

# Annual Environmental Report 2014

<b>Agglomeration Name:</b>	<b>Killygordon</b>
<b>Licence Register No.</b>	<b>D0518-01</b>



## Table of Contents

<b>Section 1. Executive Summary and Introduction to the 2014 AER</b>	<b>1</b>
1.1 Summary report on 2014	1
<b>Section 2. Monitoring Reports Summary</b>	<b>2</b>
2.1 Summary report on monthly influent monitoring	2
2.2 Discharges from the agglomeration	3
2.3 Ambient monitoring summary	4
2.4 Data collection and reporting requirements under the Urban Waste Water Treatment Directive	4
2.5 Pollutant Release and Transfer Register (PRTR) - report for previous year	4
<b>Section 3 Operational Reports Summary</b>	<b>5</b>
3.1 Treatment Efficiency Report	5
3.2 Treatment Capacity Report	5
3.3 Extent of Agglomeration Summary Report	5
3.4 Complaints Summary	6
3.5 Reported Incidents Summary	6
6 Sludge / Other inputs to the WWTP	7
<b>Section 4. Infrastructural Assessments and Programme of Improvements</b>	<b>8</b>
4.1 Storm water overflow identification and inspection report	8
4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.	9
5.1 Priority Substances Assessment	12
5.2 Drinking Water Abstraction Point Risk Assessment.	12
5.3 Shellfish Impact Assessment Report.	12
5.4 Toxicity / Leachate Management	12
5.5 Toxicity of the Final Effluent Report	12
5.6 Pearl Mussel Measures Report	12
5.7 Habitats Impact Assessment Report	12
<b>Section 6. Certification and Sign Off</b>	<b>13</b>
<b>Section 7. Appendix</b>	<b>14</b>

# Section 1. Executive Summary and Introduction to the 2014 AER

## 1.1 Summary report on 2014

This Annual Environmental Report has been prepared for D0518-01, Killygordon Agglomeration, in County Donegal in accordance with the requirements of the wastewater discharge licence for the agglomeration. The Killygordon Wastewater Discharge Licence was granted on 11th December 2013.

The agglomeration is served by a wastewater treatment plant with a Design PE of 600.  
The average p.e. loading to the WWTP in 2014 was 649 p.e.

The WWTP is hydraulically and biologically over loaded and does not have the capacity to treat additional sewage and further.

The treatment process includes the following:-

- Preliminary Treatment
  - intake collection manhole
  - intake works containing manually racked screen
  - storm water overflow bypass facility
  - flow measurement and intake sampler
  - pump sump
- Secondary Treatment
  - treatment unit(SBR Tank)
  - effluent flow measurement and sampling chamber
  - sludge holding tank
  - Storm tank

The final effluent from the Primary Discharge Point was compliant with the Emission Limit Values in 2014.

The following parameters exceeded the emission limit values in 2014:-

- Ammonia on two occasions

These were compliant under Condition 2.

4. 242,220 kgs sludge total weight sludge was removed from the wastewater treatment plant in 2014 as liquid sludge. Sludge was transferred to Letterkenny.

5. There was no major capital or operational changes undertaken in 2014

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

	BOD (mg/l)	COD (mg/l)	SS (mg/l)	TP (mg/l)	TN (mg/l)	Hydraulic Loading (m3/d)	Organic Loading (PE/day)
<b>Number of Samples</b>	6	6	6	6	6		
<b>Annual Max.</b>	396	1957	802	12.1	86.9	300	1604
<b>Annual Mean</b>	200.1	635	264.1	7.795	56.35	220.2	649

#### Significance of results

The annual mean hydraulic loading is greater than the design Treatment Plant Capacity as detailed further in Section 3.2.

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

Although the WWTP appears to be hydraulically and biologically over loaded, sample results for the discharge indicate compliance with the ELVs set out in the WWDA. A review of the treatment plant's capacity together with additional sampling to confirm compliance will be carried out in 2015.

## 2.2 Discharges from the agglomeration

Table 2.2 - Effluent Monitoring Summary

	pH	cBOD (mg/l)	COD (mg/l)	TSS (mg/l)	Ammonia (mg/l)	Ortho P (mg/l)	Other Parameters specified in the WWDL	Comment
<b>WWDL ELV (Schedule A)</b>	6 - 9	25	125	35	5	9		
<b>ELV with Condition 2 Interpretation included</b>	6 - 9	50	250	87.5	6	9.56		
<b>Number of sample results</b>	6	6	6	6	6	6		
<b>Number of sample results above WWDL ELV</b>	0	0	0	0	2	0		
<b>Number of sample results above ELV with Condition 2 Interpretation included</b>	0	0	0	0	0	0		
<b>Annual Mean (for parameters where a mean ELV applies)</b>								
<b>Overall Compliance (Pass/Fail)</b>	Pass	Pass	Pass	Pass	Pass	Pass		

### Significance of results

The WWTP was compliant with the ELV's set in the wastewater discharge licence. The impact on receiving waters is assessed further in Section 2.3.

### **2.3 Ambient monitoring summary**

**Table 2.3 - Ambient Monitoring Report Summary**

<b>Ambient Monitoring Point from WWDL (or as agreed with EPA)</b>	<b><i>Irish Grid Reference</i></b>	<b>EPA Feature Coding Tool code</b>	<b>Current EQS Status</b>	<b>Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?</b>
Upstream monitoring point	E220233 N394151	RS01F010880	Q3	No discernible impact
Downstream monitoring point	E220503 N393894	RS01F010899	Q3	No discernible impact

The results for the upstream and downstream monitoring are included as in 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 doesn't have an observable negative impact on the water quality status.

### **2.4 Data collection and reporting requirements under the Urban Waste Water Treatment Directive**

The electronic submission of data was completed on: 16/2/2015

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

A PRTR is not required as the agglomeration is less than 2000 p.e.

## Section 3 Operational Reports Summary

### 3.1 Treatment Efficiency Report

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:-

**Table 3.1 - Treatment Efficiency Report Summary**

	<b>cBOD (kg/yr)</b>	<b>COD (kg/yr)</b>	<b>SS (kg/yr)</b>	<b>Total P (kg/yr)</b>	<b>Total N (kg/yr)</b>	<b>Comment</b>
<b>Influent mass loading (kg/year)</b>	12,775	40,561	16,863	511	3,577	
<b>Effluent mass emission (kg/year)</b>	256	2,427	894	192	1,341	
<b>% Efficiency (% reduction of influent load)</b>	98%	94%	94%	62%	62%	

### 3.2 Treatment Capacity Report

**Table 3.2 - Treatment Capacity Report Summary**

<b>Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/year)</b>	73,000
<b>Hydraulic Capacity – Design / As Constructed (peak flow) (m3/year)</b>	109,500
<b>Hydraulic Capacity – Current loading (m3/year)</b>	80,300
<b>Hydraulic Capacity – Remaining (m3/year)</b>	0
<b>Organic Capacity - Design / As Constructed (PE)</b>	600
<b>Organic Capacity - Current loading (PE)</b>	649
<b>Organic Capacity – Remaining (PE)</b>	0
<b>Will the capacity be exceeded in the next three years? (Yes / No)</b>	Yes

Killygordon WWTP is on the following Irish Water programmes

- Operation & Maintenance list for process optimisation
- IW Minor Programmes (Quick Win Programme) list

### 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 treated 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
Load generated in the agglomeration that is collected in the sewer network(estimated)	100%
Load collected in the agglomeration that enters treatment plant ( estimated)	100%
Load collected in the sewer network but discharged without treatment ( estimated)	0%

**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.

The data in Table 3.3 above is estimated based on influent monitoring as detailed in Section 2.1 above.

### 3.4 Complaints Summary

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

**Table 3.4 - Complaints Summary Table:**

Number	Date & Time	Nature of Complaint	Cause of Complaint	Actions taken to resolve issue	Closed (Y/N)
0	N/A	N/A	N/A	N/A	N/A

No complaints received.

### 3.5 Reported Incidents Summary

A summary of reported incidents is included below.

**Table 3.5.1 - Summary of Incidents**

Incident Type (e.g. Non-compliance, Emission, spillage, Emergency Overflow Activation)	Incident Description	Cause	No. of incidents	Corrective Action	Authorities Contacted <small>Note 1</small>	Reported to EPA (Yes/No)	Closed (Y/N)
0	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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**

<b>Number of Incidents in 2014</b>	0
<b>Number of Incidents reported to the EPA via EDEN in 2014</b>	0
<b>Explanation of any discrepancies between the two numbers above</b>	N/A

No Incidents reported.

### **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**

<b>Input type</b>	<b>m3/year</b>	<b>PE/year</b>	<b>% of load to WWTP</b>	<b>Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)</b>	<b>Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)</b>
Domestic /Septic Tank Sludge	0	0	0	N	Y
Industrial / Commercial Sludge	0	0	0	N	Y
Landfill Leachate (delivered by tanker)	0	0	0	N	Y
Landfill Leachate (delivered by sewer network)	0	0	0	N	Y
Other (specify)	0	0	0	N	Y

Notes:

1. Other Inputs include; septic tank sludge, industrial /commercial sludge, landfill leachate and any other sludge that is collected and added to the treatment plant.
2. Sludge that is added to a dedicated sludge reception facility at a waste water treatment plant not included in Table 3.6. Only include sludge which is added to the waste water treatment process stream. Enter zero where there are no inputs

## Section 4. Infrastructural Assessments and Programme of Improvements

### 4.1 Storm water overflow identification and inspection report

The Storm Water Overflow Identification & Inspection report has not been conducted.

There is one Stormwater overflow located at the inlet works of the Waste Water Treatment Plant which discharges to the River Finn via the primary discharge point.

<b>Type of Discharge</b>	Open ended concrete pipe
<b>Unique Point Code</b>	SW1
<b>Location</b>	At intake chamber of WWTP discharging via the primary discharge point
<b>Grid ref (6E, 6N)</b>	220271 394146

Storm water is directed to the Storm Holding Tank and is returned to the intake works for treatment when the storm abates. The overflow from the Storm Water Tank discharges via the primary outlet SW1.

Condition 4.12 Storm Water Overflows (SWO) requires an investigation for the identification and assessment of SWOs be carried out. A compliance report on the DoECLG 'Procedures and criteria in relation to Storm Water Overflows' 1995 has not been undertaken. The WWTP cannot comply with the DoECLG guidelines until adequate capacity is provided to avoid overflow/untreated discharge to the receiving water.

**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 / Medium / Low)	Compliance with DoEHLG Criteria	No. of times activated in 2014 (No. of events)	Total volume discharged in 2014 (m3)	Total volume discharged in 2014 (P.E.)	Estimated /Measured data
SW1	E 220271 N394146	N/A	medium	Not yet assessed	5	unknown	12	E

**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 2014?	unknown
Is each SWO identified as non-compliant with <a href="#">DoEHLG Guidance</a> included in the Programme of Improvements?	Yes
The SWO assessment includes the requirements of Schedule A3 & C3	
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

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

The Improvement Programme is listed below and the annual statement of measures is included in Appendix 7.1.

Killygordon WWTP is on the following Irish Water programmes

- Operation & Maintenance list for process optimisation
- IW Minor Programmes (Quick Win Programme) list

Improvement Works are scheduled to commence in 2015 following inspections completed by Irish Water Process Optimisation Analysts with approval granted for ANB presented.

Killygordon WWTP - Provision, Installation and Commission of new 6mm Automated Screen; flow meters; updates to Control Panel for Pump Drives and upgrade to existing SCADA System incl. dial out alarms, tenders to be requested in Q2 2015.

No specific improvements works are specified in schedule C of the Licence.

**Table 4.2.1 - Specified Improvement Programme Summary**

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule (A or C)	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works ((i) Not Started; (ii) At planning stage; (iii) Work ongoing on-site; (iv) Commissioning Phase; (v) Completed; (vi) Delayed;)	% Construction Work Completed	Timeframe for Completing the Work	Comments
N/A							

The Sewer Integrity Assessment Tool has been completed with available data.

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	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date	Comments
	<b>WWTP Assessment</b>	<i>WWTP assessment (Condition 5.2).</i>	<b>0</b>	<b>unknown</b>	on O&M list for process optimisation
	Network Evaluation	<i>Sewer Integrity Tool (Condition 5.2).</i>	<b>80</b>	<b>Ongoing</b>	<b>SIT commenced</b>

	N/A	Secondary discharges assessment (Condition 5.2).	N/A	N/A	
	SWO assessment	SWO assessment (Condition 4.11)	0	unknown	
	N/A	Drinking Water Abstraction Risk Assessment (Condition 4)	N/A	N/A	
	N/A	Shellfish Impact Risk Assessment (Condition 5)	N/A	N/A	
	N/A	Pearl Mussel Impact Assessment (Condition 4)	N/A	N/A	
	Optimisation O&M	Improved Operational Control	20		Process Optimisation
	Process Improvement	Incident Reduction	20		Process Optimisation
	Process Improvement	Elimination/Reduction of Priority Substances	20		Process Optimisation

Improvements identified above also include measures taken to prevent environmental damage anticipated following events or accidents/incidents associated with discharges or overflows from the waste water works and as such are considered to fulfil any Statement of Measures requirements. Refer also to Appendix 7.1 which summarises the Annual Statement of Measures.

**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	Comment
Hydraulic Risk Assessment Score	135	High	
Environmental Risk Assessment Score	250	Low	
Structural Risk Assessment Score	150	High	
Operation & Maintenance Risk Assessment Score	16	Low	
Overall Risk Score for the agglomeration	551	High	

## Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required in 2014 AER or outstanding from previous AER	Included in 2014 AER	Reference to relevant section of AER (e.g. Appendix 2 Section4.
Priority Substances Assessment	Yes	No	Sampling of Metals carried out for outlet and surface water. Data listed in Appendix. A priority substances desktop assessment was not carried out.
Drinking Water Abstraction Point Risk Assessment	No	No	
Habitats Impact Assessment	No	No	
Shellfish Impact Assessment	No	No	
Pearl Mussel Report	No	No	
Toxicity/Leachate Management	No	No	
Toxicity of Final Effluent Report	No	No	

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	No	Assessment not carried out. Metal analysis included in appendix 7.4.
Drinking Water Abstraction Point Risk Assessment	N/A	
Habitats Impact Assessment	N/A	
Shellfish Impact Assessment	N/A	
Pearl Mussel Report	N/A	
Toxicity/Leachate Management	N/A	
Toxicity of Final Effluent Report	N/A	

### 5.1 Priority Substances Assessment

The Priority Substances Assessment report is not included but priority substance data is included in Appendix 7.4. A summary of the findings of this report is included below.

**Table 5.1 - Priority Substance Assessment Summary**

	<i>Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.</i>
<b>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</b>	Selective Substance analysis for priority substances was carried out. Appendix 7.4
<b>Does the assessment include a review of Trade inputs to the works?</b>	No
<b>Does the assessment include a review of other inputs to the works?</b>	No
<b>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)</b>	No
<b>Does the assessment identify that priority substances may be impacting the receiving water?</b>	No
<b>Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?</b>	No

### 5.2 Drinking Water Abstraction Point Risk Assessment.

The Drinking Water Abstraction Point Risk Assessment report is not required.

### 5.3 Shellfish Impact Assessment Report.

The Shellfish Impact Assessment Report is not required.

### 5.4 Toxicity / Leachate Management

The Toxicity / Leachate Management Assessment report is not required.

### 5.5 Toxicity of the Final Effluent Report

The Toxicity / Leachate Management Assessment report is not required.

### 5.6 Pearl Mussel Measures Report

A sub-basin management plan in relation to Pearl Mussels is not required.

### 5.7 Habitats Impact Assessment Report

The Habitats Impact Assessment Report is not required.

## 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?	No
List reason e.g. additional SWO identified <i>(insert lines as required)</i>	
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 <i>(insert lines as required)</i>	
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?	Yes
List outstanding reports <i>(insert lines as required)</i>	Priority substance Report. Storm water Overflow Compliance Report

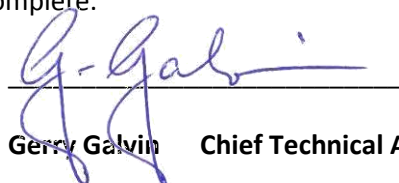
### Declaration by Irish Water

The AER contains the following;

- Introduction and background to 2014 AER
- Monitoring reports summary.
- Operational reports summary.
- Infrastructural Assessment and Programme of Improvements.
- Licence specific reports.
- Certification and Sign Off
- Appendices

I certify that to the best of my knowledge the information given in this Annual Environmental Report is truthful, accurate and complete:

Signed:



Gerry Galvin

Date: 28/04/2015

Chief Technical Advisor

## Section 7. Appendix

In the appendix include all the detailed or site specific reports that are relevant to the AER. Reports omitted from previous AERs should also be appended here.

Appendix 7.1 - Annual Statement of Measures

Appendix 7.2 - Ambient monitoring summary

Appendix 7.3 – Sewer integrity tool output

Appendix 7.4 - Priority substances assessment

Appendix 7.5– Quality Results

## Appendix 7.1 Annual Statement of Measures

It is the stated objective of Donegal County Council, working on behalf of Irish Water, to ensure that the capacity of the Killygordon Waste Water Treatment Plant is not exceeded and to operate the wastewater works and supervise the operation of the WWTP by its area staff and Laboratory staff.

With regard to financial provisions, Donegal County Council's current stated position is that all operational costs that may arise will be covered by its own operational budget under the Service Level Agreement.

Killygordon WWTP is on the following Irish Water programmes

- Operation & Maintenance list for process optimisation
- IW Minor Programmes (Quick Win Programme) list
- Improvement Works are scheduled to commence in 2015 following inspections completed by Irish Water Process Optimisation Analysts with approval granted for ANB presented.
- Killygordon WWTP - Provision, Installation and Commission of new 6mm Automated Screen; flow meters; updates to Control Panel for Pump Drives and upgrade to existing SCADA System incl. dial out alarms, tenders to be requested in Q2 2015.

The following measures have been identified and may be actioned under O & M Optimisation and minor improvement works at the plant under an Irish Water Minor Works Improvement programme. The major upgrade of the plant will be subject to available funding.

ID	Mitigation Measures to be taken	Outcome	Action	Date for completion	Contact Person
I	Assessment of surfacewater Inflow	Reduced surfacewater inflow	CCTV survey of Network	Dec 2016	Irish Water
II	Provide Standby generator.	Ensure continuity of power supply	Provide Standby generator.Improved site management	Dec 2015	Irish Water
III	Specific construction works	Improved site operation	Fixed ladder and hand rails on the sludge holding tank	Dec 2015	Irish Water
!IV	Specific construction works	Improved site operation	Provide Platform at the S.B.R. for working safely at the decant arm	Dec 2015	Irish Water
V	Specific construction works	Ground work	Concrete apron round the tanks and driveway. Repair MHs	Dec 2015	Irish Water
VI	Provide Welfare facilities for personnel	Health & Safety	Separate welfare facility from blower room	Dec 2016	Irish Water

VII	Electrical inspection survey	Continual Power supply	Regular Maintenance by DCC electrician	Dec 2015	Irish Water
VIII	Provide Mechanical Screen	Improved Screening	Source funding Specify & Tender Install Mechanical Screen	Dec 2016	Mr J McGettigan SEE
IX	Upgrade of plant and equipment	Modernisation of Plant and Increase capacity	Capital works Application	Funding Dependant	Irish Water

A Mechanical screen is required due to the interference of the manually raked screen with flow monitoring. The inlet meter is an ultra sonic sensor and flume, this is affected by the hand raked screen blocking which in turn backs up in the flume thus giving a higher inlet flow.

## Appendix 7.2 Ambient Monitoring Results

Location	Lab Ref	Date	pH	DO	BOD	SS	NH3 (as N)	Ortho P	Visual Inspection
					(mg/l)	(mg/l)	(mg/l)	(mg/l)	
Upstream	142501501	24/02/2014	6.78	9.36	<1	<6	<0.040	<0.010	Nothing Observed
Downstream	142501504	24/02/2014	6.78	9.4	<1	<6	<0.040	<0.010	Nothing Observed
Upstream	142502393	30/04/2014	7.03	9.37	<1	<6	0.101	<0.010	Nothing Observed
Downstream	142502396	30/04/2014	7.31	9.43	1	<6	0.102	<0.010	Nothing Observed
Upstream	142503198	25/06/2014	7.14	8.61	<1	<6	0.093	<0.010	Nothing Observed
Downstream	142503201	25/06/2014	7.26	10.02	<1	<6	0.052	<0.010	Nothing Observed
Upstream	142504153	22/08/2014	7.11	10.11	1.48	<6	<0.040	<0.010	Nothing Observed
Downstream	142504156	22/08/2014	7.02	10.17	1.62	<6	<0.040	0.012	Nothing Observed
Upstream	142505221	21/10/2014	6.21	11.21	1.34	11.8	0.046	<0.010	Nothing Observed
Downstream	142505224	21/10/2014	6.2	11.38	1.37	18.2	0.04	<0.010	Nothing Observed
Upstream	142505885	09/12/2014	6.61	12.81	<1	<6	0.043	<0.010	Metal Analysis Carried Out
Downstream	142505888	09/12/2014	6.62	12.8	<1	<6	<0.040	<0.010	Metal Analysis Carried Out

	UPSTREAM		DOWNSTREAM	
	Range	Average	Range	Average
<b>PH</b>	6.21 – 7.14	6.81	6.2 – 7.31	6.865
<b>BOD</b>	<1 – 1.48	1.41	<1 – 1.62	1.33
<b>Ortho P</b>	<0.01	<0.01	<0.01 – 0.012	<0.01
<b>DO</b>	8.61 – 12.81	10.92	9.4 – 12.8	10.55
<b>SS</b>	<6 – 11.8	<6	<6 – 18.2	<6
<b>Ammonia as N</b>	<0.04 – 0.101	0.07	<0.04 - .102	0.06

## Appendix 7.3 Sewer Integrity Tool Output

Section 1.1 Agglomeration Details						
Name		Killygordon				
Licence Number		D0518-01				
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)		Killygordon				
Date Licence Issued		11/12/2013				
Current Date		12/02/2015				
Waste Water Works - Wastewater Treatment Plant Details		Unit	Year	Year	Year	Year
			2014	2015	2016	2017
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	220166			
1.3	Average Daily Influent BOD or Average BOD Load from area served (If no measured data exists, insert estimated figure)	mg/l, measured	200			
1.4	Total BOD Load	kg/day	44.0332			
1.5	Average Population Equivalent (@0.06kg/person/day)	p.e.	734			
1.6	Estimated (existing) Non-Domestic Load	p.e.	75			
1.7	Estimated Domestic Load	p.e.	659			
1.8	Occupancy Rate for the Agglomeration	pop/house	2.83			
1.9	Estimated Number of Connected Properties	houses	233			
1.10	Number of properties within the agglomeration when compared with CSO Data or An Post Geodirectory	houses	127			
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	1.8			
1.12	Estimated 3DWF	l/sec	5.40			
1.13	Annual Average Peak Flow to WWTP or discharging from whole system if there is no existing WWTP	l/s, measured	3.472			
1.14	This Annual Average Peak as Multiples of Dry Weather Flow (Peaking Factor)	Nr	3.00			
1.15	Highest Peak Flow Recorded (Insert UNKNOWN if no records exist)	l/s	3.472			
1.16	Does this Peak Flow (multiple of DWF) cause hydraulic capacity problems within the network ?	---	Yes	Yes	Yes	Yes
1.17	Total Rainfall for Previous Year	mm	1213			
1.18	Comparison - Mean Annual Rainfall for the agglomeration	mm	1200			
1.18.1	Define the Weather Station Used		Malin Head			
1.19	If Storm Water Storage is available at the Wastewater Treatment plant, what is the volume of the storm tank ?	m <sup>3</sup>	15.75			
1.20	Is the capacity of the storm tank sufficient to capture and retain all overflows to the tank ?	---	No	No	No	No
1.21	Total monthly average volume of Storm Water Stored or Returned for Treatment within the Waste Water Treatment Plant	m <sup>3</sup> per month	0????			
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	< 1 per month	1 to 2 times per month	< 1 per month
Waste Water Works - Sewer Network Details		Unit	2014	2015	2016	2017
Section 1.4 Waste Water Works - Gravity Sewer Details						
1.23	What database is used to maintain records of the sewer network		Autocad Drawing	SUS 2001	SUS 2002	SUS 2003
1.23.1	If other or combination of the above please describe	Describe	Atkins			
1.24	Total length of sewers (use drop down menus to define whether these figures are estimated or measured)	km Measured	#VALUE!	0.00	0.00	0.00
1.24.1	Total length of sewers > 450mm Diameter	km Estimated	Unknown			
1.24.2	Total length of sewers > 300mm but m450mm in Diameter	km Estimated	Unknown			
1.24.3	Total length of sewers > 225mm but m300mm in Diameter	km Measured	Unknown			

1.24.4	Total length of sewers m225mm in Diameter	km Estimated	Unknown			
1.24.5	Other	km Estimated	Unknown			
1.25	Pipeline Material					
1.25.1	What portion of the sewer network consists of Concrete Pipes	% Estimated	40%			
1.25.2	What portion of the sewer network consists of Plastic Pipes	% Estimated	20%			
1.25.3	What portion of the sewer network consists of Clay materials	% Estimated	40%			
1.25.4	What portion of the sewer network consists of Brick Type Sewers	% Estimated	0%			
1.25.5	What portion of the sewer network consists of Other Materials	% Estimated	0%			
1.26	Total number of Storm Water Overflows (Enter '1' if none and state under Item 1.27 that there are no SWOs in the network; <b>do not leave blank</b> )	Nr	1			
1.27	What Screening or other mechanical devices are employed at the storm water overflows	20mm coarse screen				
	SWO No. _ located at _____	Describe	SW002			
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)		Q3			
	SWO No. _ located at SW2	Describe	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)					
	SWO No. _ located a SW1	Describe	Moderate			
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. _ located at ___ SW2___	Primary screen	Sensitive			
	SWO No. _ located at ___ SW1_____	Final discharge	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. _ located at ___ SW1 and SW2_____	Not listed				
1.28.5	With reference to the SWO's detailed above define do the receiving waters have any other designations.					
	SWO No. _ located at _____	Designation				
<b>Section 1.5 Waste Water Works - Pumping Stations</b>						
1.29	Number of Pumping Stations (operated by the Local Authority)	Nr	0			
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				
1.31.2	What portion of the rising mains consists of plastic pipes	% Measured				

1.31.3	What portion of the rising mains consists of other materials	% Estimated				
1.32	Discharge Capacity of the Pump Set (s) at normal duty point					
	At Pump Station __ at _____					
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%)	%				
1.34	Available Storage Capacity at Pump Stations					
	At Pump Station __ at _____	m <sup>3</sup>				
1.35	Total Number of " <b>Licensed Secondary Discharge Points and Stormwater Overflows</b> " at pumping stations	Nr				
1.36	Total Number of " <b>Emergency Overflow Points</b> " at pumping stations	Nr				
1.37	What Screening or other mechanical devices are employed at the secondary discharge points or emergency overflows ?					
	At Pump Station __ at _____	Describe				
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 _____	Describe				
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	Enter Status			
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 _____		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 _____	Designation				

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	Designation				
1.39	Estimated Number of Private Pumping Stations within the agglomeration (not operated by the Local Authority)	Nr	1????			
	<b>Section 1.6 Reporting</b>					
	<b>Section 1.6.1 Reported Number of Sewer Related Complaints</b>					
1.40	Number of Reported Complaints	Nr	0			
1.41	Number of Reported Complaints which have been rectified	Nr	0			
	<b>Section 1.6.2 Reported/Recorded/Estimated Number of Secondary Discharges</b>					
1.42	Number of Reported Secondary Discharges	Nr	0			
1.43	Number of Recorded Secondary Discharges	Nr	0			
1.44	Estimated Total Number of Secondary Discharges	Nr	0			
	<b>Section 1.6.3 Reported/Recorded/Estimated Number of Emergency Overflow Discharges from Pumping Stations</b>					
1.45	Number of Reported Emergency Overflow Discharges	Nr				
1.46	Number of Recorded Emergency Overflow Discharges	Nr				
1.47	Estimated Total Number of Emergency Overflow Discharges	Nr				
	<b>Section 1.7 Operational Staff</b>					
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					
1.48.1	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.					
1.48.2	1 No full time Caretaker		30%			
1.48.3	1 No full time Assistant Caretaker		30%			
1.48.4						
	<b>Waste Water Works - Investment Details</b>	<b>Unit</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
	<b>Section 1.8 Capital Investment works carried out since most recent report (including works not included on WSIP Programme or not WSIP funded)</b>					
1.49	Sewers Upgraded or Replaced	m	0			
1.50	Sewers Rehabilitated	m	0			
1.51	Manholes Rehabilitated	Nr	0			
1.52	Local Repairs	Nr	0			
1.53	Total Length of sewers Upgraded, Replaced or Rehabilitated	m	0			
1.54	Pumping Stations Operated by Local Authority Upgraded or Repaired	Nr	0			
1.55	WWTW operated by Local Authority Upgraded or Replaced	Nr	0			
1.56	In the following two cells describe the actual Capital Investment undertaken in the reporting period.					
1.56.1	For example : Sewer Rehabilitation Contract Works being undertaken under the WSIP		0			
1.56.2						
	<b>Section 1.9 Licence Specified Improvements Works</b>					

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>		No works			
<b>Section 1.10 Other Updates Since Last Report</b>						
1.58	<i>For example : 50% of the sewer network is currently being upgraded under the WSIP with an investment of €1.5m in 2010.</i>					
1.59	<i>For example : 2% of the sewer network is currently being replaced under the Local Authorities Annual Maintenance Fund</i>					
1.60						
1.61						
1.62						

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	<a href="#">Has a Hydraulic Performance Assessment been undertaken for the Sewer Network (e.g., Computer Model or other Engineering Design or Design Review) ?</a>	No	40		If the answer is <b>No</b> 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 <b>Yes</b> 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 ?		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 ongoing works select "less than 5".
2.2	<a href="#">Has a Dynamic Computer Model been used to Assess the Hydraulic Performance of the Sewer Network ?</a>	No	10		Computer Model means a Hydroworks/Infoworks Model, Micro-Drainage Model or equivalent.
2.3	<a href="#">Has a Manhole Survey been undertaken in accordance with WRc Documentation "Model Contract Document for Manhole Location Surveys and the Production of Record Maps" ?</a>	No	10		If the answer is <b>No</b> assess the need and cost benefit of undertaking a Manhole Survey and complete Query 2.12. If the answer is <b>Yes</b> 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	<a href="#">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" ?</a>	No	20		If the answer is <b>No</b> assess the need and cost benefit of undertaking a Flow Monitoring Survey and complete Query 2.12. If answer is <b>Yes</b> Proceed to Query 2.5
2.5	<a href="#">What was this Flow Survey Information Used for ?</a>				
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	<a href="#">Have Performance Criteria been developed to determine the short, medium or long term capacity of the sewer network ?</a>	No	10		If the answer is <b>No</b> assess the Future Needs of the Sewer Network and complete Query 2.12. If the answer is <b>Yes</b> proceed to Query 2.8
2.7	<a href="#">How many flood events resulting from surcharge in the network have occurred in the past 3 years?</a>	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	<a href="#">Are there deficiencies in performance criteria within the sewer network ?</a>	Yes	20		If the answer is <b>No</b> , Proceed to Query 2.10 and complete Query 2.12. If the answer is <b>Yes</b> proceed to Query 2.9
2.9	<a href="#">Have the causes of these deficiencies in the Performance Criteria been identified and rectified ?</a>	No	10		If the answer is <b>No</b> , consider further examination of the hydraulic model (if available) and complete Query 2.12. If the answer is <b>Yes</b> proceed to Query 2.10
2.10	<a href="#">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</a>	N/A	0		If the answer is <b>No</b> , consider further development of the Hydraulic Assessment (or model if available) and complete Query 2.12. If the answer is <b>Yes</b> proceed to Query 2.11
2.11	<a href="#">Has an Impermeable Area Survey been carried out for the agglomeration or parts of the agglomeration ?</a>	No	10		If the answer is <b>No</b> , 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.
<b>Total Risk Assessment Score (RAS)</b>			<b>135</b>		
2.12	<a href="#">Prepare Assessment of Needs &amp; Sewer Upgrade Implementation Plan</a>	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	<a href="#">What Environmental or Discharge Quality Data is available with regard to the sewer network ?</a>	up-to-date electronic or paper database exists	0		Select N/A if no discharges, secondary discharges or overflows from network; if discharges do exist complete Query 3.12
3.1.1	<a href="#">Do trade effluents discharge to the sewer network?</a>	No	0		If the answer is <b>No</b> , proceed to Query 3.1.2. If the answer is <b>Yes</b> , Proceed to Query 3.2
3.1.2	<a href="#">Are there Storm Water Overflows within the network ?</a>	Yes	20		If the answer is <b>No</b> , proceed to Query 3.1.3. If the answer is <b>Yes</b> , Proceed to Query 3.3
3.1.3	<a href="#">Are there Secondary Discharges within the network (excluding Emergency Overflows at Pump Stations)?</a>	No	0		If the answer is <b>No</b> , proceed to Query 3.1.4.
3.1.4	<a href="#">Is there any evidence that exfiltration is occurring from the network ?</a>	No	0		If the answer is <b>No</b> , does all wastewater enter a wastewater treatment plant (insert summary details in the AER)? If <b>Yes</b> , Proceed to Query 3.6
3.2	<a href="#">If Answer to Query 3.1.1 is "Yes", what % of trade effluents have a licence to Discharge to the Public Sewer ?</a>	N/A	0		Select N/A if answer to Query 3.1.1 is <b>No</b> . If not all trade effluents are licenced, Local Authority should consider issuing and controlling such discharges under the appropriate Legislation.
3.2.1	<a href="#">Are all licenced trade Discharges compliant with their relevant licence and associated conditions</a>	N/A	0		Answer N/A if none of the trade effluents are licenced. Answer No if this information is unknown. If the answer is <b>Unknown</b> or <b>No</b> , consider issuing a direction to the relevant Licencee. If the answer is <b>Yes</b> , no further action is needed.
3.2.2	<a href="#">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)</a>	0 - 10%	5		Select <b>N/A</b> if answer to Query 3.2.1 is Yes. If N/A is selected as answer to Query 3.2.2
3.3	<a href="#">In accordance with the DoEHLG paper "Procedures &amp; Criteria in relation to Storm Water Overflows", what % of storm water overflows in the system have been classified for their significance?</a>	<25%	50		If the answer is <b>No</b> , consider a review of each discharge within the sewer network complete and Query 3.11. If the answer is <b>Yes</b> , proceed to Query 3.6
3.4	<a href="#">Have samples from any Secondary Discharges within the system been analysed ?</a>	No	30		Select N/A if no secondary discharges in system. If the answer to Query 3.4 is <b>No</b> , consider examining the quality of each secondary discharge within the sewer network complete Query 3.11. If the answer is <b>Yes</b> , proceed to Query
3.5	<a href="#">What percentage of discharges from the system are known to cause environmental pollution of the receiving waters ?</a>	31 - 40%	40		If the answer is greater than 50% then detail, in the AER, the Improvement Programme necessary to reduce this percentage.
3.6	<a href="#">In relation to possible exfiltration has a risk analysis of ground water contamination or pollution been undertaken ?</a>	No	20		Select N/A if answer to Query 3.1.4 is <b>No</b> . If the answer is <b>No</b> , consider undertaking ground water risk analysis and complete Query 3.12 If the answer is <b>Yes</b> , proceed to Query 3.6
3.6.1	<a href="#">If Answer to Query 3.6 is "Yes", have any groundwater aquifers been identified in the area of the Network and/or Discharge Points?</a>	N/A	0		Select <b>N/A</b> if no risk analysis of groundwater contamination has been undertaken.
3.6.2	<a href="#">If Answer to Query 3.6.1 is "Yes", state the classification of groundwater aquifer identified in the area?</a>	N/A	0		Select <b>N/A</b> if no risk analysis of groundwater contamination has been undertaken.
3.6.3	<a href="#">In relation to Query 3.6.1, is the aquifer used as a source for Public, Private or Group Water Supply Schemes?</a>	No	0		Select <b>N/A</b> if no risk analysis of groundwater contamination has been undertaken.
3.7	<a href="#">Has an Impact Assessment of each Storm Water Overflow been undertaken in accordance with the DoEHLG paper "Procedures &amp; Criteria in relation to Storm Water Overflows" including setting performance criteria?</a>	No	40		If the answer is <b>No</b> , consider assessing the risk category of the receiving waters. If the answer is <b>Yes</b> , proceed to Query 3.8 and provide summary details of the assessment in the AER.
3.8	<a href="#">What percentage of storm water overflows comply with the performance criteria referred to in Query 3.7?</a>	N/A	30		Select N/A if answer to Query 3.7 is <b>No</b> or if there are no SWOs in system. <b>(Risk Score is locked at 0 if no SWOs in system is stated in Agglomeration Details)</b>

3.9	<u>Have the causes of these Capacity Deficiencies (storm water overflows &amp; 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 <b>No</b> , consider further examination of the environmental model as appropriate model.
<b>Total Risk Assessment Score (RAS)</b>		<b>250</b>			
3.10	<u>Prepare Assessment of Needs &amp; 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	<a href="#">Has a CCTV Survey been undertaken in accordance with WRc Documentation "Model Contract Document for Sewer Condition Inspections" and "Manual of Sewer Condition Classification" ?</a>	No	10		If the answer is <b>No</b> assess the need and benefit of undertaking CCTV Survey. If <b>Yes</b> 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	<a href="#">What was this CCTV Survey Information Used for?</a>	N/A	10		Select N/A if answer to Query 4.1 is NO.
4.3	<a href="#">Has the CCTV Survey been used to Assess the Structural Condition of the Sewer Network or targeted sections of the Sewer Network?</a>	No	5		If no CCTV has been undertaken, select "No" response. If the answer is <b>No</b> assess the need and benefit of undertaking an assessment of the Structural Condition of the Sewer Network. If the answer is <b>Yes</b> proceed to Q
4.4	<a href="#">Have Performance Criteria been developed to determine the short, medium or long term structural condition of the sewer network ?</a>	No	5		If the answer is <b>No</b> , 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 <b>Yes</b> 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 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)	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 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		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		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		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 automatically set at the maximum of 140.
4.5	<a href="#">What % of the deficiencies, as detailed in Items 4.4.1, 4.4.2 and 4.4.3, have been rectified ?</a>	N/A	35		Select N/A if answer to Query 4.4 is <b>No</b> . If the answer is <b>No</b> , Proceed to Query 4.6 If the answer is <b>Yes</b> , what monitoring is in place to ensure continued acceptance of structural condition? Proceed to Query 4.7
4.6	<a href="#">Have the causes of the Structural Deficiencies (Grades 3, 4 and 5) been identified or is there a Preventative Maintenance Programme in place?</a>	No	10		If the answer is <b>No</b> , consider further examination of the sewer network, the structural loading conditions, gradients and possible H <sub>2</sub> S Formation. If Yes completed Query 4.7
<b>Total Risk Assessment Score (RAS)</b>			<b>150</b>		
4.7	<a href="#">Prepare Assessment of Needs &amp; Sewer Rehabilitation Implementation Plan</a>	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	<a href="#">Are complaints of an environmental nature recorded and held in a central database?</a>	Yes	0		Consider setting up Central Database for Complaints
5.2	<a href="#">Is there an emergency response procedure in place?</a>	Yes	0		Consider setting up target response times for dealing with Complaints
5.3	<a href="#">What has been the highest frequency of flooding in the network due to hydraulic inadequacy, over the past 5 years?</a>	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	<a href="#">What has been the highest frequency of flooding in the network due to operational causes over the past 5 years?</a>	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.
5.5	<a href="#">What has been the highest frequency of surcharging of critical sewers in the network, over the past 5 years?</a>	Once/yr	2		Select the highest number of events in any 12 month period.
5.6	<a href="#">What has been the highest frequency of reportable incidents in the network, over the past 5 years?</a>	None	0		Select the highest number of events in any 12 month period.
5.7	<a href="#">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?</a>	Once/yr	2		Select the highest number of events at any given Pumping Station in any 12 month period.
5.8	<a href="#">What has been the highest frequency of blockages in sewers in the network over the past 5 years?</a>	0 - 0.01/km/yr	4		Select the highest number of events per km of sewer network in any 12 month period.
5.9	<a href="#">What has been the highest frequency of collapses in sewers in the network over the past 5 years?</a>	None	0		Select the highest number of events in any 12 month period.
5.10	<a href="#">What has been the highest frequency of bursts in rising mains in the network over the past 5 years?</a>	None	0		Select the highest number of events in any 12 month period.
<b>Total Risk Assessment Score (RAS)</b>			<b>16</b>		
5.11	<a href="#">Prepare Up Dated Operational and Maintenance Plan</a>				

## Appendix 7.4 Priority Substances

### Outlet

Location			Outlet WWTP
Lab. Ref			142505887
Date			09/12/2014
Metals Tested	Units	LOQ	Result
Chromium-Total	ug/L	3	<3
Copper-Total	mg/L	0.003	0.005
Lead-Total	ug/L	0.9	0.9
Zinc-Total	ug/L	10	56
Mercury-Total	ug/L	0.06	<0.06
Nickel-Total	ug/L	1.5	<1.5
Arsenic-Total	ug/L	1	<1
Barium-Total	ug/L	3	5.7

### Metal Analysis Surface Water

Location			Upstream WWTP	Downstream WWTP
Lab. Ref			142505885	142505888
Date			09/12/2014	09/12/2014
Metals Tested		LOQ	Results	Results
Arsenic	ug/l	0.2	<0.2	<0.2
Chromium	ug/l	1	<1	<1
Copper	ug/l	0.003	<0.003	<0.003
Lead	ug/l	0.3	<0.3	<0.3
Mercury	ug/l	0.02	0.03	<0.02
Nickel	ug/l	0.5	0.6	0.5
Barium	ug/l	1	7.8	7.9
Zinc	ug/l	1	5.5	6.4

## Appendix 7.5 Quality Results

Location	Date	pH	Cond	BOD	COD	SS	Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Ortho P	Total N	Total P	Flow
				(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	M3/day
<b>Killygordon</b>													
<b>Febuary</b>													
Upstream	24/02/2014	6.78	59	<1.0	NT	<6	<0.040	0.222	<0.010	<0.010	<1	0.07	
Inlet	24/02/2014	7.2	283	56.4	297	98.5	10.4	0.585	0.118	3.05	30.7	4.21	300
Outlet	24/02/2014	7.44	343	3.36	10	5	5.2	2.99	<0.010	0.9	9	0.886	300
Downstream	24/02/2014	6.78	55.8	<1.0	NT	<6	<0.040	0.185	<0.010	<0.010	<1	0.19	
<b>April</b>													
Upstream	30/04/2014	7.03	177	<1.0	NT	<6.0	0.101	0.338	<0.010	<0.010	<1	0.015	
Inlet	30/04/2014	8.58	916	297	812	172	46	0.126	0.075	8	66.6	9.29	148
Outlet	30/04/2014	7.3	636	4.6	43	20	0.148	3.96	0.15	3.6	23.1	4.21	148
Downstream	30/04/2014	7.31	172	1	NT	<6.0	0.102	0.248	<0.010	<0.010	<1	0.016	
<b>June</b>													
Upstream	25/06/2014	7.14	140	<1	NT	<6	0.093	0.278	<0.010	<0.010	<1	0.03	
Inlet	25/06/2014	8.49	887	396	1957	802	93	<0.100	<0.010	11	86	12.1	243
Outlet	25/06/2014	7	553	<1	50	<6	0.151	18.1	0.05	5.1	29.5	5.75	243
Downstream	25/06/2014	7.26	135	<1	NT	<6	0.052	0.237	<0.010	<0.010	<1	0.022	
<b>August</b>													
Upstream	22/08/2014	7.11	83.9	1.48	NT	3.25	<0.040	<0.100	<0.010	<0.010	<1	<0.010	
Inlet	22/08/2014	8.67	792	295	316	414	75	<0.100	<0.010	7.79	86.9	9.68	126
Outlet	22/08/2014	6.49	536	13.8	59	26	2.18	11.1	0.104	4.05	35	4.45	126
Downstream	22/08/2014	7.02	73	1.62	NT	2.5	<0.040	<0.100	<0.010	0.012	<1	0.028	
<b>October</b>													
Upstream	21/10/2014	6.21	59	1.34	NT	11.8	0.046	<0.100	<0.010	<0.010	<1	0.044	
Inlet	21/10/2014	7.6	667	98.4	258	92	17.4	0.199	<0.010	3.82	39.6	4.62	252
Outlet	21/10/2014	6.77	368	1	43	19.5	5.27	4.09	<0.010	2.22	15.8	2.53	252
Downstream	21/10/2014	6.2	59	1.37	NT	18.2	0.04	<0.100	<0.010	<0.000	<1	0.048	
<b>December</b>													
Upstream	09/12/2014	6.61	84	<1	NT	<6	0.043	0.177	<0.010	<0.010	<1	0.016	
Inlet	09/12/2014	6.88	517	58	170	6	15	1.73	0.193	3.84	28.3	6.87	252
Outlet	09/12/2014	6.87	417	1.72	23	<6	<0.040	7.33	0.072	1.41	12.5	2.09	252
Downstream	09/12/2014	6.62	78	<1	NT	<6	<0.040	0.139	<0.010	<0.010	<1	0.013	

Location	Lab. Ref	Date	FLOW (m3/day)	pH	BOD (mg/l)	COD (mg/l)	SS (mg/l)	NH3- (as N) (mg/l)	Ortho P (mg/l)	Reported to EPA
Schedule A										
ELV			continuous (Estimated)	6-9	25 50	125 250	35 87.5	5 6	9 9.56	Reportable
Outlet	142501503	24/02/2014	300	7.44	3.36	10	5	5.2	0.9	
Outlet	142502395	30/04/2014	148	7.3	4.6	43	20	0.148	3.6	
Outlet	142503200	25/06/2014	243	7	<1	50	<6	0.151	5.1	
Outlet	142504155	22/08/2014	126	6.49	13.8	59	26	2.18	4.15	
Outlet	142505223	21/10/2014	252	6.77	1	43	19.5	5.27	2.22	
Outlet	142505887	09/12/2014	252	6.87	1.72	23	<6	<0.040	1.41	

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)	Comment
<b>Influent mass loading (kg/year )</b>	12,775	40,561	16,863	511	3,577	
<b>Effluent mass emission (kg/year)</b>	256	2,427	894	192	1,341	
<b>% Efficiency (% reduction of influent load)</b>	98%	94%	94%	62%	62%	

Location	Lab Ref	Date	BOD	FLOW	BOD	PE
				(m3/day)	Kg/day	
			Mg/l			
Inlet	142501502	24/02/2014	56.4	300	16.92	282
Inlet	142502394	30/04/2014	297	148	43.956	732.6
Inlet	142503199	25/06/2014	396	243	96.228	1603.8
Inlet	142504154	22/08/2014	294.8	126	37.1448	619.08
Inlet	142505222	21/10/2014	98.4	252	24.7968	413.28
Inlet	142505886	09/12/2014	58	252	14.616	243.6
				220.16667	Average PE	649

Killygordon

Location	Lab Ref	Date	BOD (mg/l)	COD (mg/l)	SS (mg/l)	Total N (mg/l)	Total P (mg/l)	Flow	Daily Mass Flow BOD kgs/D ay	Daily Mass Flow COD kgs/D ay	Daily Mass Flow SS kgs/D ay	Daily Mass Flow Total N kgs/D ay	Daily Mass Flow Total P kgs/D ay	% Reduction BOD	% Reduction COD	% Reduction SS	% Reduction TN	% Reduction TP				
<b>February</b>																						
Inlet	142501502	24/02/2014	56.4	297	98.5	30.7	4.21	300	16.92	89.1	29.55	9.21	1.263									
Outlet	142501503	24/02/2014	3.36	10	5	9	0.886	300	1.008	3	1.5	9	0.2658	94%	96%	98%	2%	80%				
<b>April</b>																						
Inlet	142502394	30/04/2014	297	812	172	66.6	9.29	148	43.956	120.176	25.456	9.8568	1.3749									
Outlet	142502395	30/04/2014	4.6	43	20	23.1	4.21	148	0.6808	6.364	2.96	11	0.6231	99%	94%	88%	0%	54%				
<b>June</b>																						
Inlet	142503200	25/06/2014	396	1957	802	86	12.1	243	96.228	475.551	194.886	20.898	2.9403									
Outlet	142503199	25/06/2014	1	50	6	29.5	5.75	243	0.243	12.15	1.458	13	1.3973	99%	97%	99%	38%	54%				
<b>August</b>																						
Inlet	142504154	22/08/2014	294.8	316	414	86.9	9.68	126	37.1448	39.816	52.164	10.9494	1.2197									
Outlet	142504155	22/08/2014	13.8	59	26	35	4.45	126	1.7388	7.434	3.276	15	0.5607	94%	99%	94%	0%	53%				
<b>October</b>																						
Inlet	142505223	21/10/2014	98.4	258	92	39.6	4.62	252	24.7968	65.016	23.184	9.9792	1.1642									
Outlet	142505223	21/10/2014	1	43	19.5	15.8	2.53	252	0.252	10.836	4.914	17	0.6376	99%	83%	78%	0%	45%				
<b>December</b>																						
Inlet	142505886	09/12/2014	58	170	6	28.3	6.87	252	14.616	42.84	1.512	7.1316	1.7312									
Outlet	142505887	09/12/2014	1.72	23	6	12.5	2.09	252	0.43344	5.796	1.512	19	0.5267	97%	86%	0%	0%	69%				
<b>TOTAL</b>																						