

Annual Environmental Report 2014

Agglomeration Name:	Knockaconny
Licence Register No.	D0463-01



Table of Contents

Section 1. Executive Summary and Introduction to the 2014 AER	1
1.1 Summary report on 2014	1
Section 2. Monitoring Reports Summary	2
2.1 Summary report on monthly influent monitoring	2
2.2 Discharges from the agglomeration	3
2.3 Ambient monitoring summary	5
2.4 Data collection and reporting requirements under the Urban Waste Water Treatment Directive	5
2.5 Pollutant Release and Transfer Register (PRTR) - report for previous year	5
Section 3 Operational Reports Summary	6
3.1 Treatment Efficiency Report	6
3.2 Treatment Capacity Report	6
3.3 Extent of Agglomeration Summary Report	6
3.4 Complaints Summary	7
3.5 Reported Incidents Summary	7
3.6 Sludge / Other inputs to the WWTP	8
Section 4. Infrastructural Assessments and Programme of Improvements	9
4.1 Storm water overflow identification and inspection report	9
4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.	9
Section 5. Licence Specific Reports	12
5.1 Priority Substances Assessment	13
5.2 Drinking Water Abstraction Point Risk Assessment.	13
5.3 Shellfish Impact Assessment Report.	13
5.4 Toxicity / Leachate Management	13
5.5 Toxicity of the Final Effluent Report	13
5.6 Pearl Mussel Measures Report	14
5.7 Habitats Impact Assessment Report	14
Section 6. Certification and Sign Off	15
Section 7. Appendix	16

Section 1. Executive Summary and Introduction to the 2014 AER

1.1 Summary report on 2014

This Annual Environmental Report has been prepared for D0463-01, Knockaconny, 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:

- Priority substances assessment

The agglomeration is served by a wastewater treatment plant with a Design PE of 1000. The treatment process includes the following:-

- preliminary treatment
- secondary treatment - RAS

The final effluent from the Primary Discharge Point was non-compliant with the Emission Limit Value for Ortho-phosphate in 2014.

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

- Ortho-phosphate
- Ammonia

0 kgs sludge were removed from the wastewater treatment plant in 2014. Sludge was transferred to on site drying beds.

There were 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)	Ammonia (mg/l)	Ortho P (mg/l)	Hydraulic Loading (m3/d)	Organic Loading (PE/day)
Number of Samples	4	5	5	5	4		
Annual Max.	467	1470	630	120	5.32	432	1666
Annual Mean	207.3	551.4	285.4	56.67	3.08	90	304

Significance of results

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

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

2.2 Discharges from the agglomeration

Table 2.2 - Effluent Monitoring Summary

	pH	cBOD (mg/l)	COD (mg/l)	SS (mg/l)	Total P (mg/l)	Ortho P (mg/l)	Ammonia (mg/l)	Total N (mg/l)	Comment
WWDL ELV (Schedule A)	6 - 9	20	125	35	N/A	3	5	N/A	
ELV with Condition 2 Interpretation included	No allowable failures – No deviation allowed	1 allowable failure provided under 100% of ELV (40 mg/l)	1 allowable failure provided under 100% of ELV (250 mg/l)	1 allowable failure provided under 150% of ELV (87.5 mg/l)	N/A	8 out of 10 consec. samples shall not exceed ELV. No individual result shall exceed ELV by more than 20% = (3.6 mg/l)	8 out of 10 consec. samples shall not exceed ELV. No individual result shall exceed ELV by more than 20% = (6 mg/l)	N/A	
Number of sample results	5	6	6	6	N/A	5	6	N/A	
Number of sample results above WWDL ELV	0	0	0	0	N/A	5	1	N/A	
Number of sample results above ELV with Condition 2 Interpretation included	0	0	0	0	N/A	5	0	N/A	
Annual Mean (for parameters where a mean ELV applies)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Overall Compliance	PASS	PASS	PASS	PASS	N/A	FAIL	PASS	N/A	

(Pass/Fail)									
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Significance of results

The WWTP was non-compliant with the ELV for Ortho-phosphate set in the wastewater discharge licence. There were 5 samples non-compliant with the ELVs in relation to Knockaconny. The non-compliance is due to elevated readings of Ortho-P, which could be alleviated by ferric dosing system installation during 2015. The impact on receiving waters is assessed further in Section 2.3.

2.3 Ambient monitoring summary

Table 2.3 - Ambient Monitoring Report Summary

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Current EQS Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
Upstream monitoring point	E268906 N335795	RS03B010640	Good	N/A
Downstream monitoring point	E269003 N335758	RS03B010641	Good	No

The results for the upstream and downstream monitoring are included as in Appendix 7.2.

Significance of results

The WWTP was non-compliant with the ELV for Ortho-phosphate set in the wastewater discharge licence as detailed in Section 2.2.

The discharge from the wastewater treatment plant does not have an observable impact on the water quality status. There is an increase in the concentration of Ortho-phosphate downstream however, the EQS current status is 'Good' upstream and downstream of the WWTP.

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

The electronic submission of data was completed on a monthly basis to EPA through MDS (EDEN) in XML format.

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

A PRTR is not required as the agglomerations 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

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Ammonia (kg/yr)	Comment
Influent mass loading (kg/year)	6663	20889	9548	1113	
Effluent mass emission (kg/year)	119	579	300	36	
% Efficiency (% reduction of influent load)	98	97	97	97	

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/year)	19000
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/year)	82855
Hydraulic Capacity – Current loading (m3/year)	33000
Hydraulic Capacity – Remaining (m3/year)	50000
Organic Capacity - Design / As Constructed (PE)	1000
Organic Capacity - Current loading (PE)	304
Organic Capacity – Remaining (PE)	696
Will the capacity be exceeded in the next three years? (Yes / No)	No

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	100%
Load collected in the agglomeration that enters treatment plant	100%
Load collected in the sewer network but discharged without treatment	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 based on influent monitoring as detailed in Section 2.1 above.

3.4 Complaints Summary

There were no complaints of an environmental nature related to the discharge to waters from the Knockaconny WWTP in 2014.

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 Note 1	Reported to EPA (Yes/No)	Closed (Y/N)
ELV exceedance	Ortho P incidents	No ferric dosing taking place	5	Ferric dosing system to be installed 2015	No	Yes	Yes

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

Table 3.5.2 - Summary of Overall Incidents

Number of Incidents in 2014	5
Number of Incidents reported to the EPA via EDEN in 2014	3
Explanation of any discrepancies between the two numbers above	condition 2 interpretation used incorrect percentage to exceed ELV

Irish Water are in continuous communication with Local Authorities reiterating the requirement to report incidents to the EPA as per Waste Water Discharge Licence Requirements. Discussions in relation to this matter are also progressing at senior management level between Irish Water and the Local Authorities. In addition to this Incident Management training will also be provided to Local Authorities in 2015 to address concerns associated with incident classification, reporting requirements and incident notification.

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	PE/year	% of load to WWTP	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	0	0	0	N	N
Industrial / Commercial Sludge	0	0	0	N	N
Landfill Leachate (delivered by tanker)	0	0	0	N	N
Landfill Leachate (delivered by sewer network)	0	0	0	N	N
Other (specify)	0	0	0	N	N

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 is included in Appendix 7.3. 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 / 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
SW002	268917E 335781N	Yes	Low	Compliant	0	Unknown	Unknown	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)?	N/A
How much sewage was discharged via SWOs in the agglomeration in the year (p.e.)?	N/A
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2014?	N/A
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO assessment includes the requirements of Schedule A3 & C3	Appendix 7.3
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	No

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

The Improvement Programme is included in Appendix 7.4.

The Improvement Programme report 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 (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
None	N/A	N/A	N/A	N/A	N/A	N/A	

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
Implement a phosphorus removal system	Installation of ferric dosing system lower Ortho P levels discharging from the WWTP	Condition 5.2	20%	2015	
Mechanical screener at inlet works	To remove screenings at inlet works to prevent them going forward into treatment process	Condition 5.2	0%	Unknown	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.
No record or measurement of outflows or flows into river.	Install magmeter flow measurement / recorder device to measure flows	Condition 5.2	0%	Unknown	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.

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:	<i>Risk Assessment Rating (High, Medium, Low)</i>	<i>Risk Assessment Score</i>	<i>Comment</i>
Hydraulic Risk Assessment Score	<i>low</i>	<i>Unknown</i>	<i>SIRAT not used in 2014</i>
Environmental Risk Assessment Score	<i>low</i>	<i>Unknown</i>	<i>SIRAT not used in 2014</i>
Structural Risk Assessment Score	<i>low</i>	<i>Unknown</i>	<i>SIRAT not used in 2014</i>
Operation & Maintenance Risk Assessment Score	<i>low</i>	<i>Unknown</i>	<i>SIRAT not used in 2014</i>
Overall Risk Score for the agglomeration	<i>low</i>	<i>Unknown</i>	<i>SIRAT not used in 2014</i>

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 Section 4).
Priority Substances Assessment	No	Yes	Appendix 7.6
Drinking Water Abstraction Point Risk Assessment	No	No	N/A
Habitats Impact Assessment	No	No	N/A
Shellfish Impact Assessment	No	No	N/A
Pearl Mussel Report	No	No	N/A
Toxicity/Leachate Management	No	No	N/A
Toxicity of Final Effluent Report	No	No	N/A

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report
Priority Substances Assessment	Yes	Appendix 7.6. No further screening is required for Knockaconny WWTP with regard to Priority substances.
Drinking Water Abstraction Point Risk Assessment	N/A	N/A
Habitats Impact Assessment	N/A	N/A
Shellfish Impact Assessment	N/A	N/A
Pearl Mussel Report	N/A	N/A
Toxicity/Leachate Management	N/A	N/A
Toxicity of Final Effluent Report	N/A	N/A

5.1 Priority Substances Assessment

The Priority Substances Assessment report is included in Appendix 7.6. 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>
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	Desk Top Study
Does the assessment include a review of Trade inputs to the works?	Yes
Does the assessment include a review of other inputs to the works?	Yes
Does the report include an assessment of the significance of the results where a listed material is present in the discharge? (e.g. impact on the relevant EQS standard for the receiving water)	Yes
Does the assessment identify that priority substances may be impacting the receiving water?	No
Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?	Yes

5.2 Drinking Water Abstraction Point Risk Assessment.

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

5.3 Shellfish Impact Assessment Report.

The Shellfish Impact Assessment report is not required for Knockaconny.

5.4 Toxicity / Leachate Management

The Toxicity / Leachate Management Assessment report is not required for Knockaconny.

5.5 Toxicity of the Final Effluent Report

The Toxicity of the Final Effluent Assessment report is not required for Knockaconny.

5.6 Pearl Mussel Measures Report

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

5.7 Habitats Impact Assessment Report

The Habitats Impact Assessment Report is not required for Knockaconny.

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>	N/A
Is there a need to request/advise the EPA of any modifications to the existing WWDL? Refer to Condition 1.7 (changes to works/discharges) & Condition 4 (changes to monitoring location, frequency etc.)	No
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements <i>(insert lines as required)</i>	N/A
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	N/A
List outstanding reports <i>(insert lines as required)</i>	Sewer Integrity Risk Assessment

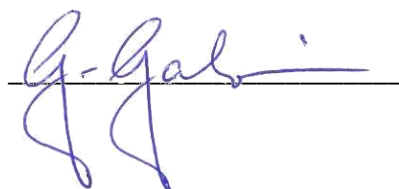
Declaration by Irish Water

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:



Date: 15/04/2015

Gerry Galvin
Chief Technical Advisor

Section 7. Appendix

Appendix 7.1 - Annual Statement of Measures

Appendix 7.2 - Ambient monitoring summary

Appendix 7.3 - Storm water overflow identification and inspection report

Appendix 7.4 – Specified Improvement Programme

a) Specified Improvement Programme

b) Programme of Improvements

Appendix 7.6 - Priority substances assessment

Appendix 7.1 - Annual Statement of Measures

Annual Statement of Measures

Risk /Description of issue	Risk Score	Mitigation Measure to be taken	Outcome	Action	Date for Completion	Owner/ Contact Person
Ortho-P ELV exceedances in 2014 and beyond	4x4	Implement a phosphorus removal system to lower ortho-P levels discharging from the WWTP	Work ongoing	Install a ferric dosing system	2015	C McCrossan
Screenings bypassing hand raked screen-	3x3	Fit Mechanical screener at inlet works to remove screenings at inlet works to prevent them going forward into treatment process			The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.	C McCrossan
No record or measurement of outflows or flows into river.	5x5	Install magmeter flow measurement/recorder device to measure flows			The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.	C McCrossan

Appendix 7.2 - Ambient monitoring summary

Upstream Results

Sample Date	Ammonia (N)	BOD, 5 days with inhibition (CBOD)	Orthophosphate (P)	PH	DO	Temperature
	mg/l	mg/l	mg/l		mg/l	oC
18/02/2014	0.053	3	0.041	7	11.8	7.2
22/04/2014	0.477	1	0.014	8.1	9.52	12.4
04/06/2014	0.379	1	0.07	8	8.84	14.1
24/06/2014	0.032	1	0.033	8.2	9.09	15.7
12/08/2014	0.047	1	0.05	8	8.84	14.5
17/11/2014	0.079	1	0.045	7.8	9.33	9.3
Average	0.18	1.33	0.04	7.85	9.57	12.20

Downstream results

Sample Date	Ammonia (N)	BOD, 5 days with inhibition (CBOD)	Orthophosphate (P)	PH	DO	Temperature
	mg/l	mg/l	mg/l		mg/l	oC
18/02/2014	0.051	3	0.043	8	12.1	6.2
22/04/2014	0.485	1	0.019	8.1	10.18	10.6
04/06/2014	0.334	2	0.11	8	8.86	15.1
24/06/2014	0.046	1	0.172	8.2	9.58	16.5
12/08/2014	0.043	1	0.048	8	8.9	15.2
17/11/2014	0.071	1	0.047	7.8	9.64	
Average	0.17	1.50	0.07	8.02	9.88	12.72

Appendix 7.3 - Storm water overflow identification and inspection report

Storm water overflow identification and inspection report

As per condition 4.11 of the licence, a report on the investigation for the identification and assessment of storm water overflows is required to be submitted as part of the **second** AER (this being the first AER), including a determination of compliance with the criteria for storm water overflows as set out in the DoECLG 'procedures and Criteria in Relation to Storm Water Overflows,' 1995.

There are no known storm water overflows (SWO) within the sewerage network of the agglomeration. There is one SWO from inlet works at the WWTP that discharges to the Blackwater River, this SWO is listed in Schedule A.4 of the discharge licence.

The Storm Water Overflow (SWO) from the Knockaconny WWTP is as follows, there is no storm tank at the WWTP, there is a storm discharge pipe from the inlet works that discharges to the Blackwater River via the Primary discharge pipe when excessive inflows occur into the plant.

An assessment of this SWO in relation to the 'Procedures and criteria in relation to Storm Water Overflows', 1995 document is undertaken under the relevant sections as follows:

Section 4. 'Assessment Criteria for Existing SWO's':

- (1) It does not cause visual/aesthetic impact or public complaints.
- (2) No analyses have been carried out on this SWO as it activates rarely, only in prolonged or severe storm conditions and there is no monitoring device on it. Plant technician has stated that the overflow wouldn't be activated even in the heaviest storm conditions. However, it is concluded that there would be minimal deterioration in water quality in the receiving water when it operates, as discharge would be diluted due to storm water inflows coinciding with high river flows, thus maximising the assimilative capacity of the receiving water.
- (3) It does not give rise to failure in meeting the requirements of national Regulations on foot of EU Directives as it is not a bathing water, nor a designated River.
- (4) It does not operate in dry weather.

Section 5, 'Options following Assessment'

The 'use of storage' option is considered.

Section 7, 'Use of Storage'

NONE

Appendix 1, Table 2

A. 'Low Significance SWOs'

The SWO is in the 'Low significance SWO' category.

Appendix 2, A. 'Low Significance SWOs'

The volume of any proposed storm tank is assessed using Appendix 2, Table 3 of the DoECLG document as follows:

The nearest flow monitoring data available on the Blackwater River is at the Faulkland Station (NGR 270400; 337900) (OPW Station 03051). The 95-percentile flow (m³/s) is given as 0.05m³/s and DWF as 0.03m³/s

The dilution factor is the river at 95 percentile river flows relative to the dry weather flow to the plant calculated as follows:

$$\begin{aligned}
 \text{WWTP DWF} &= 70\text{m}^3/\text{day} = 0.000810\text{m}^3/\text{s} \\
 \text{Blackwater River 95\% flow} &= 0.05\text{m}^3/\text{s} \\
 \text{Dilution Factor} &= (0.05/0.000810) = 61
 \end{aligned}$$

The storm tank volume required based on a dilution factor > 8 is 'None' (ref Table 3, Appendix 2, DoECLG document). As there is no storage tank employed at the WWTP, it is deemed to comply with this part of the document.

From the assessment of this SWO in relation to the 'Procedures and criteria in relation to Storm Water Overflows', 1995 document, it is concluded that the SWO complies with the document as assessed under section 4.1 of this document.

SWO Identification and Inspection Summary Report Table A

WWDL Name/Code for Storm Water Overflow	SW1 SW overflow point
IGR	268917E 335781N
Included in Schedule A4 of the WWDL	Yes
Compliance with DoEHLG Criteria	Complies as assessed in Section 4.1 of this document
No. of times activated in 2014	0
Total volume discharged (m³)	0
Total volume discharged (P.E.)	0
Estimated/Measured Data	Estimated

Appendix 7.4 – Specified Improvement Programme

a) Specified Improvement Programme

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

As per condition 5.1 of the licence, a programme of infrastructural improvements to maximise the efficiency and effectiveness of the waste water works shall be prepared and submitted:

In the licence, under schedule C, there are no specified improvements. There are no planned improvement works for the WWTP.

The WWTP is considered to be operating efficiently as effluent results are compliant with specified ELVs in the discharge licence with the exception of Ortho P and the WWTP is achieving adequate removal efficiencies. The Ortho P exceedances will be addressed in 2015 by the installation and commissioning of a ferric dosing system. The treatment capacity is addressed in section 3, with adequate remaining capacity at the WWTP.

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:

As discussed in this report, the existing level of treatment at the plant is considered adequate based on ELV compliance and removal efficiencies. There is adequate capacity at the treatment plant.

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

The treatment plant is considered to be operating effectively but there were reportable exceedances in Ortho P for 2014 as the results exceeded the 20% allowable exceedance amount. The Ortho P exceedances will be addressed in 2015 by the installation and commissioning of a ferric dosing system.

(iii) The designations of the receiving water body:

Under the Blackwater water management unit (WMU) action plan, Knockaconny is not suggested to be having an impact on the receiving water as there is adequate dilution in the river at that location. The WMU suggests implementing a Performance Management system, which this report and other performance measures taken are deemed to satisfy.

The receiving Blackwater River is not a designated Salmonid Water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988), but it is identified in part, as sensitive water, at this location, from the confluence of the River Shambles to Newmills Bridge, in terms of the Urban Waste Water Treatment Regulations 2001. The river is not designated as an SPA, SAC or NHA. The Blackwater Water River is in the Neagh Bann river basin district with overall status classified as 'Good' but deemed '1a- at risk' with overall objective to protect its status. The 'point risk source' and potential for impact from the WWTP discharge on the river is categorised as 'not at risk', and the Blackwater Water Management Unit Action Plan (WMU) does not list the WWTP as impacting on the Blackwater River (Ref. WFD website & reports). Ambient monitoring results were assessed in section 2.3 of this report and it is concluded that there is no significant impact from the discharge of the agglomeration on the receiving water quality.

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

This item is addressed in point no. 4.2 (iii) above.

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

There are no industries licensed to discharge to the waste water works.

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:

There is adequate capacity at the treatment plant (ref section 2.1, Table 1.2).

(ii) Leaks from the waste water works:

There are no known leaks at the WWTP site.

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

There are no known misconnections on the Knockaconny network.

(iv) Infiltration by surface water/ground water:

The network is a separate system, therefore during storm conditions/periods of extensive rainfall, inflows into the WWTP don't increase greatly.

b) 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:

There are no specified improvement works in the discharge licence and no planned improvement works for the WWTP.

An assessment of the SWO from a storm tank at the WWTP in relation to the 'Procedures and criteria in relation to Storm Water Overflows', 1995 document, was addressed in section 4.1 of this report, it is concluded that the SWO complies with the document as assessed under section 4.1.

Condition 5.3 (a) and (b) of the licence, the programme of infrastructural improvements shall include a plan for implantation for each individual improvement identified:

There is no specified improvement works under schedule C1 or C2 of the discharge licence. One individual improvement identified for the WWTP is the addition of a ferric dosing system to reduce OrthoP in 2015.

Improvement Summary Table

Improvement Identifier	Improvement Description	Improvement Source	Progress (%)complete d	Expected Completion Date
Implement a phosphorus removal	Lower ortho-P levels discharging form the	Installation of ferric dosing	20%	2015

system	WWTP	system		
Mechanical screener at inlet works	To remove screenings at inlet works to prevent them going forward into treatment process		0%	The improvement programme will be reviewed by Irish Water to assess the works required to comply with the licence condition on a prioritised basis.
No record or measurement of outflows or flows into river.	Install magmeter flow measurement/recorder device to measure flows		0%	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 7.6 - Priority substances assessment

Priority Substance Assessment

Under Schedule B.1 of the licence, there is a requirement that, *Priority Substances that are identified by the licensee in the effluent after undertaking a 'risk based assessment in accordance with the Guidance on the screening for Priority Substances for Waste Water Discharge Licences'*, should be monitored at least annually, by the licensee.

A desktop study is undertaken as follows:

The Knockaconny WWTP catchment area a local business park, IDA site and education centre. There are no section 16 licensed companies discharging to the WWTP, or disposal of same at the waste water works. It can therefore be concluded from this desktop overview that there is no further screening necessary or required for organic compounds or metals. Furthermore, in 2009 when the initial discharge licence application for Knockaconny was compiled, monitoring of the influent and effluent discharges and upstream and downstream locations in the receiving Blackwater River was undertaken and analysed for dangerous substances and submitted with the application. There were no elevated levels of these compounds in the discharge as reported. It is therefore concluded that no further screening is required for Knockaconny WWTP with regard to Priority substances.