

Annual Environmental Report 2016

Agglomeration Name:	Castleblayney
Licence Register No.	D0205-01



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Section 1. Executive Summary and Introduction to the 2016 AER

1.1 Summary Report on 2016

This Annual Environmental Report has been prepared for **D0205-01, Castleblayney**, 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**

The agglomeration is served by a wastewater treatment plant with a Plant Capacity PE of 12960. The treatment process includes the following:-

- Preliminary Treatment (Screens and Grit Removal)
- Secondary Treatment (Aeration)
- Nutrient Removal (Chemical Dosing for phosphorus removal)

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

The following parameters exceeded the emission limit values in 2016:-

- BOD (mg/l)
- Total P (mg/l)
- Ammonia N (mg/l)

1,134,580 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 County Meath (SSF_COR_MH_13_001_02) where it is lime stabilised prior to landspreading.

There were no 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.	861	1364	408	9	65.8	5896	19,502
Annual Mean	225.77	535.01	251.03	4.27	32.20	1913.04	9853.23

Other inputs in the form of sludge/leachate are added to the WWTP after the influent monitoring point and are therefore not represented by influent monitoring. 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 greater 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)	Ammonia as N (mg/l)	pH
WWDL ELV (Schedule A) where applicable	10.00	125.00	35.00	0.30	0.50	6 to 9
ELV with Condition 2 Interpretation included	20.00	250.00	87.50	0.36	0.60	No allowable exceedances
Interim % Reduction (Schedule A)						
Number of sample results	12	12	12	12	12	12
Number of sample results above WWDL ELV	3	0	0	5	9	0
Number of sample results above ELV with Condition 2 Interpretation	1	0	0	5	9	0
Annual Mean (for parameters where a mean ELV applies)						
Overall Compliance (Pass/Fail)	Fail	Pass	Pass	Fail	Fail	Pass

Table 2.2 - Effluent Monitoring.....Continued

2.2.1 Effluent Monitoring Summary	Comment
WWDL ELV (Schedule A) where applicable	Note new ELV's for BOD , Total P and Ammonia came into effect on the 01/01/16
ELV with Condition 2 Interpretation included	
Interim % Reduction (Schedule A)	
Number of sample results	
Number of sample results above WWDL ELV	
Number of sample results above ELV with Condition 2 Interpretation	
Annual Mean (for parameters where a mean ELV applies)	
Overall Compliance (Pass/Fail)	

Significance of results

The WWTP was non-compliant with the ELV's set in the wastewater discharge licence. There were 11 samples non-compliant with the ELVs in relation to BOD (mg/l), Total P (mg/l), Ammonia N (mg/l). The non-compliance is due to 05/01/2016 ammonia 1.6mg/l n, total p 0.4mg/l p

10/02/2016 ammonia 4.8mg/l n

08/03/2016 ammonia 11mg/l n

28/04/2016 ammonia 23mg/l n bod 13mg/l, total p 1.05mg/l p

11/05/2016 ammonia 24mg/l n, total p 0.55mg/l p

13/06/2016 ammonia 25mg/l n, bod 19mg/l

06/07/2016 ammonia 4mg/l n, bod 22mg/l

03/08/2016 ammonia 12mg/l n
05/09/2016 ammonia 1.6 mg/l n
04/10/2016 total p 0.88 mg/l n
02/11/2016 total p 0.65 mg/l n
06/12/2016 sample compliant

The impact on receiving waters is assessed further in Section 2.3.

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	282870E 320196N	LS06000940280009 0					Poor
Downstream Monitoring Point	282870E 320196N	LS060009402800080	No	No	No	No	Poor

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

Significance of results

- The WWTP was non-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.
- 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 < 100000

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)	215,786	511,358	239,927	4,080	30,771
Effluent mass emission (kg/year)	7,548	34,263	9,859	399	11,421
% Efficiency (% reduction of influent load)	97%	93%	96%	90%	63%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/day)	2,942
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/day)	8,826
Hydraulic Capacity – Current loading (m3/day)	1,913
Hydraulic Capacity – Remaining (m3/day)	6,913
Organic Capacity - Design / As Constructed (PE)	12,960
Organic Capacity - Current loading (PE)	9,853
Organic Capacity – Remaining (PE)	3,107
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%	
Load collected in the agglomerations that enters treatment plant	Unknown	
Load collected in the sewer network but discharges without treatment (includes SWO, EO, and any discharges that are not treated)	Unknown	

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
15	Investigation Sewage Flooding _ Below Ground Waste Water	0	15

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)
INCI009648	Outright fail for Ammonia on 05/01/16 1.6mg/l N (ELV 0.5mg/l)	WWTP upgrade required to meet ELV	3	Yes	Upgrade of the WWTP due to commence in 2017.	IFI	Yes	No
INCI009885	Double pump trip at Muckno Road PS, uncontrolled release to Lough Muckno	Emergency overflow caused by pump failure	1	No	Pumps put back on power. Ensure alarms are attended to as soon as possible.	IFI	Yes	Yes
INCI010131	Failures to meet ELV's for Ammonia Total P and BOD as follows: 05/01/2016 Ammonia 1.6mg/l N, Total P 0.4mg/l P 10/02/2016 Ammonia 4.8mg/l N 08/03/2016	Plant/Equipment Breakdown at WWTP	8		Failure of aerators. Existing aerators were lowered in tanks to maximise aeration. Plant was reseeded with activated sludge. A new additional aerator was installed on the 02/08/16. Problems with ragging of this more efficient aerator occurred. A screen was	IFI	Yes	No

	<p>Ammonia 11mg/l N 28/04/2016 Ammonia 23mg/l N BOD 13mg/l , Total P 1.05mg/l P 11/05/2016 Ammonia 24mg/l N, Total P 0.55mg/l P 13/06/2016 Ammonia 25mg/l N, BOD 19mg/l 06/07/2016 Ammonia 4mg/l N, BOD 22mg/l 03/08/2016 Ammonia 12mg/l N 05/09/2016 Ammonia 1.6 mg/l N 04/10/2016 Total P 0.88 mg/l P 02/11/2016 Total P 0.65 mg/l P</p>				<p>constructed around the aerator to prevent ragging on the 31/08/16, aeration conditions improved as a result of this. Ferric dosing was reviewed and increased onsite in October and again in November dosing is not load proportional.</p>			
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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	12
Number of Incidents reported to the EPA via EDEN in 2016	12
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	33	0	0.00%	Yes	Yes	No
Industrial / Commercial Sludge	0	0	0.00%	No	Yes	No
Landfill Leachate (delivered by tanker)	0	0	0.00%	No	Yes	No
Landfill Leachate (delivered by sewer network)	0	0	0.00%	No	Yes	No
Other (Imports from other Monaghan WWTPs (COA sites Annyalla and Oram specifically))	331	4	0.04%	Yes	Yes	No

Section 4. Infrastructure Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

The Stormwater Overflow Assessment was submitted previously in AER 2015. 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
SW02	282499E 319728N	yes	Low	Non Compliant	Unknown	Unknown	Unknown	Estimated
SW03	282942E 319957N	yes	High	Compliant	Unknown	Unknown	Unknown	Measured
SW05	282401E 320112N	no	Low	Non Compliant	Unknown	Unknown	Unknown	Estimated
SW06	282841E 319528N	no	Low	Non Compliant	Unknown	Unknown	Unknown	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)?	Unknown
How much sewage was discharged via SWOs in the agglomeration in the year (p.e.)?	Unknown
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2013?	Unknown
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	No

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?	No

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

The Improvement Programme report included in Appendix 7.1 addresses the **Specified Improvement Programmes** as detailed in Schedules A3 and C of the WWDL. It should detail other improvements identified through assessments required under the licence.

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
Wastewater treatment plant and ancillary works	C	31/12/2015	Yes	At planning stage	0%	Q1 2017 out to tender Q3 2017 contractor on site	Castleblayney sewage scheme Phase 1 WWTP is on the Irish Water capital Investment programme ,due to commence 2017
Upgrading of Storm Overflows to comply with the criteria outlined in the DoEHLG "Procedures and Criteria in relation to Storm Water Overflows 1995"	C SWO assessment (Condition 4 and 5.2)	31/12/2015	Yes	Not started	0%	Unknown	Works Indicated in the 2012 Storm Water Overflows assessment are complete. The 2015 Assessment indicates that more works are required. The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.

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
Critical Asset Programme	Flow Monitoring and Sampling MN	Improved Operational Control	100%		Four mag meters installed in 2016
Drinking Water Point Risk Assessment (condition 4)	Assessment to investigate the relocation of primary discharge point	Drinking Water Point Risk Assessment (condition 4)	0%	Unknown	
SWO assessment (Condition 4 & 5.2)	Upgrade of SWO to comply with DOEHLG criteria	SWO assessment (Condition 4 & 5.2)			<p>2012 assessment works are complete</p> <ul style="list-style-type: none"> -Park road CSO was decommissioned -Shercock rd CSO weir walls were raised <p>Main St RAB (SW2) cso 6mm copa sac screen was added to capture influent</p> <ul style="list-style-type: none"> - Monaghan road SCO was decommissioned. <p>The 2015 assessment indicates that more works are required.</p> <p>The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.</p>

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	110	Appendix 7.3 AER 2016		
Environmental Risk Assessment Score	Low	127	Appendix 7.3 AER 2016		
Structural Risk Assessment Score	Medium	78	Appendix 7.3 AER 2016		
Operation & Maintenance Risk Assessment Score	Low	60	Appendix 7.3 AER 2016		
Overall Risk Score for the agglomeration	High	375	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 2012
Drinking Water Abstraction Point Risk Assessment	Required	No	No	AER 2013
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	No
Drinking Water Abstraction Point Risk Assessment	Yes	Assessment to investigate options to relocate the primary discharge
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 2012 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)	No
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	No
Status of any improvement measures required	N/A

5.2 Drinking Water Abstraction Point Risk Assessment

The Drinking Water Risk Assessment was submitted previously in AER 2013 and is summarised below:

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	No
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	L - M
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	No
Recommendations	Assessment to investigate options to relocate the primary discharge
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	Unknown

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	Stormwater overflow SW06 was identified as part of the SWO assessment 2015. SW05 was identified in previous AER but no technical amendment was specifically requested.
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)	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	No
Ensure the following reports are included	N/A

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: 10/02/2017

Elizabeth Arnett
Head of Corporate Affairs and Environmental Regulation

Section 7. Appendices

Appendix 7.1 Statement of Measures

1	Issue	Meet lower Phosphorus ELV from 1st Jan 2016.
	Mitigation Measure	Commissioning of ferric dosing on site.
	Status	Complete
2	Issue	Meet new Ammonia ELV from 1st Jan 2016
	Mitigation Measure	Upgrade of WWTP
	Status	On IW capital investment programme 2017.
3	Issue	No record of SWO activating or measurement of flows.
	Mitigation Measure	Install SWO measurement/recorder device to measure record no of times it activates
	Status	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition
4	Issue	Improved Operational Control
	Mitigation Measure	Flow Monitoring At WWTP
	Status	Four mag meters installed in 2016
5	Issue	Upgrading of Storm Overflows to comply with the criteria outlined in the DoEHLG "Procedures and criteria in relation to Storm Water Overflows"
	Mitigation Measure	Upgrading of Storm Overflows
	Status	Works indicated in 2012 SWO assessment are complete. The 2015 SWO assessment indicated that more works are required. The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition

Specified Improvement Programme

As per condition 5 of the licence, 'a programme of infrastructural improvements to maximise the efficiency and effectiveness of the licence is required as part of the second AER'.

This report was submitted with the second AER for Castleblayney in 2012. An update on this report is provided as follows:

Under Schedule C.1 of the licence, 'Specified Improvement Programme', 'waste water treatment plant and ancillary works' are specified with completion date specified of 31st December 2015. In the initial discharge licence application in 2008, a large expansion of the Castleblayney WWTP was outlined to upgrade the design of the plant to 28,000 P.E. including major infrastructural works. However, since then, An Bord Pleanala have declared an upper limit of this expansion to the WWTP of 14,000 P.E. and only approved Stage 1 of the proposed works outlined as follows:

- Inlet pumping station
- 1 no. storm tank, 1,314m³ in volume
- Tertiary treatment units
- Picket fence thickener and
- New sludge dewatering building

Phase 1 proposed upgrading works for Castleblayney WWTP is on the Irish Water Capital Investment Programme and due to commence in 2017.

Under schedule C.3 of the licence, upgrading of the Storm Water Overflows to comply with the criteria outlined in the DOEHLG *'Procedures and Criteria in relation to Storm Water Overflows, 1995'* with completion date of 31st December 2015 specified.

Works Indicated in the 2012 Storm Water Overflows assessment are complete. The 2015 Assessment indicates that more works are required. The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.

Under condition 5.2 (a) of the licence, the programme of infrastructural improvements shall include an assessment of the waste water treatment plant having regard to the effectiveness of the treatment provided by reference to the following:

(i) The existing level of treatment, capacity of treatment plant and associated equipment:

The existing level of treatment at the plant is secondary with dosing facilities on site for phosphorus reduction. A new ammonia ELV limit of 0.5mg/l and total phosphorus limit of 0.3mg/l for the effluent came into effect on the 1st of January 2016. There were 11 incidents involving breaches of ELV's at Castleblayney in 2016. Details of these incidents are outlined in table 3.5 of the AER. A new submerged aerator was installed at the plant in August 2016 in order to improve aeration conditions and reduce ammonia levels in the final effluent.

(ii) The emission limit values specified in Schedule A: Discharges, of this licence:

The Castleblayney Sewage Scheme Phase 1 wwtp upgrade is on the Irish Water Capital Investment Programme and due to commence in 2017.

(iii) The designations of the receiving water body:

The outfall from the Castleblayney Waste Water Plant discharges to the Lough Muckno Lake via a small stream at National Grid Reference 283041E 319961N in the Town land of Drumillard Little, Castleblayney, Co Monaghan.

Lough Muckno is identified as 'sensitive' water in terms of the Urban Waste Water Treatment Regulations 2001. It is not designated Salmonid water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988) nor designated as an SPA, SAC. It is a proposed Natural Heritage Area (pNHA). Lough Muckno is in the Neagh Bann river basin district with overall status classified as 'Bad' and at risk of not meeting good status by 2015, with overall objective to restore its status by 2021. The 'point risk source' and potential for impact from the Castleblayney WWTP discharge on the lake is categorised as '2b – not at risk' and the combined storm overflows (CSOs) categorised as '2b – not at risk', however the overall objectives relating to this water body is to upgrade WWTP discharges by 2021 (ref: WFD Ireland maps/website & reports.) The new lower ELV limits specified for the parameters BOD, ammonia and Total Phosphorus from January 2016 in the discharge licence concur with this objective. The ambient monitoring results for 2016 indicate that the BOD Environmental Quality Standards (Surface Water Reg's 2009) ('mean' EQS 1.5mg/l) are exceeded both upstream and downstream of the WWTP. The total ammonia average figures exceed the 'mean' EQS (0.065mg/l) both upstream and downstream of the WWTP in 2016. The Ortho Phosphorus average results are under the 'mean' EQS (0.035mg/l) for upstream and downstream in 2016.

(iv) Downstream abstractions and uses of water:

Lough Muckno is a large lake in Castleblayney that is used for fishing and recreational activities. There are three drinking water abstraction points further downstream of Lough Muckno. The first drinking water abstraction point is by Northern Ireland Water, from Lough Ross some 3km downstream of Lough Muckno, at Carran hill water supply scheme, which supplies approximately 3600m³/day for the South Armagh area.

The second drinking water abstraction point is by Monaghan County Council, from the River Fane some 16km downstream of Lough Muckno, at Inniskeen Public Water Supply (PWS) water supply scheme, which supplies approximately 186m³/day for the Inniskeen area.

The third drinking water abstraction is located at Stephenstown in County Louth (Cavan Hill water supply scheme) approximately 26km downstream of Lough Muckno, supplying Dundalk town and parts of County Louth.

(v) Water quality objective for the receiving water body:

This item was addressed in point no. (iii) above.

(vi) The standards and volumetric limitations applied to any industrial waste water that is licensed to discharge to the waste water works:

There are 2 Section 16 licensed discharges to Castleblayney WWTP.

Under condition 5.2 (b) of the licence, the programme of infrastructural improvements shall include an assessment of the integrity of the waste water works having regard to:

(i) Capacity of the waste water works:

The capacity of the treatment plant is currently adequate as outlined in section 2.1 of this report.

(ii) Leaks from the waste water works:

There are no known leaks from the waste water works.

(iii) Misconnections between foul sewers and surface water drainage network:

Monaghan County Council's Environment section monitor surface waters and investigate any misconnections highlighted. The more recent housing developments would have separate foul and surface water systems.

(iv) Infiltration by surface water/ground water:

A detailed survey was carried out of the Castleblayney network and treatment plant in 2008 by Consultants for Monaghan County Council. This survey highlighted deficiencies within the sewer network. The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis"

a) Programme of Improvements

Under condition 5.2 (c) of the licence, the programme of infrastructural improvements shall include an assessment of all storm water overflows associated with the waste water works to determine the effectiveness of their operation and in particular identify improvements necessary to comply with the requirements of this licence:

This item is addressed in section 4.2 of this report and the improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.

Appendix 7.2 Ambient Monitoring Results

Castleblayney Upstream									
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	Total Phosphorus mg/l
05/01/16	grab	11.06	6.8	<1	0.055	0.055	7.5	2.5	0.07
10/02/16	grab	12.18	4.9	<1	0.031	0.054	7.4	<1	0.06
08/03/16	grab	12.6	6	1.3	0.018	0.063	7.7	7.8	0.05
27/04/16	grab	10.32	10.08	<1	0.009	0.056	7.9	3.3	0.05
11/05/16	grab	9.52	14.6	<1	0.011	0.14	7.9	2.6	0.05
13/06/16	grab	8.3	18.6	1	0.009	0.14	7.9	2.8	0.04
06/07/16	grab	8.4	15.5	1.2	0.011	0.065	7.8	2.1	0.05
03/08/16	grab	8.61	15.1	1.9	0.009	0.74	7.8	2.4	0.03
05/09/16	grab	7.92	17.4	<1	0.009	0.096	7.8	2.2	0.05
04/10/16	grab	7.89	13.1	3.1	0.037	0.085	7.7	1.9	0.08
02/11/16	grab	10	7	51.7	0.034	0.14	7.5	2	0.07
06/12/16	grab	11.55	6.1	1.1	0.021	0.072	7.5	1.3	0.06
	Average	9.86	11.26	5.525	0.021	0.1421	7.7	2.66	0.055
Castleblayney Downstream									
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	Total Phosphorus mg/l
05/01/16	grab	11.06	6.7	<1	0.079	0.21	7.3	2.9	0.1
10/02/16	grab	12.09	4.7	<1	0.039	0.14	7.4	<1	0.06
08/03/16	grab	13.4	5.8	1.6	0.022	0.2	7.7	2.9	0.06
27/04/16	grab	10.2	10.2	1.7	0.012	0.73	7.8	3.7	0.08
11/05/16	grab	9.14	14.8	<1	0.016	0.31	7.8	5.4	0.06
13/06/16	grab	9.05	19	1.4	0.023	0.58	7.9	5.3	0.08
06/07/16	grab	7.58	15.5	1.3	0.014	0.12	7.7	1.9	0.05
03/08/16	grab	8.39	15	1.5	<0.009	0.56	7.9	1.4	0.05
05/09/16	grab	7.03	17.7	<1	0.011	0.14	7.7	2.4	0.04
04/10/16	grab	8.1	13.1	2.4	0.04	0.093	7.8	1.8	0.08
02/11/16	grab	9.7	7.3	42.4	0.043	0.1	7.5	1.4	0.08
06/12/16	grab	10.71	5.1	1.7	0.031	0.081	7.5	1.6	0.07
	Average	9.7	11.24	4.83	0.028	0.272	7.66	2.64	0.0675

Appendix 7.3 Sewer Integrity Risk Assessment 2016

Section 1.1 Agglomeration Details						
Name		Castleblayney				
Licence Number		D0205-01				
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)		Castleblayney				
Date Licence Issued		02/02/2011				
Current Date		09/02/2016				
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	1939000	1913000		
1.3	Average Daily Influent BOD or Average BOD Load from area served (If no measured data exists, insert estimated figure)	mg/l, measured	235.17	226.77		
1.4	Total BOD Load	kg/day	455.99463	433.81101	0	0
1.5	Average Population Equivalent (@0.06kg/person/day)	p.e.	7600	7230	0	0
1.6	Estimated (existing) Non-Domestic Load	p.e.	2734	2734		
1.7	Estimated Domestic Load	p.e.	4866	4496	0	0
1.8	Occupancy Rate for the Agglomeration	pop/house	2.46	2.46		
1.9	Estimated Number of Connected Properties	houses	1978	1828	0	0
1.10	Number of properties within the agglomeration when compared with CSO Data or An Post Geodirectory	houses	1692	1692		
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	16.72395833	17.10590278		
1.12	Estimated 3DWF	l/sec	50.17	51.32	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	52.14	68.24		
1.14	This Annual Average Peak as Multiples of Dry Weather Flow (Peaking Factor)	Nr	3.12	3.99	0.00	0.00
1.15	Highest Peak Flow Recorded (Insert UNKNOWN if no records exist)	l/s	67.2	68.24		
1.16	Does this Peak Flow (multiple of DWF) cause hydraulic capacity problems within the network ?	---	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	300	300		
1.20	Is the capacity of the storm tank sufficient to capture and retain all overflows to the tank ?	---	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)		1 to 2 times per month	1 to 2 times 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		Hard Copy Drawings only	Hard Copy Drawings only	SUS 2002	SUS 2003
1.23.1	If other or combination of the above please describe	Describe	PDF and hard copy of drawings	PDF and hard copy of drawings		
1.24	Total length of sewers (use drop down menus to define whether these figures are estimated or measured)	km Estimated	25.67	25.67	0.00	0.00
1.24.1	Total length of sewers > 450mm Diameter	km Estimated	0.00	0.00		
1.24.2	Total length of sewers > 300mm but ≤ 450mm in Diameter	km Estimated	0.82	0.82		
1.24.3	Total length of sewers > 225mm but ≤ 300mm in Diameter	km Measured	4.10	4.10		
1.24.4	Total length of sewers ≤ 225mm in Diameter	km Estimated	20.75	20.75		
1.24.5	Other	km Estimated	Unknown	Unknown		
1.25	Pipeline Material					
1.25.1	What portion of the sewer network consists of Concrete Pipes	% Estimated	0%	0%		
1.25.2	What portion of the sewer network consists of Plastic Pipes	% Estimated	47%	47%		
1.25.3	What portion of the sewer network consists of Clay materials	% Estimated	38%	38%		
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	15%	15%		
1.26	Total number of Storm Water Overflows	Nr	2	2		

1.27	What Screening or other mechanical devices are employed at the storm water overflows					
	SWO No. SW2 located at Monaghan Rd Roundabout	Describe	Overflow MH no screen			
	SWO No. SW3 located at Storm tank at WWTP	Describe	REM RGB800 mechanical band screen			
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)					
	SWO No. SW2 located at Monaghan Rd Roundabout	Describe	Q3-Q4	Q3-Q4		
	SWO No. SW3 located at Storm tank at WWTP	Describe	Q3-Q4	Q3-Q4		
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)					
	SWO No. SW2 located at Monaghan Rd Roundabout	Describe	N/A	N/A		
	SWO No. SW3 located at Storm tank at WWTP	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.					
	SWO No. SW2 located at Monaghan Rd Roundabout	Describe	Sensitive	Sensitive		
	SWO No. SW3 located at Storm tank at WWTP	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. SW2 located at Monaghan Rd Roundabout	Designation	Not Listed	Not Listed		
	SWO No. SW3 located at Storm tank at WWTP	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. SW2 located at Monaghan Rd Roundabout	Designation	Not Listed	Not Listed		
	SWO No. SW3 located at Storm tank at WWTP	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	9	9		
1.30	Total Length of Rising Mains (operated by the Local Authority)	km	2.8	2.8		
1.31	Rising Main Material					
1.31.1	What portion of the rising mains consists of ductile iron pipes	% Measured	76%	76%		
1.31.2	What portion of the rising mains consists of plastic pipes	% Measured	24%	24%		
1.31.3	What portion of the rising mains consists of other materials	% Estimated	N/A	N/A		
1.32	Discharge Capacity of the Pump Set (s) at normal duty point					
	At Pump Station at Monaghan Road PS		12.5 l/s	12.5 l/s		
	At Pump Station at Muckno St PS		77.78 l/s	77.78 l/s		
	At Pump Station at Ashview Court PS		unknown	unknown		
	At Pump Station at Laurel Hill PS		unknown	unknown		
	At Pump Station at Crescent Hill PS		9.1 l/s	9.1 l/s		
	At Pump Station at Bree PS		27.3 l/s	27.3 l/s		
	At Pump Station at Kockturnagh PS		8.5 l/s	8.5 l/s		
	At Pump Station at Conabury Hill PS		unknown	unknown		

	At Pump Station at Dundalk Road PS		4.7 l/s	4.7 l/s		
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%)	%	66.67%	66.67%		
1.34	Available Storage Capacity at Pump Stations (include pump sump and any storm water/emergency overflow tanks)					
	At Pump Station at Monaghan Road PS	m ³	10.6	10.6		
	At Pump Station at Muckno St PS	m ³	23.7	23.7		
	At Pump Station at Ashview Court PS	m ³	2.2	2.2		
	At Pump Station at Laurel Hill PS	m ³	15.7	15.7		
	At Pump Station at Crescent Hill PS	m ³	27.4	27.4		
	At Pump Station at Bree PS	m ³	31.2	31.2		
	At Pump Station at Kockturnagh PS	m ³	10.2	10.2		
	At Pump Station at Conabury Hill PS	m ³	16.1	16.1		
	At Pump Station at Dundalk Road PS	m ³	15.5	15.5		
1.35	Total Number of " Licensed Secondary Discharge Points and Stormwater Overflows " at pumping stations	Nr	0	0		
1.36	Total Number of " Emergency Overflow Points " at pumping stations	Nr	2	2		
1.37	What Screening or other mechanical devices are employed at the secondary discharge points or emergency overflows ?					
	At Pump Station at Monaghan Road PS	Describe	unscreened	unscreened		
	At Pump Station at Muckno St PS	Describe	unscreened	unscreened		
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 at Monaghan Road PS	Describe	N/A	N/A		
	At Pump Station at Muckno St PS	Describe	Q3-Q4	Q3-Q4		
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 ___ at _____	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 at Monaghan Road PS		Not Listed	Not Listed		
	At Pump Station at Muckno St PS		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 at Monaghan Road PS	Designation	n/a	n/a		
	At Pump Station at Muckno St PS	Designation	n/a	n/a		
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 at Monaghan Road PS	Designation	n/a	n/a		
	At Pump Station at Muckno St PS	Designation	n/a	n/a		
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	4	15		
1.41	Number of Reported Complaints which have been rectified	Nr	4	15		
Section 1.6.2 Reported/Recorded/Estimated Number of Secondary Discharges						
1.42	Number of Reported Secondary Discharges	Nr	16	0		
1.43	Number of Recorded Secondary Discharges	Nr	0	0		
1.44	Estimated Total Number of Secondary Discharges	Nr	16	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 <i>(The individual personnel shall not be named, only grade and level of training needs to be provided)</i>					
1.48.1	For example, 1 Nr. Fulltime Caretaker employed at General Operative Level (with basis H&S training) to operate & maintain the sewer network. 1 Nr. Part-time Caretaker employed as a Mechanical Fitter (FETAC Level 5) to operate & maintain the pumping stations.	1 Nr. Fulltime Caretaker				
1.48.2						
1.48.3						
1.48.4						
Waste Water Works - Investment Details						
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	Castleblaney Sewerage Scheme Phase 1 Wastewater Treatment Plant Upgrade					
1.56.2						
Section 1.9 Licence Specified Improvements Works						

1.57	<i>The Local Authority is required to report on the extent of Improvement Works which have been specified under the Licence as issued by the EPA. Reference which AER contains this information</i>		2014 AER	2014 AER		
Section 1.10 Other Updates Since Last Report						
1.58	<i>Installation of new ferric dosing system and submerged aerator was expected to be completed in 2015 (2014 AER). This upgrade is not due to be completed in 2016.</i>					

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) ?	Yes	0		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 ?	62%	10		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 ?	5 to 10	3		Select N/A response if no design assessment or design exists.
2.1.3	Are the outcomes of the Hydraulic Assessment being implemented ?	No	5		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 ?	Never	5		Select N/A response if no hydraulic performance assessment or design exists. For ongoing works select "less than 5".
2.2	Has a Dynamic Computer Model been used to Assess the Hydraulic Performance of the Sewer Network ?	Yes	0		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" ?	Yes	0		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	No	10		Select N/A if no Flow Survey has been undertaken.
2.5.2	To Verify a Computer or Mathematical Model of the Network	No	10		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 ?	Yes	0		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?	3 to 6	7		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 ?	Yes	20		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)			110		
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	<u>What Environmental or Discharge Quality Data is available with regard to the sewer network ?</u>	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	<u>Do trade effluents discharge to the sewer network?</u>	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	<u>Are there Storm Water Overflows within the network ?</u>	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	<u>Are there Secondary Discharges within the network (excluding Emergency Overflows at Pump Stations)?</u>	No	0		If the answer is No , proceed to Query 3.1.4.
3.1.4	<u>Is there any evidence that exfiltration is occurring from the network ?</u>	Unknown	20		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	<u>If Answer to Query 3.1.1 is "Yes", what % of trade effluents have a licence to Discharge to the Public Sewer ?</u>	81 - 90%	2		Select N/A if answer to Query 3.1.1 is No . If not all trade effluents are licenced, Local Authority should consider issuing and controlling such discharges under the appropriate Legislation.
3.2.1	<u>Are all licenced trade Discharges compliant with their relevant licence and associated conditions.</u>	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	<u>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)</u>	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	<u>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?</u>	100%	0		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	<u>Have samples from any Secondary Discharges within the system been analysed ?</u>	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	<u>What percentage of discharges from the system are known to cause environmental pollution of the receiving waters ?</u>	None	0		If the answer is greater than 50% then detail, in the AER, the Improvement Programme necessary to reduce this percentage.
3.6	<u>In relation to possible exfiltration has a risk analysis of ground water contamination or pollution been undertaken ?</u>	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	<u>If Answer to Query 3.6 is "Yes", have any groundwater aquifers been identified in the area of the Network and/or Discharge Points?</u>	N/A	0		Select N/A if no risk analysis of groundwater contamination has been undertaken.
3.6.2	<u>If Answer to Query 3.6.1 is "Yes", state the classification of groundwater aquifer identified in the area?</u>	N/A	0		Select N/A if no risk analysis of groundwater contamination has been undertaken.
3.6.3	<u>In relation to Query 3.6.1, is the aquifer used as a source for Public, Private or Group Water Supply Schemes?</u>	N/A	0		Select N/A if no risk analysis of groundwater contamination has been undertaken.
3.7	<u>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?</u>	Yes	0		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	<u>What percentage of storm water overflows comply with the performance criteria referred to in Query 3.7?</u>	> 80%	10		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	<u>Have the causes of these Capacity Deficiencies (storm water overflows & Secondary Discharges) been identified ?</u>	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 in the AER.
Total Risk Assessment Score (RAS)			127		
3.10	<u>Prepare Assessment of Needs & Sewer Upgrade Implementation Plan</u>	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" ?	Yes	0		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?	5 to 10	5		If no CCTV has been undertaken, select "N/A" response
4.2	What was this CCTV Survey Information Used for?	Determine full extent of Sewer Rehab Works to be undertaken within Network	0		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?	Yes	0		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 ?	Yes	0		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)	1%	2		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 5 collapse, include the total length of that sewer in calculating 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)	5%	6		Insert Percentage of Overall Network Length; If a sewer length contains a Grade 4 condition, include the total length of that sewer in calculating 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	Only 60% of the sewer network was surveyed. Of this, 93.6% was reported as < Grade 4	Insert Percentage of Overall Network Length; If a sewer length contains a Grade 3 deterioration, include the total length of that sewer in calculating 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	Only 60% of the sewer network was surveyed. Of this, 93.6% was reported as < Grade 4	Insert Percentage of Overall Network Length; If a sewer length contains a Grade 2 feature, include the total length of that sewer in calculating 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	Only 60% of the sewer network was surveyed. Of this, 93.6% was reported as < Grade 4	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%			28		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 automatically 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 ?	0 - 10%	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?	No	10		If the answer is No , consider further examination of the sewer network, the structural loading conditions, gradients and possible H ₂ S Formation. If Yes completed Query 4.7
Total Risk Assessment Score (RAS)			78		

4.7	Prepare Assessment of Needs & Sewer Rehabilitation Implementation Plan	In the AER Attach Assessment of Needs and Rehabilitation Implementation Plan as separate documents			
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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	<u>Are complaints of an environmental nature recorded and held in a central database?</u>	Yes	0		Consider setting up Central Database for Complaints
5.2	<u>Is there an emergency response procedure in place?</u>	Yes	0		Consider setting up target response times for dealing with Complaints
5.3	<u>What has been the highest frequency of flooding in the network due to hydraulic inadequacy, over the past 5 years?</u>	Once/yr	4		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	<u>What has been the highest frequency of flooding in the network due to operational causes over the past 5 years?</u>	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.
5.5	<u>What has been the highest frequency of surcharging of critical sewers in the network, over the past 5 years?</u>	3 times/yr	8		Select the highest number of events in any 12 month period.
5.6	<u>What has been the highest frequency of reportable incidents in the network, over the past 5 years?</u>	More than 5 times/yr	20		Select the highest number of events in any 12 month period.
5.7	<u>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?</u>	Twice/yr	4		Select the highest number of events at any given Pumping Station in any 12 month period.
5.8	<u>What has been the highest frequency of blockages in sewers in the network over the past 5 years?</u>	0.1 - 0.25/km/yr	16		Select the highest number of events per km of sewer network in any 12 month period.
5.9	<u>What has been the highest frequency of collapses in sewers in the network over the past 5 years?</u>	None	0		Select the highest number of events in any 12 month period.
5.10	<u>What has been the highest frequency of bursts in rising mains in the network over the past 5 years?</u>	None	0		Select the highest number of events in any 12 month period.
Total Risk Assessment Score (RAS)			60		
5.11	<u>Prepare Up Dated Operational and Maintenance Plan</u>				

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	110	High Risk	73%	150
Section 3.1 Environmental Risk Assessment	127	Low Risk	25%	500
Section 4.1 Structural Risk Assessment	78.2125	Medium Risk	52%	150
Section 5.1 O&M Risk Assessment	60	Low Risk	30%	200
Total RAS for Network	375.2125	High Risk	38%	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"