Annual Environmental Report 2015

Agglomeration Name:	**Passage West / Monkstown**
Licence Register No.	**D0129-01**

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Section 1. Executive Summary and Introduction to the 2015 AER

1.1 Summary report

This Annual Environmental Report has been prepared for D0129-01, Passage West - Monkstown, in County Cork 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:

- Annual Statement of Measures
- Specified Improvement Programme
- Ambient Monitoring Summary

The agglomeration is currently not served by a waste water treatment plant. The existing works consists of a combined sewer which discharges untreated to Lough Mahon through three outfall points, the most significant of which is the Pembroke outfall primary discharge point in Passage West. There are also two other secondary outfalls and emergency overflow points from four of the five pumping stations in the agglomeration. As part of the Cork Lower Harbour Main Drainage Scheme, it is proposed to upgrade the Passage West/Monkstown sewer network and pump waste water to the proposed urban waste water treatment plant at Shanbally which is expected to be operational by late 2016.

The final effluent from the discharge points is currently not monitored in accordance with the discharge licence, so it is uknown whether or not it was compliant with the Emission Limit Values in 2015.

There were no major capital or operational changes undertaken in 2015.

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)
Number of Samples	N/A	N/A	N/A	N/A	N/A		
Annual Max.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Annual Mean	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Influent monitoring is not carried out as there is no treatment plant in Passage West/Monkstown. Wastewater currently discharges to Lough Mahon through three outfall points.

2.2 Discharges from the agglomeration

Table 2.2 - Effluent Monitoring Summary

	BOD (mg/l)[2]	**COD (mg/l)[2]**	**TSS (mg/l)[2]**	**Comment**
WWDL ELV (*Schedule A*)	25	125	35	
ELV with Condition 2 Interpretation included	N/A	N/A	N/A	
Number of sample results	N/A	N/A	N/A	
Number of sample results above WWDL ELV/not achieving min % reduction [1, 2]	N/A	N/A	N/A	
Number of sample results above ELV with Condition 2 Interpretation included	N/A	N/A	N/A	
Overall Compliance (Pass/Fail)	N/A	N/A	N/A	

Significance of results

There is direct discharge. No monitoring of primary or secondary wastewater discharges is required, in accordance with the 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

Ambient Monitoring Point from WWDL (or as agreed with EPA)	***Irish Grid Reference***	**EPA Feature Coding Tool code**	**Receiving Waters Designation (Y/N)**				**WFD Status**	**Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?**
			Bathing Water	**Drinking Water**	**FWPM**	**Shellfish**		
Upper Lough Mahon (Lee Tunnel)	51.898267, -8.390053	TW05003157LE4001 (LE310)	N/A	N/A	N/A	N/A	Moderate	No
Mid Lough Mahon (Buoy No 6)	51.8867, -8.3565	TW05003157LE4002 (LE330)	N/A	N/A	N/A	N/A	Moderate	No
Lough Mahon, Marino Point	51.8778, -8.3361	TW05003157LE4003 (LE340)	N/A	N/A	N/A	N/A	Moderate	No
Cork Harbour, Ringaskiddy	51.8378, -8.3126	CW05003150LE8001 (LE380)	N/A	N/A	N/A	N/A	Good	No

Ambient monitoring is not being carried out by the licensee for this agglomeration. EPA Coastal Monitoring Data is used instead. 2014 data has been used as 2015 data is not available. Data sets used are included in Appendix 7.2.

It should be noted that two of the upstream monitoring points (LE330 and LE340) close to the Carrigrennan outfall while the downstream monitoring point is close to the Cobh and Crosshaven/Carrigaline/Ringaskiddy outfalls and consequently, these monitoring points are likely to be heavily influenced by effluent from these agglomerations.

Significance of results

- The final effluent from the discharge points is currently not monitored, as detailed in Section 2.2.
- The direct discharge from the wastewater network does not have an observable negative impact on the water quality.
- The direct discharge from the wastewater network does not have an observable negative impact on the Water Framework Directive Status.

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

The reporting requirement under the Urban Wastewater Directive is completed by electronic submission of data and will be completed no later than 28th February 2016.

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

A PRTR is not required for the agglomeration for the 2015 reporting period.

Section 3 Operational Reports Summary

3.1 Treatment Efficiency Report

N/A as there is no treatment plant in existence.

Table 3.1 - Treatment Efficiency Report Summary

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)	Comment
Influent mass loading (kg/year)	N/A	N/A	N/A	N/A	N/A	N/A
Effluent mass emission (kg/year)	N/A	N/A	N/A	N/A	N/A	N/A
% Efficiency (% reduction of influent load)	N/A	N/A	N/A	N/A	N/A	N/A

3.2 Treatment Capacity Report

N/A as there is no treatment plant in existence.

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/year)	N/A
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/year)	N/A
Hydraulic Capacity – Current loading (m3/year)	N/A
Hydraulic Capacity – Remaining (m3/year)	N/A
Organic Capacity - Design / As Constructed (PE)	N/A
Organic Capacity - Current loading (PE)	N/A
Organic Capacity – Remaining (PE)	N/A
Will the capacity be exceeded in the next three years? (Yes / No)	N/A

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	**0**
Load collected in the sewer network but discharged without treatment	**100**

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 is estimated based on the fact that no waste water treatment takes place.

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

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)

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 2015	0
Number of Incidents reported to the EPA via EDEN in 2015	0
Explanation of any discrepancies between the two numbers above	N/A

3.6 Sludge / Other inputs to the WWTP

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

Table 3.6 - Other Inputs[1,2]

Input type	**m3/year**	**PE/year**	**% of load to WWTP**	**Included in Influent Monitoring (Y/N)?[3]**	**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	N/A	N/A	N/A	N/A	N/A	N/A
Industrial / Commercial Sludge	N/A	N/A	N/A	N/A	N/A	N/A
Landfill Leachate (delivered by tanker)	N/A	N/A	N/A	N/A	N/A	N/A
Landfill Leachate (delivered by sewer network)	N/A	N/A	N/A	N/A	N/A	N/A
Other (specify)	N/A	N/A	N/A	N/A	N/A	N/A

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.
3. If any inputs were introduced **prior** to influent monitoring point and therefore already reported in S.2.1 *Influent Monitoring Summary*, then clarify this to avoid duplication and over-reporting of PE.

Section 4. Infrastructural Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

Storm Water Overflows have not yet been assessed as direct discharge is in operation. 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 2015 (No. of events)	Total volume discharged in -2015 (m3)	Total volume discharged in -2015 (P.E.)	Estimated /Measured data
SW04 PASS	175621E 069656N	Yes	N/A	Not yet assessed	Unknown	Unknown	Unknown	N/A
SW05 PASS	176987E 068831N	Yes	N/A	Not yet assessed	Unknown	Unknown	Unknown	N/A
SW06 PASS	177116E 067734N	Yes	N/A	Not yet assessed	Unknown	Unknown	Unknown	N/A
SW07 PASS	177114E 066095N	Yes	N/A	Not yet assessed	Unknown	Unknown	Unknown	N/A

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 2015?	Unknown
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	Yes
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 included in Appendix 7.3.

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
Upgrade collecting system: reduce infiltration, remediate structural damage, separate storm water and install major pumping station.	**C1**	**1st January 2015**	**Y**	**At planning stage**	**Unknown**	**Q2 2017**	**See Appendix 7.3**
Infrastructural works necessary to cease discharges	**A3, C1**	**1st January 2015**	**Y**	**At planning stage**	**Unknown**	**Q2 2017**	**See Appendix 7.3**

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
Schedule C: C.1	***Upgrade collecting system: reduce infiltration, remediate structural damage, seperate storm***	*WWTP assessment (Condition 5.2).*	**Planning / Tender**		**See Appendix 7.3**

	water and install major pumping station				
Schedule C: C.1	***Infrastructural Works necessary to cease discharges***	*Sewer Integrity Tool (Condition 5.2).*			**See Appendix 7.3**
	Insert rows as required	*Secondary discharges assessment (Condition 5.2).*			
		SWO assessment (Condition 4 & 5.2).			
		Drinking Water Abstraction Risk Assessment (Condition 4)			
		Shellfish Impact Risk Assessment (Condition 5)			
		Pearl Mussel Impact Assessment (Condition 4)			
		Improved Operational Control			
		Incident Reduction			
		Elimination/Reduction of Priority Substances			

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	*Medium*	*78*	*Included in 2014 AER*
Environmental Risk Assessment Score	*High*	*435*	*Included in 2014 AER*
Structural Risk Assessment Score	*High*	*125*	*Included in 2014 AER*
Operation & Maintenance Risk Assessment Score	*Medium*	*140*	*Included in 2014 AER*
Overall Risk Score for the agglomeration	*High*	*778*	*Included in 2014 AER*

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required in AER or outstanding from previous AER	Report Included in AER	*Reference to relevant section of AER (e.g. Appendix 2 Section4.*
Priority Substances Assessment	No	No	N/A
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	N/A	N/A
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

This item is not applicable to the Waste Water Discharge Licence issued for the agglomeration.

5.2 Drinking Water Abstraction Point Risk Assessment.

This item is not applicable to the Waste Water Discharge Licence issued for the agglomeration.

5.3 Shellfish Impact Assessment Report.

This item is not applicable to the Waste Water Discharge Licence issued for the agglomeration.

5.4 Toxicity / Leachate Management

This item is not applicable to the Waste Water Discharge Licence issued for the agglomeration.

5.5 Toxicity of the Final Effluent Report

This item is not applicable to the Waste Water Discharge Licence issued for the agglomeration.

5.6 Pearl Mussel Measures Report

This item is not applicable to the Waste Water Discharge Licence issued for the agglomeration.

5.7 Habitats Impact Assessment Report

N/A

This item is not applicable to the Waste Water Discharge Licence issued for the agglomeration.

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)?	N/A
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 *(insert lines as required)*	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 *(insert lines as required)*	N/A
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	N/A
List outstanding reports *(insert lines as required)*	N/A

Declaration by Irish Water

The AER contains the following;

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

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

Signed: _____ Date: 22/02/2016

Gerry Galvin
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 – Specified Improvement Programme

Appendix 7.1 - Annual Statement of Measures

No additional measures have been taken in 2015 in relation to prevention of environmental damage. The need for measures to prevent environmental damage will be reviewed on an annual basis.

Appendix 7.2 - Ambient monitoring summary

Upstream Monitoring Data: Upper Lough Mahon - Lee Tunnel (LE310)

Sample_ID	Station_No	Sample_Label	Date_Surveyed	Time	Depth_Bed	Depth_Sample	Salinity	Temperature	pH	Secchi	SS	DO_saturation	BOD	TON	NH3	PO4	chl_a	Corrected_Si	Lab_No	DIN	Free_NH3	DO_mgL	Free_NH3	BOD_LOD	TON_LOD	NH3_LOD	PO4_LOD	Chl_a_LOD	Si_est_LOD	Lab	Colour_LOD	Colour	Water Body_Name
118974	LE310	LE310B	03/09/2014	15:07:00	9.5	9.09	32.42	16.08	8.1	4.5		98.2	0.5	0.07	0.102	21	6.7	100	1445472	0.172	0.004	7.9	Summe	<1.0					<200	Dublin			Lough Mahon
119010	LE310	LE310B	05/03/2014	12:10:00	9.3	9	28.05	8.48	8	1.1		96.4		0.67	0.095	32	2.1	930	1440886	0.765	0.002	9.4	Winter							Dublin			Lough Mahon
119041	LE310	LE310S	09/07/2014	10:33:00	7.5	0	18.68	17.33	8.1	1.9		102.9		0.71	0.09	30	3.7	950	1443879	0.8	0.004	8.8	Summer							Dublin			Lough Mahon
119093	LE310	LE310S	03/09/2014	12:21:00	9.5	0	26.52	16.77	8.2	1.5		126.5	3.2	0.29	0.08	18	25.6	440	1445471	0.37	0.005	10.5	Summer							Dublin			Lough Mahon
119227	LE310	LE310S	05/03/2014	12:39:00	9.3	0	15.38	7.64	7.8	1.1		94.5		2.65	0.07	28	1.6	2500	1440885	2.72	8E-04	10.2	Winter							Dublin			Lough Mahon
118669	LE310	LE310B	11/06/2014	12:45:00	7.8	7.6	28.8	14.37	7.9	2.3		74.2		0.28	0.417	51	3.5	720	1442907	0.697	0.01	6.3	Summer							Dublin			Lough Mahon
118822	LE310	LE310B	09/07/2014	11:08:00	7.5	6.9	32.1	15.69	8.1	1.9		101.5		0.08	0.157	25	6.5	100	1443880	0.237	0.007	8.3	Summer						<200	Dublin			Lough Mahon
118831	LE310	LE310S	11/06/2014	11:33:00	7.8	0	11.85	15.41	7.7	2.3		87.1	1.1	1.79	0.149	51	4.9	2600	1442900	1.939	0.003	8.1	Summer							Dublin			Lough Mahon

Upstream Monitoring Data: Mid Lough Mahon - Buoy No 6 (LE330)

Sample_ID	Station_No	Sample_Label	Date_Surveyed	Time	Depth_Bed	Depth_Sample	Salinity	Temperature	pH	Secchi	SS	DO_saturation	BOD	TON	NH3	PO4	chl_a	Corrected_Si	Lab_No	DIN	Free_NH3	DO_mgL	Free_NH3	BOD_LOD	TON_LOD	NH3_LOD	PO4_LOD	Chl_a_LOD	Si_est_LOD	Lab	Colour_LOD	Colour	Water Body_Name
119297	LE330	LE330SR	03/09/2014	11:43:00	9.1	0	30.95	17.29	8.2	2		126.8	1.6	0.1	0.061	13	6.2	100	1445487	0.161	0.004	10.1	Summer						<200	Dublin			Lough Mahon
118998	LE330	LE330B	09/07/2014	13:09:00	7	6.5	32.3	15.61	8.2	1.2		102.5	1.1	0.05	0.098	12	6.1	100	1443882	0.148	0.005	8.4	Summer						<200	Dublin			Lough Mahon
119055	LE330	LE330S	09/07/2014	10:40:00	7	0	28.37	16.81	8.2	1.2		103	1.4	0.31	0.089	22	8.1	230	1443881	0.399	0.005	8.4	Summer							Dublin			Lough Mahon
119104	LE330	LE330SR	09/07/2014	10:43:00	10	0	31.13	16.54	8.2	1.9		111.3		0.12	0.08	13	9.8	100	1443895	0.2	0.005	9	Summer						<200	Dublin			Lough Mahon
119128	LE330	LE330B	05/03/2014	10:13:00	9.3	9	28.05	8.48	8	1.1		96.4		0.57	0.079	34	2	820	1440888	0.649	0.002	9.4	Winter							Dublin			Lough Mahon
119281	LE330	LE330BR	09/07/2014	15:19:00	10	9.5	32.63	15.1	8.2	1.9		103.6		0.03	0.063	10	4.9	100	1443896	0.093	0.003	8.5	Summer						<200	Dublin			Lough Mahon
118689	LE330	LE330B	11/06/2014	08:47:00	7.8	7.5	28.94	14.65	8.1	1.2		93.2		0.26	0.29	35	5	600	1442909	0.55	0.011	7.9	Summer							Dublin			Lough Mahon
118801	LE330	LE330S	11/06/2014	14:43:00	7.8	0	19.53	15.89	8	1.2		96.4	1.4	0.69	0.177	37	7.2	1300	1442908	0.867	0.006	8.5	Summer							Dublin			Lough Mahon
118843	LE330	LE330BR	11/06/2014	14:01:00	10.5	10.3	29.5	15.03	8.1	2		101.6		0.23	0.142	20	5.1	540	1442929	0.372	0.006	8.5	Summer							Dublin			Lough Mahon
118844	LE330	LE330S	03/09/2014	13:26:00	10.1	0	31.66	16.47	8.2	2		117.7		0.08	0.141	20	9.8	100	1445473	0.221	0.008	9.5	Summer						<200	Dublin			Lough Mahon
118857	LE330	LE330SR	11/06/2014	12:15:00	10.5	0	26.31	15.77	8.1	2		106	0.5	0.37	0.14	20	6.2	720	1442928	0.51	0.006	8.9	Summe	<1.0						Dublin			Lough Mahon
118868	LE330	LE330BR	05/03/2014	13:38:00	8.2	8	27.83	8.47	8	1.1		95.2		0.79	0.136	38	4.4	1100	1440900	0.926	0.003	9.3	Winter							Dublin			Lough Mahon
118871	LE330	LE330B	03/09/2014	15:07:00	10.1	9.77	32.8	15.94	8.1	2		101.7		0.07	0.133	21	4.9	100	1445474	0.203	0.006	8.2	Summer						<200	Dublin			Lough Mahon
118925	LE330	LE330SR	05/03/2014	09:35:00	8.2	0	11.61	8.1	7.8	1.1		98.3		1.98	0.119	38		2000	1440925	2.099	0.001	10.8	Winter							Dublin			Lough Mahon
118933	LE330	LE330BR	03/09/2014	14:05:00	9.1	8.85	32.78	15.94	8.2	2		100.1		0.09	0.114	21	8.2	100	1445488	0.204	0.006	8.1	Summer						<200	Dublin			Lough Mahon
118935	LE330	LE330S	05/03/2014	11:13:00	9.7	0	17.54	7.77	7.9	1		94.9		1.35	0.113	36	1.8	2000	1440887	1.463	0.002	10.1	Winter							Dublin			Lough Mahon

Upstream Monitoring Data: Lough Mahon - Marino Point (LE340)

Sample_ID	Station_No	Sample_Label	Date_Surveyed	Time	Depth_Bed	Depth_Sample	Salinity	Temperature	pH	Secchi	SS	DO_saturation	BOD	TON	NH3	PO4	chl_a	Corrected_Si	Lab_No	DIN	Free_NH3	DO_mgL	Free_NH3	BOD_LOD	TON_LOD	NH3_LOD	PO4_LOD	Chl_a_LOD	Si_est_LOD	Lab	Colour_LOD	Colour	Water Body_Name
118964	LE340	LE340S	09/07/2014	12:31:00	9	0	29.67	16.67	8.2	1.1		106.8		0.2	0.108	19	9.8	100	1443883	0.308	0.006	8.7	Summer						<200	Dublin			Lough Mahon
118975	LE340	LE340S	03/09/2014	15:15:00	12.2	0	32.72	15.94	8.1	2.2		107.4		0.08	0.101	18	12.2	100	1445475	0.181	0.004	8.7	Summer						<200	Dublin			Lough Mahon
119063	LE340	LE340B	05/03/2014	11:19:00	11	10.4	27.14	8.38	8	1		89.6		0.66	0.087	41	2.6	880	1440890	0.747	0.002	8.8	Winter							Dublin			Lough Mahon
119187	LE340	LE340B	03/09/2014	12:07:00	12.2	11.76	33.46	15.56	8.1	2.2		98.1		0.05	0.07	16	3.9	100	1445476	0.12	0.003	8	Summer						<200	Dublin			Lough Mahon
119202	LE340	LE340B	09/07/2014	15:02:00	9	7.6	32.2	15.62	8.2	1.1		101.1		0.03	0.07	9	6.4	100	1443884	0.1	0.004	8.3	Summer						<200	Dublin			Lough Mahon
118762	LE340	LE340B	11/06/2014	14:01:00	7	6.8	27.12	15.04	8.1	2		94.3		0.23	0.204	25	6	560	1442911	0.434	0.008	8	Summer							Dublin			Lough Mahon
118826	LE340	LE340S	11/06/2014	13:38:00	7	0	18.2	15.85	8.1	2		100.6	1.4	0.79	0.154	31	5	1400	1442910	0.944	0.007	8.9	Summer							Dublin			Lough Mahon
118924	LE340	LE340S	05/03/2014	12:18:00	11	0	18.71	7.88	7.9	1		95.4	0.5	1.28	0.119	35	1.3	1600	1440889	1.399	0.002	10	Winter	<1.0						Dublin			Lough Mahon

Downstream Monitoring Data: Cork Harbour - Ringaskiddy (LE380)

Sample_ID	Station_No	Sample_Label	Date_Surveyed	Time	Depth_Bed	Depth_Sample	Salinity	Temperature	pH	Secchi	SS	DO_saturation	BOD	TON	NH3	PO4	chl_a	Corrected_Si	Lab_No	DIN	Free_NH3	DO_mgL	Free_NH3	BOD_LOD	TON_LOD	NH3_LOD	PO4_LOD	Chl_a_LOD	Si_est_LOD	Lab	Colour_LOD	Colour	Water Body_Name
118939	LE380	LE380SR	05/03/2014	12:22:00	13.5	0	20.89	8.16	8	0.9		96.9	0.5	0.98	0.112	27	3.3	1400	1440899	1.092	0.002	10	Winter	<1.0						Dublin			Cork Harbour
119067	LE380	LE380B	11/06/2014	12:31:00	15.9	15.5	33.46	13.86	8.1	1.9		101.2	0.5	0.14	0.086	15	5.5	440	1442913	0.226	0.003	8.5	Summe	<1.0						Dublin			Cork Harbour
119079	LE380	LE380S	05/03/2014	14:13:00	18.1	0	24.84	8.25	8	0.5		96.8		0.88	0.083	34	1.8	1100	1440891	0.963	0.002	9.7	Winter							Dublin			Cork Harbour
119246	LE380	LE380S	09/07/2014	10:49:00	15	0	31.19	16.39	8.2	1.5		112.6	1.4	0.11	0.067	10	8.1	100	1443885	0.177	0.004	9.1	Summer						<200	Dublin			Cork Harbour
119387	LE380	LE380BR	05/03/2014	11:50:00	13.5	12.4	33.98	8.83	8	0.9		97.9		0.45	0.059	27		680	1440926	0.509	0.001	9.1	Winter							Dublin			Cork Harbour
119408	LE380	LE380B	05/03/2014	13:54:00	18.1	18	31.29	8.65	8	0.5		97		0.42	0.056	37	2.6	630	1440892	0.476	0.001	9.2	Winter							Dublin			Cork Harbour
119418	LE380	LE380SR	03/09/2014	12:11:00	18	0	33.35	15.82	8.1	2.9		103.6	1.5	0.05	0.054	15	6.7	100	1445489	0.104	0.002	8.4	Summer						<200	Dublin			Cork Harbour
119640	LE380	LE380BR	03/09/2014	11:15:00	18	17.44	33.94	15.32	8.1	2.9		97.3		0.04	0.044	15	3.5	320	1445490	0.084	0.002	7.9	Summer							Dublin			Cork Harbour
119664	LE380	LE380S	03/09/2014	10:12:00	20	0	33.96	15.19	8.1	3.1		99.2	0.5	0.04	0.042	13	6.2	100	1445477	0.082	0.002	8.1	Summe	<1.0					<200	Dublin			Cork Harbour
119931	LE380	LE380B	03/09/2014	10:31:00	20	19.02	34.32	15.15	8.1	3.1		95.6	0.5	0.04	0.034	13	3.3	100	1445478	0.074	0.001	7.8	Summe	<1.0					<200	Dublin			Cork Harbour
119936	LE380	LE380SR	09/07/2014	15:17:00	18	0	32.81	15.89	8.2	2.1		115.3		0.03	0.034	7	7	100	1443897	0.064	0.002	9.3	Summer						<200	Dublin			Cork Harbour
119997	LE380	LE380BR	09/07/2014	15:05:00	18	17.3	33.98	13.87	8.1	2.1		105.8		0.005	0.031	7	5.8	100	1443898	0.036	0.001	8.9	Summer		<0.01				<200	Dublin			Cork Harbour
120111	LE380	LE380B	09/07/2014	11:03:00	15	15	13.52	13.52	8.1	1.5		113.1	1.1	0.005	0.03	6	3.3	100	1443886	0.035	0.001	10.8	Summer		<0.01				<200	Dublin			Cork Harbour
118832	LE380	LE380S	11/06/2014	10:10:00	15.9	15.5	33.46	13.86	8.1	1.9	4	101.2	0.5	0.63	0.149	29	4.7	1100	1442912	0.779	0.006	8.5	Summe	<1.0						Dublin		12	Cork Harbour

Appendix 7.3 – Specified Improvement Programme

Consultants, Nicholas O'Dwyer Ltd, were appointed to complete Detailed Design, Tender and Construction Supervision for the Cork Lower Harbour Main Drainage Project http://www.water.ie/corklowerharbour in 2013.

The Project includes upgrading the collection systems in Cobh, Passage West, Glenbrook, Monkstown, Shanbally, Ringaskiddy, Coolmore and Carrigaline to transfer flows to a wastewater treatment plant site at Shanbally.

Planning
Cork County Council applied to An Bord Pleanála under the Strategic Infrastructure Act, for an 80,000p.e. Wastewater Treatment Plant at Shanbally as part of the Lower Harbour Main Drainage Project described in detail in the accompanying EIS.
An Bord granted permission for the Project in June 2009.

Irish Water applied to An Bord, in 2015, for a Section 146(b) modification to the original grant as sizing and locations of the sewer network infrastructure had been finalised on the West & South side of the harbour.

An Bord granted permission for these changes to the original proposals in October 2015

A separate Section 146(b) application will be made to An Bord, in Q2 2016, by Irish Water to cover works on the North/East side of the harbour (Cobh) and the associated trenchless crossing to bring Cobh Wastewater to Monkstown.

Land/Wayleaves
In parallel with the 146(b) application, Irish Water applied to An Bord Pleanála for acquisition, by compulsory purchase order, of of necessary lands and wayleaves to complete the sewer network infrastructure on the West & South side of the harbour. This process is complete.

A separate Section 146(b) application will be made to An Bord, in Q2 2016, by Irish Water to cover works on the North/East side of the harbour (Cobh) and the associated trenchless crossing to bring Cobh Wastewater to Monkstown.

Foreshore
Irish Water applied to the Department of the Environment, Community and Local Government, in 2015, for a foreshore licence as sizing and locations of the sewer network infrastructure had been finalised on the West & South side of the harbour. This licence is due imminently.

A separate Foreshore application will be made to Department of the Environment, Community and Local Government, in Q2 2016, by Irish Water to cover works on the North/East side of the harbour (Cobh) and the associated trenchless crossing to bring Cobh Wastewater to Monkstown.

Tendering
Tenders have been received for:
The Wastewater Treatment Plant Contract (D0057-01)
The Passage West/Monkstown Network Contract (D0129-01). Tender assessment is ongoing.
The Carrigaline/Ringaskiddy Village Network Contract (D0057-01 & D0436-01). Tender assessment is ongoing.

The Cobh Collection Network Contract (D0054-01 & D0140-01) and the associated trenchless crossing to bring Cobh Wastewater to Monkstown will be tendered in 2016.

Construction – Wastewater Treatment Plant
The Design Build Operate Contract was signed with EPS Sisk JV on 25th June 2015, with a commencement date of 20th July. Construction is ongoing, wastewater treatment will commence before end of 2016.

Construction – Collection Networks
The Collection Network works has been split into 4 no. separate contracts:

- Cobh Collection Network (24 months) anticipated to commence Q4 2016/Q1 2017
- Lot 2 - Passage West, Glenbrook, Monkstown Collection Network (18 months) anticipated to commence Q2/3 2016
- Lot 3 - Ringaskiddy, Coolmore and Carrigaline Collection Network (12 months) anticipated to commence Q2/3 2016
- Directional Drill Crossing Cobh/Monkstown (3-4 Months) anticipated to commence Q1 2017

(Dates subject to Planning, Foreshore, CPO Approvals and approvals by Irish Water, Ervia and New Era (National Treasury Management Agency).