic load) = 12,150PE * 20% = 2430PE

P (Domestic) = 12,150PE – 2430PE = 9720PE

DWF = 12,150PE * 0.175 m^3/PE/day = 2,126.25 m^3/day

Formula A (Design) = 2126 m^3/day + 1.36(9720) + 2(2430)
= 20,205.20 m^3/day

Design DWF = 2758 m^3/day

Design 3DWF = 8274 m^3/day

Formula A (Design) – 3DWF = 20,205.20 - 8274 m^3/day
= 11,931.20 m^3/day

Storm tank storage requirements = 994.26 m^3 for 2 hours storage

Storm storage vs storm inflow = 450 m^3 / 994.26 m^3
= 0.45 times the required storage

2.3.2 Significance of Spill

Monitoring information in relation to frequency and duration of overflows is not available.

The significance of overflows to inland freshwaters has been assessed as follows:

Low Significance: >8:1 Dilutions in Receiving water (95%ile river flow/ average SWO DWF) No interaction with other discharges
Medium Significance - only if all these criteria apply. Dilution < 8 : 1 Limited or no interaction with other discharges > 2,000 population equivalent Cyprinid fishery
High Significance - only if all these criteria apply. Dilution < 2 : 1 Interaction with other discharges > 10,000 population equivalent Cyprinid or salmonid fishery

Table 3: Assessment of Significance

CSO Ref	Dilution	PE Range	Designation of Receiving Water	Significance
SW-2	1.48 95%ile flow = 0.037m^3/s SWO DWF = 0.025m^3/s	> 10,000	Sensitive area (from AER 2013)	Medium

2.4 Assessment of Requirement for Storage

The necessity for a storm tank within the sewer network has been assessed based on available dilution as detailed in Table 3 (from Procedures and Criteria in Relation to Storm Water Overflows) included as Table 4 below. The requirement for a storm tank at a wastewater treatment plant shall be based on an overflow setting of 3 DWF.

Table 4 – SDD Method Recommended Storage at Overflows[1]

Dilution Factor[2]	Overflow Setting	Storage Tank
> 8	Formula A	None
> 6	Formula A + 455 P or Formula A	None 40 l/PE
> 4	Formula A	40 l/PE
> 2	Formula A	80 l/PE
> 1	Formula A	120 l/PE

1. Table 3 extracted from Procedures and Criteria in Relation to Storm Water Overflows
2. Dilution factor = 95%ile river flow / average DWF

Table 5 – Stormwater Storage within Agglomeration

CSO Ref	Dilution Factor[1]	Required Overflow Setting (l/s)	Actual Overflow Setting (l/s)	Required Storage Tank Volume (m^3)	Actual Storage Tank Volume (m^3)	Compliant / Non-Compliant
SW-2	>1	233.86	N/A	994.26	450	Non-Compliant

2. Dilution factor = 95%ile river flow / average DWF

3 Remedial Measures to Ensure Compliance

3.1 Specified Improvement and Improvement Programme Works

The specified improvement works included in the licence for the agglomeration and improvement programme items identified in licence reports are listed in Table 5 below.

Table 5 – Specified Improvement Works

Specified Improvement / Improvement Programme Reference	**Description**	**Current Status**	**License Reference:**
	Upgrading of Storm Water Overflows to comply with the criteria outlined in DoECLG "Procedures and Criteria in relation to Storm Water Overflows, 1995"	Completed	Schedule C3
	Any other overflows notified in writing to the Agency	Completed	Schedule C3

3.2 Additional Measures

The additional measures required, identified in this report are as follows:

- Consider providing additional storm water storage at the plant.
- Consider installing new flow meters in order to measure the frequency and volume of flow through the SWO at the inlet channel.