Annual Environmental Report

2018

Blackrock

D0188-01

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0188-01, Blackrock, in Louth in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports are included as an appendix to the AER as follows:

1.1 Licence specific reporting included in AER

Assessment / Report	Included in AER
There is no Licence Specific Reports included in the AER.	

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant Blackrock WWTP with a Plant Capacity PE of 7300. The treatment process includes the following:

1.2.1 Blackrock WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Grit settling Channels
Primary Treatment	No	
Secondary Treatment	Yes	Activated Sludge
Nutrient Removal	No	
Tertiary Treatment	No	

The overall compliance of the final effluent with the Emission Limit Values (ELVs) is shown below. More detailed information on the below ELV's can be found in Section 2.2 Discharges from the agglomeration.

1.3 ELV Overview

1.3.1 Blackrock WWTP

Compliance Status	
Were all parameters compliant for Blackrock WWTP treatment plant	No
Where non compliant see Table 2.2.1 for details of parameters	

1.4 Sludge Removal

The amount of sludge removed from the wastewater treatment plant is shown below along with the transported destination of the sludge from the treatment plant.

Treatment Plant	Sludge type	Quantity	Unit	% Dry Solids	Destination
Blackrock WWTP	Liquid Sludge	6099.5	Weight (Tonnes)	1.45	Dundalk

Annual Statement of Measures

The surface aerators will be replaced with FBDA in 2019 which will increase the capacity of the WWTW approx 2000 PE. Automation of sludge wasting has been established. RAS/WAS system has been upgraded and automated - which has provided additional 2 to 3% capacity at the WWTP. A DAP has been initiated for Dundalk and includes Blackrock. Once complete, this will inform the design for the proposed diversion of effluent from Blackrock WWTP to Dundalk WWTP.

2 MONITORING REPORTS SUMMARY

2.1 Summary report on monthly influent monitoring

A summary of influent monitoring for the treatment plant is presented in below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

2.1.1 Influent Monitoring Summary - Blackrock WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	15	461	139.39
COD-Cr mg/l	15	590	303
Total Phosphorus (as P) mg/l	7	8.49	4.25
Total Nitrogen mg/l	6	62.4	32.2
Suspended Solids mg/l	15	214	148.37
Hydraulic Capacity	0	3867.5	1735.76

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 3.5 if applicable.

Significance of Results:

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

2.2 Discharges from the agglomeration

2.2.1 Effluent Monitoring Summary - Blackrock WWTP

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Suspended Solids mg/l	35	87.5	0	14	7	1	35.53	Fail
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	14	4	1	21.33	Fail
Ammonia-Total (as N) mg/l	0	0	0	2	0	0	26.09	Pass
Enterococci (Intestinal) cfu/100ml	0	0	0	3	0	0	2597.93	Pass
ortho-Phosphate (as P) - unspecified mg/l	8	9.6	0	14	0	0	1.43	Pass
Total Nitrogen mg/l	0	0	0	7	0	0	16.46	Pass
E. Coli cfu/100ml	0	0	0	3	0	0	9781.35	Pass
COD-Cr mg/l	125	250	0	14	3	0	83.71	Fail

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Faecal coliforms cfu/100ml	0	0	0	3	0	0	6404.22	Pass
pH pH units	0	0	0	13	0	0	7.64	Pass

Notes:
1– This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 - For parameters where a mean ELV applies

Cause of Exceedance(s):

Inadequate Operational Procedures,

Significance of Results:

The WWTP is non-compliant with the ELV's set in the Wastewater Discharge Licence. Seven samples were non-compliant with the TSS (mg/l) ELV, one of which was non-compliant with the Condition 2 interpretation. Four samples were non-compliant with the BOD (mg/l) ELV, one of which was non-compliant with the Condition 2 interpretation. There was 1 reportable COD ELV exceedance. The impact on receiving waters is assessed further in Section 2.3.

2.3 Ambient monitoring summary

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

2.3.1 Ambient Monitoring Report Summary - Blackrock WWTP

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Downstream	311269, 300941	TPEFF2100D0188SW001	No	No	No	Yes	Good

2.3.2 Ambient Monitoring Parameter Summary - Blackrock WWTP

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1 - Ambient monitoring summary.**

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

Based on the ambient monitoring results, it is considered that the discharge from the wastewater treatment plant does not have an observable impact on the water quality.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

The 2010-2015 WFD Status at the downstream monitoring point at Outer Dundalk Bay (Coastal Waterbody) is 'Good'. The EPA currently classify Dundalk Bay as "Unpolluted".

The Dundalk Bay Shellfish Area is located 0.5km from the primary discharge point. The Dundalk Bay Pollution Reduction Programme (PRP) list Blackrock urban waste water system as a key pressure on the protected shellfish area. Stage 1 Desktop Assessment of the impact of this agglomeration on the receiving Designated Shellfish water recommended further assessment to be carried out to identify potential impact. Stage 2 Scoping Assessment Reports concluded that discharges are likely to have a negative microbiological effect on the quality of the shellfish in the Dundalk Bay designated shellfish waters.

3 OPERATIONAL REPORTS SUMMARY

3.1 Treatment Efficiency Report

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

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

3.1.1 Treatment Efficiency Report Summary - Blackrock WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
TN	16347.96	9495.5	41.92	
TP	2192.8			
cBOD	78698.61	12886.13	83.63	
COD	171076.59	50569.74	70.44	
SS	83770.44	21464.02	74.38	

Note: The above data is based on sample results for the number of dates reported

3.2 Treatment Capacity Report Summary

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amount of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

Blackrock WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	5436

DWF to the Treatment Plant (m3/day)	1812
Current Hydraulic Loading - annual max (m3/day)	3867.5
Average Hydraulic loading to the Treatment Plant (m3/day)	1735.76
Organic Capacity (PE) - As Constructed	7300
Organic Capacity (PE) - Collected Load (peak week)	6851
Organic Capacity (PE) - Remaining	449
Will the capacity be exceeded in the next three years? (Yes/No)	No

3.3 Complaints Summary

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

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
4	Blocked Sewer	0	4

3.4 Reported Incidents Summary

Environmental incidents that arise in an agglomeration are reported on an on-going basis in accordance with our waste water discharge licences. Where an incident occurs and it is reportable under the licence, it is reported to the Environmental Protection Agency through their Environmental Data Exchange Network, or in some instances by telephone. Some incidents which arise in the agglomeration are recorded by Irish Water but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

3.4.1 Summary of Incidents

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Non-compliance	Inadequate Operational Procedures	2	No	Yes
Other	Other	1	No	Yes
Other	Other	1	No	Yes
Other	Plant or equipment breakdown at WWTP	1	No	Yes
Other	Screen not operating	1	No	Yes
Non-compliance	Other	2	No	No

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	8
Number of Incidents reported to the EPA via EDEN in 2018	8
Explanation of any discrepancies between the two numbers above	N/A

3.5 Sludge / Other inputs to the WWTP

'Other inputs' to the waste water treatment plant are summarised in table below

Input type	Quantity	Unit	P.E.	% of load to WWTP	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP?(Y/N)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

4.1 Storm Water Overflow Identification and Inspection Report

A summary of the operation of the storm water overflows and their significance where known is included below:

No Appendix Included.

4.1.1 SWO Identification

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2018 (No. of events)	Total volume discharged in 2018 (m3)	Monitoring Status
SW005	307815, 303833	Yes	Low	Not Meeting			Not Monitored
SW006	306632, 301994	Yes	Low	Not Meeting			Not Monitored
SW007	307351, 302432	Yes	Low	Not Meeting			Not Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	No
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes

Have the EPA been advised of any additional SWOs / charges 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.

4.2.1 Specified Improvement Programme Summary

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides list of the various reports required for this agglomeration and a brief summary of their recommendations.

Specified Improvement Programmes (under Schedule A and C of WWDL)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
There are no Specified Improvement Programmes for this Agglomeration.						

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

4.2.2 Improvement Programme Summary

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
D0188-IP:42	Surface aerators to be replaced with FBDA in 2019.	Other	30/6/2019	These works will increase the capacity of the WWTP by further 2000 PE (approx.)
D0188-IP:39	Blackrock WWTP is to be made redundant and wastewater will be diverted to Dundalk WWTP.	Other	2022/23	There will be a phased pumping away of wastewater from Blackrock and the programme for this will depend on the DAP and funding. Expected completion date is 2022/23.

4.2.3 Sewer Integrity Risk Assessment

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity.Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Table.

5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides list of the various reports required for this agglomeration and a brief summary of their recommendations.

5.a Licence Specific Reports Summary Table

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	2016	No	

6 CERTIFICATION AND SIGN OFF

6.1 Summary of AER Contents

Parameter	Answer
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	N/A
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	No
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	N/A

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

Signed: Date: 26/02/2019

This AER has been produced by Irish Water's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of,

Eleanor Roche

Acting Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

Blackrock Ambient Monitoring Data

Ambient Monitoring Report Summary Table

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Receiving Waters Designation (Yes/No)			
			Bathing Water	Drinking Water	FWPM	Shellfish
Upstream Monitoring Point	306116, 301424	RS06F011000				
Downstream Monitoring Point	311269, 300941	CW21006029CN1003	No	No	No	Yes

*No ambient Ammonia N data reported.

Significance of Results

- The WWTP was non-compliant with ELVs for SS, COD and BOD.
- Based on the ambient monitoring results from 2018, it is considered that the discharge from the wastewater treatment plant does not have an observable negative impact on the water quality.
- The 2010-2015 WFD Status at the downstream monitoring point at Outer Dundalk Bay (Coastal Waterbody) is '*Good*'. The EPA currently classify Dundalk Bay as "*Unpolluted*".
- The Dundalk Bay Shellfish Area is located 0.5km from the primary discharge point. The Dundalk Bay Pollution Reduction Programme (PRP) list Blackrock urban waste water system as a key pressure on the protected shellfish area. Stage 1 Desktop Assessment of the impact of this agglomeration on the receiving Designated Shellfish water recommended further assessment to be carried out to identify potential impact. Stage 2 Scoping Assessment Reports concluded that discharges are likely to have a negative microbiological effect on the quality of the shellfish in the Dundalk Bay designated shellfish waters.

Upstream - *RS06F011000 – Fane River - Lurgangreen B - NGR: 306116, 301424*

Date	Ortho P (mg/l)	BOD (mg/l)	SS (mg/l)	D.O. (mg/l)	pH (mg/l)
15-May-2018	0.030	<1	6.0		8.10
7-June-2018	< 0.02	<1	36.0		8.10
4-Oct-2018	0.060	<2	< 2		8.27
13-Nov-2018	0.041	<2	< 2		7.66
Mean	0.016	1.2	2.0		7.84
95%ile	0.031	0.8	9.2		7.99

Downstream - *CN170 - Dundalk Bay SW – Outer Dundalk Bay – NGR: 311269, 300941*

Date	Ortho P (mg/l)	BOD (mg/l)	D.O. (% Sat)	D.O. (mg/l)	pH (mg/l)	E.coli	Enterococci	Faecal Coliforms
6-Feb-2018	0.030	2.0		11	7.90	< 100	100	< 100
15-May-2018	0.030	< 1		11	8.00			
7-June-2018	0.010	< 2	96.2		8.09			
4-Oct-2018	0.060	< 2	115		8.01	2	0	2
13-Nov-2018	< 0.014	0.8	109.1		7.72	16	290	20
Mean	0.027	1.1	107	11	7.945			
95%ile	0.054	1.8	114	11	8.07			

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of 50% of the LOD was used in calculating the mean and 95%ile concentrations.