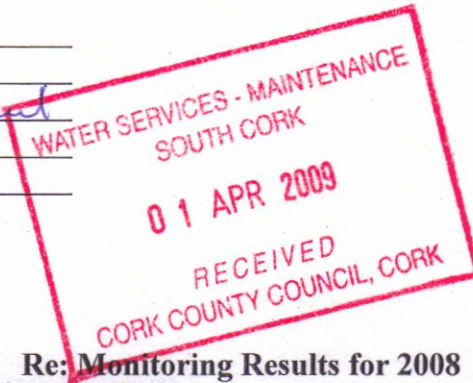


Comhairle Contae Chorcaí Cork County Council

Environmental Directorate,
Inniscarra, Co. Cork.
Tel. No. (021) 4532700 • Fax No. (021) 4532727
Web: www.corkcoco.ie
An Stiúirthóireacht Comhshaoil,
Inis Cara, Co. Corcaigh.
Fón: (021) 4532700 • Faics: (021) 4532727
Suíomh Gréasáin: www.corkcoco.ie



N O' Mahony
8005
Cork Co. Council
Imishmore
Ballincollig
Co. Cork



18th March 2009

Re: **Monitoring Results for 2008**

Dear Sir/Madam,

Enclosed are the licensed discharge wastewater monitoring results for your facility for 2008. Please note that Total Nitrogen and Total Phosphorus tests were subcontracted to an outside laboratory since early October 2008.

Measurements of uncertainty values for the test are as follows:

Test	Range mg/l	Estimated Uncertainty
TN	100	+ 3.8 mg/l
TP	0.5	+ 0.04 mg/l
TP	5 mg/l	+ 0.44 mg/l
TP	10 mg/l	+ 0.87 mg/l

Please accept my apologies for the late arrival of results but due to circumstances outside my control. I was unable to issue results in February.

If you have any queries in relation to the results, please do not hesitate to contact me.

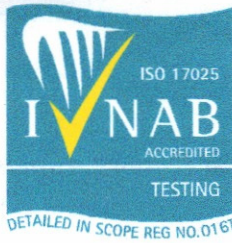
Yours sincerely,

V. Hannon

Valerie Hannon,
A/Senior Executive Scientist,
Wastewater Laboratory.

Direct Dial: 021 – 4532707
Fax: 021 – 4532777
Email: valerie.hannon@corkcoco.ie





Laboratory Test Report

Cork County Council

Waste Water Laboratory

Inniscarra, Co. Cork

Industry Name: Coachford Treatment Plant
Address: Coachford, Co. Cork

Industry Code No. 351
Report Ref No. 19-03-09-117
Issued to No. Mahony
SEE

Licence No. Type S

Licence Limit	Volume m3	pH	B.O.D. mg/l	C.O.D. mg/l	Sus Solids mg/l	TP-P mg/l	Code	Comments
	99999	12.99 3.99	999	9999	999	99		
Date								
~ 07/02/08		6.9	29.05	60	15	0.80	GS059 G	NH3-N=5.1mg/l O-PO4=0.43
19/06/08		7.3	127	336	69	4.5	GS576 G	OPO4-P=2.74mg/L
10/07/08			40	133	63	2.3	GS631 G	TN-N=16.9mg/L
03/09/08		7.3	83	191	103	2.3	GS846 G	NH3-N=12.9mg/L
09/10/08			1.3	324	46		GS1035 G	
16/10/08		7.0	56.8	99	33		GS1091 G	NH3-N=14.3mg/l, OPO-4=1.
% Compl. Average	*** **** **	100 7.13	100 56.19	100 190.50	100 54.83	100 2.48	*** **** **	*** **** **

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The samples are received at the Laboratory on the day of sampling. The above test methods are based on Standard Methods for the examination of Water and Waste Water, 21st Edition 2005, APHA, AWWA, WEF.

C = Composite Sample, G = Grab Sample.

The compliance value may be varied on items marked with an * by the application of uncertainty of measurement values on reverse Page Chemical Procedure Numbers(CP No.) for INAB accredited tests are as follows:

- CP NO. 1 = B.O.D.
- CP NO. 3 = S.S.
- CP NO. 20 = TP-P
- CP NO. 5 = pH
- CP NO. 6 = C.O.D.
- ~~CP NO. 7 = Cl~~
- CP NO. 22 = Ammonia(KONELAB)
- CP NO. 23 = OPO4-P(KONELAB)
- CP NO. 24 = Chloride (KONELAB)
- CP NO. 25 = Sulphate(KONELAB)

This report relates only to the samples listed above. This report shall not be reproduced except in full and only with the approval of the testing laboratory. Cork County Council is not accredited by INAB for tests marked with \$. Kg loadings based on flows as supplied by the company. ~ indicates results that have been edited.

Reported by: V. Hannon Date: 19/3/09

Ms. V. Hannon Technical Manager
 Deputy Technical Manager

CTR 001

Issue No 36

VH
~~November 2007~~ October 2008

Wastewater Laboratory Cork County Council- Test Report Addendum

- a. Sample date reported in column 1 on this report is the date of collection of the sample from the industry name and address as outlined at the top of the report.
- b. Cork County Council wastewater laboratory are not accredited for sample collection.
- c. Data reported in (d) below is defined in section 5.10.3 (c) in wastewater laboratory quality manual.

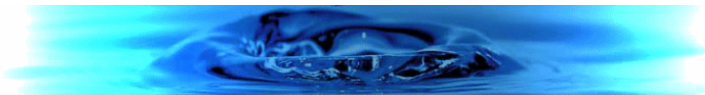
d. Table of Uncertainty Of Measurement – Estimate Of Values For Accredited Tests

Chemical Procedure No.	range	Test Name	Estimated Uncertainty	Units
CP No. 1	1 - 8 mg/l	Biochemical Oxygen Demand (BOD)	± 0.30	mg/l
CP No. 1	9 - 70 mg/l	Biochemical Oxygen Demand (BOD)	± 3.2	mg/l
CP No. 1	71 - 700 mg/l	Biochemical Oxygen Demand (BOD)	± 40	mg/l
CP No. 3	35 mg/l	Suspended Solids (SS)	± 6.4	mg/l
CP No. 3	200 - 400mg/l	Suspended Solids (SS)	± 41.6	mg/l
CP No. 3	700 - 1000mg/l	Suspended Solids (SS)	± 80.0	mg/l
CP No. 5	2 - 12	pH	± 0.12	pH Units
CP No. 6	< 6 mg/l	Chemical Oxygen Demand (COD LR)	± 5.6	mg/l
CP No. 6	15 - 75 mg/l	Chemical Oxygen Demand (COD LR)	± 10.6	mg/l
CP No. 6	100 - 135 mg/l	Chemical Oxygen Demand (COD LR)	± 17.4	mg/l
CP No. 6	120 - 1500mg/l	Chemical Oxygen Demand (COD) High Range	± 26.8	mg/l
CP No. 20	0.2 - 2.5 mg/l	Total Phosphorus (TR-P)	± 0.22	mg/l
CP No. 22	0.1 - 0.9 mg/l	Ammonia (Konelab)	± 0.04	mg/l
CP No. 22	1.0 - 2.0 mg/l	Ammonia (Konelab)	± 0.10	mg/l
CP No. 22	2 - 10 mg/l	Ammonia (Konelab)	± 0.32	mg/l
CP No. 22	11 - 19 mg/l	Ammonia (Konelab)	± 0.72	mg/l
CP No. 22	20 - 25 mg/l	Ammonia (Konelab)	± 1.56	mg/l
CP No. 23	0.05 - 1.00 mg/l	Orthophosphate as P (Konelab)	± 0.04	mg/l
CP No. 24	25.00 - 99.00 mg/l	Chloride (Konelab)	± 3.04	mg/l
CP No. 24	100.00 - 200.00 mg/l	Chloride (Konelab)	± 11.16	mg/l
CP No. 25	30.00 - 199.00 mg/l	Sulphate (Konelab)	± 3.42	mg/l
CP No. 25	200.00 - 250.00 mg/l	Sulphate (Konelab)	± 8.70	mg/l

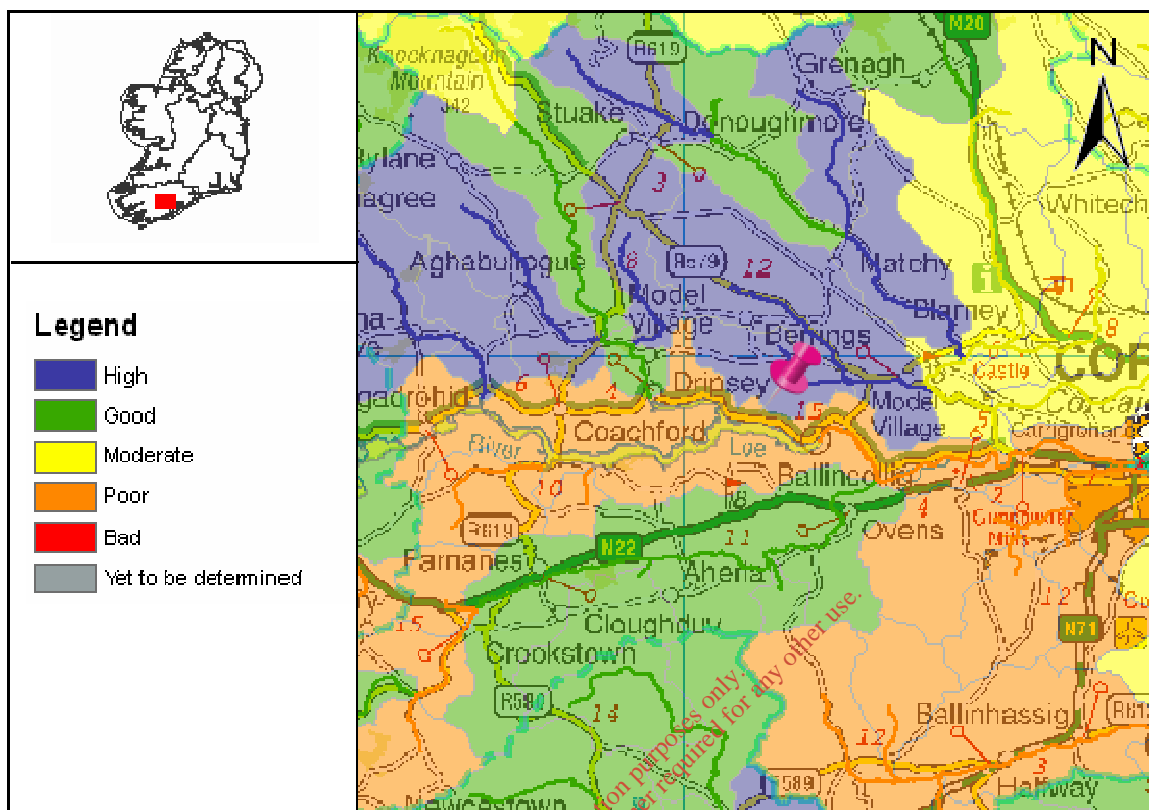
January 2009

The raw data used to evaluate the above estimations is stored in the Wastewater Laboratory, Cork County Council.

The method followed is located in the Uncertainty of Measurement file and in the Eurachem Guidelines for Quantifying Uncertainty in Analytical Measurement.

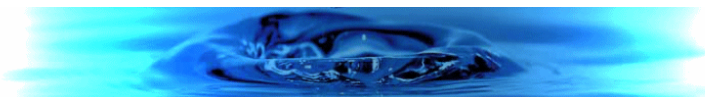


Full Report for Waterbody Lee, Trib of Lee



Date Reported to Europe: 22/12/2008

Date Report Created 27/05/2009



Summary Information:

WaterBody Category: Subbasin Waterbody

WaterBody Lee,

WaterBody IE_SW_19_1663

Overall Poor

Overall Restore

Overall Risk: 1a At Risk

Applicable Unsewered;

Supplementary Report data



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Date Reported to Europe: 22/12/2008

Date Report Created 27/05/2009



Status Report

WaterBody Category: Subbasin
WaterBody Name: Lee,
WaterBody Code: IE_SW_19_1663
Overall Status Result: Poor

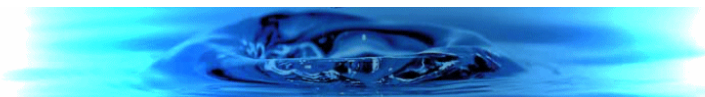


	Status Element Description	Result
EX	Status from Monitored or Extrapolated Waterbody	
	Biological Elements	
Q	Macroinvertebrates (Q-Value)	Poor
F	Fish	n/a
DI	Phytobenthos (Diatoms)	n/a
FPM	Status value as determined by Margartifera	n/a
	Supporting Elements	
MOR	Hydromorphology	n/a
SP	Specific Pollutants	n/a
PC	General Physico-Chemical	n/a
	Chemical Status	
PAS	Chemical Status	n/a
	Overall Ecological Status	
O	Overall Ecological Status	Poor

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Date Report Created 27/05/2009



Risk Report

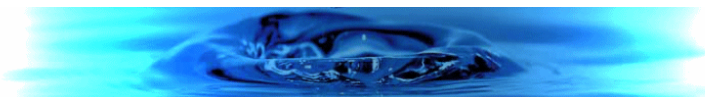
WaterBody Category: Subbasin
WaterBody Name: Lee,
WaterBody Code: IE_SW_19_1663
Overall Risk Result: 1a At Risk



Risk Test Description	Risk
Point Risk Sources	
RP1 WWTPs (2008)	1a At Risk
RP2 CSOs	1b Probably At Risk
RP3 IPPCs (2008)	2b Not At Risk
RP4 Section 4s (2008)	1a At Risk
RPO Overall Risk from Point Sources - Worst Case (2008)	1a At Risk
Diffuse Risk Sources	
RD1 EPA diffuse model (2008)	1b Probably At Risk
RD2a Road Wash - Soluble Copper	2b Not At Risk
RD2b Road Wash - Total Zinc	2b Not At Risk
RD2c Road Wash - Total Hydrocarbons	2b Not At Risk
RD3 Railways	2b Not At Risk
RD4a Forestry - Acidification (2008)	2b Not At Risk
RD4b Forestry - Suspended Solids (2008)	2b Not At Risk
RD4c Forestry - Eutrophication (2008)	2a Probably Not At Risk
RD5a Unsewered Areas - Pathogens (2008)	2a Probably Not At Risk
RD5b Unsewered Phosphorus (2008)	2b Not At Risk
RD5 Overall Unsewered (2008)	2b Not At Risk
RD6a Arable	2a Probably Not At Risk
RD6b Sheep Dip	2b Not At Risk
RD6c Forestry - Dangerous Substances	2b Not At Risk
RDO Diffuse Overall -Worst Case (2008)	1b Probably At Risk
Morphological Risk Sources	
RM1 Channelisation (2008)	2b Not At Risk
RM2 Embankments (2008)	2b Not At Risk
RM3 Impoundments	1a At Risk
RM4 Water Regulation	2b Not At Risk
RMO Morphology Overall - Worst Case (2008)	1a At Risk

Date Reported to Europe: 22/12/2008

Date Report Created 27/05/2009

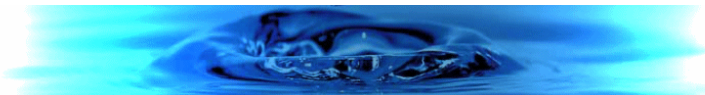


Q/RDI or Point/Diffuse		
QPD	Q class/EPA Diffuse Model or worst case of Point and Diffuse (2008)	1a At Risk
Hydrology		
RHY1	Water balance - Abstraction	1a At Risk
Overall Risk		
RA	Rivers Overall - Worst Case (2008)	1a At Risk

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Date Reported to Europe: 22/12/2008

Date Report Created 27/05/2009



Objectives Report

WaterBody Category: Subbasin
 Waterbody

WaterBody Name: Lee,

WaterBody Code: IE_SW_19_1663

Overall Objective: Restore

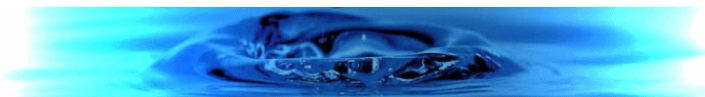


Objectives Description		Result
Objectives		
OB1	Objective 1 - Protected Areas	Restore
OB2	Objective 2 - Protect High and Good Status	Not Applicable
OB3	Objective 3 - Restore Less Than Good Status	Not Applicable
OB4	Objective 4 - Reduce Chemical Pollution	Not Applicable
OBO	Overall Objective	Restore
Deadline		
YR	Default Year by which the objective must be met	2015
EX	Revised Objective Deadline	2015
OBO	Overall Objective and Deadline	Restore - 2015

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Date Report Created 27/05/2009



Basic Measures Report

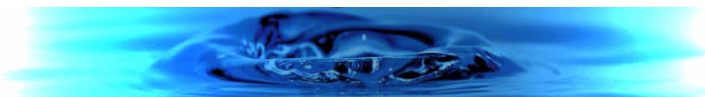
WaterBody Category: Subbasin Waterbody
WaterBody Name: Lee, Trib of Lee
WaterBody Code: IE_SW_19_1663



Basic Measures Description		Applicable
Key Directives		
BA	Bathing Waters Directive	No
BI	Birds Directive	No
HA	Habitats Directive	No
DW	Drinking Waters Directive	Yes
SEV	Major Accidents and Emergencies (Seveso) Directive	Yes
EIA	Environmental Impact Assessment Directive	Yes
SE	Sewage Sludge Directive	Yes
UW	Urban Waste Water Treatment Directive	Yes
PL	Plant Protection Products Directive	Yes
NI	Nitrates Directive	Yes
IP	Integrated Pollution Prevention Control Directive	Yes
Other Stipulated Measures		
CR	Cost recovery for water use	Yes
SU	Promotion of efficient and sustainable water use	Yes
DWS	Protection of drinking water sources	Yes
AB	Control of abstraction and impoundments	Yes
PT	Control of point source discharges	Yes
DI	Control of diffuse source discharges	Yes
GWD	Authorisation of discharges to groundwater	No
PS	Control of priority substances	Yes
MOR	Control of physical modifications to surface waters	Yes
OA	Controls on other activities impacting on water status	Yes
AP	Prevention or reduction of the impact of accidental pollution incidents	Yes

Date Reported to Europe: 22/12/2008

Date Report Created 27/05/2009



Urban and Industrial Discharges Supplementary Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: Lee, Trib of Lee

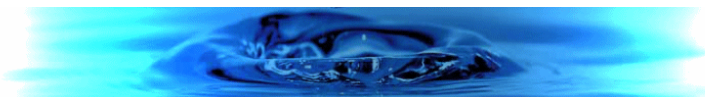
WaterBody Code: IE_SW_19_1663



	Point discharges to waters from municipal and industrial sources	Result
PINDDIS	Is there one or more industrial discharge (Section 4 licence issued by the local authority or IPPC licence issued by the EPA) contained within the water body?	Yes
PINDDISR	Are there industrial discharges (Section 4 licence issued by the local authority or IPPC licence issued by the EPA) that cause the receiving water to be 'At Risk' within the water body?	Yes
PB1	Basic Measure 1 - Measures for improved management.	Yes
PB2	Basic Measure 2 - Optimise the performance of the waste water treatment plant by the implementation of a performance management system.	Yes
PB3	Basic Measure 3 - Revise existing Section 4 license conditions and reduce allowable pollution load.	Yes
PB4	Basic Measure 4 - Review existing IPPC license conditions and reduce allowable pollution load.	Yes
PB5	Basic Measure 5 - Investigate contributions to the collection system from unlicensed discharges.	Yes
PB6	Basic Measure 6 - Investigate contributions to the collection system of specific substances known to impact ecological status.	Yes
PB7	Basic Measure 7 - Upgrade WWTP to increase capacity.	Yes
PB8	Basic Measure 8 - Upgrade WWTP to provide nutrient removal treatment.	No
PS1	Supplementary Measure 1 - Measures intended to reduce loading to the treatment plant.	Yes
PS2	Supplementary Measure 2 - Impose development controls where there is, or is likely to be in the future, insufficient capacity at treatment plants.	Yes
PS3	Supplementary Measure 3 - Initiate investigations into characteristics of treated wastewater for parameters not presently required to be monitored under the urban wastewater treatment directive.	Yes
PS4	Supplementary Measure 4 - Initiate research to verify risk assessment results and determine the impact of the discharge.	Yes
PS5	Supplementary Measure 5 - Use decision making tools in point source discharge management.	No
PS6	Supplementary Measure 6 - Install secondary treatment at plants where this level of treatment is not required under the urban wastewater treatment directive.	No
PS7	Supplementary Measure 7 - Apply a higher standard of treatment (stricter emission controls) where necessary.	Yes
PS8	Supplementary Measure 8 - Upgrade the plant to remove specific substances known to impact on water quality status.	Yes

Date Reported to Europe: 22/12/2008

Date Report Created 27/05/2009

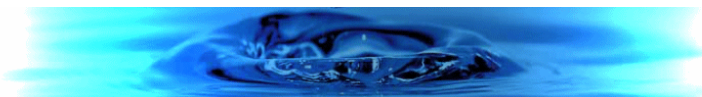


PS9	Supplementary Measure 9 - Install ultra-violet or similar type treatment.	No
PS10	Supplementary Measure 10 - Relocate the point of discharge.	Yes

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Date Report Created 27/05/2009



Physical Modifications Supplementary Measures Report

WaterBody Category: Subbasin
WaterBody Name: Lee,
WaterBody Code: IE_SW_19_1663

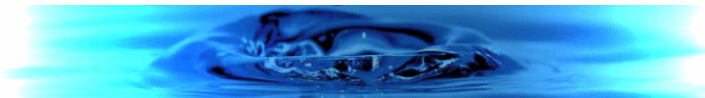


	Physical Modifications Supplementary Measures	Applicable
	Reduce	
SM1	Codes of Practice	Yes
SM2	Support for voluntary initiatives	Yes
	Remediate	
SM3	Channelisation impact remediation schemes	No
SM4	Channelisation investigation	No
SM5	Overgrazing remediation	No
SM6	Impassable barriers, impact confirmed, investigation into feasibility of remediation required	No
SM7	Impassable barriers investigation	Yes

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Date Report Created 27/05/2009



Unsewered Properties Supplementary Measures Report

WaterBody Subbasin Waterbody
WaterBody Name: Lee, Trib of Lee
WaterBody IE_SW_19_1663

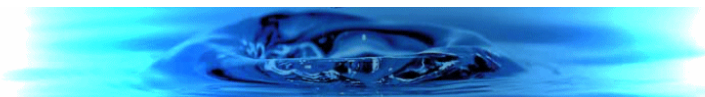


Supplementary Measures for		Applicable
Unsewered Properties		
SP1	Amend building regulations	Yes
SP2	Establish certified expert panels for site investigation and certification of installed systems	Yes
SP3	Assess applications for new unsewered systems by applying risk mapping/decision support systems and codes of practice	Yes
SP4	Carry out an inspection programme in prioritised locations for existing systems and record results in an action tracking system	No
SP5	Enforce requirements for percolation	No
SP6	Enforce requirements for de-sludging	Yes
SP7	Consider connection to municipal systems	No

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Forestry Measures Report

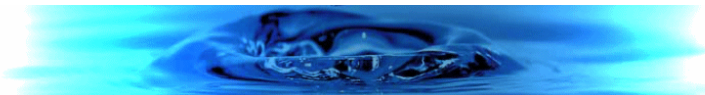
WaterBody Category: Subbasin Waterbody
WaterBody Name: Lee, Trib of Lee
WaterBody Code: IE_SW_19_1663



	Forestry Measures for	Applicable
	Forestry	
SF1	Management Instruments - Ensure regulations and guidance are cross referenced and revised to incorporate proposed measures	No
SF2	Acidification - Avoid or limit afforestation on 1st and 2nd order stream catchments in acid sensitive areas	No
SF3	Acidification - Revise the Acidification Protocol to ensure actual minimum alkalinities are detected and revise boundary conditions for afforestation in acid sensitive areas	No
SF10	Pesticide Use - Pre-dip trees in nurseries prior to planting out	No
SF11	Pesticide Use - Maintain registers of pesticide use	No
SF12	Acidification - Restructure existing forests to include open space and structural diversity through age classes and species mix, including broadleaves	No
SF13	Acidification - Mitigate acid impacts symptomatically using basic material	No
SF14	Acidification - Manage catchment drainage to increase residence times and soil wetting	No
SF15	Acidification - Implement measures to increase stream production.	No
SF16	Eutrophication - Establish riparian zone management prior to clearfelling	No
SF17	Eutrophication and Sedimentation - Enhance sediment control	No
SF18	Eutrophication - Manage catchment drainage to increase residence times and soil wetting, including no drainage in some locations	No
SF19	Sedimentation - Establish riparian zone management prior to clearfelling	No
SF20	Sedimentation - Enhance sediment control	No
SF21	Sedimentation - Manage catchment drainage to increase residence times and soil wetting, including no drainage in some locations	No
SF22	Hydromorphology - Enhance drainage network management, minimise drainage in peat soils	No
SF23	Pesticide Use - Develop biological control methods	No

Date Reported to Europe: 22/12/2008

Date Report Created 27/05/2009



SF4	Eutrophication and Sedimentation - Avoid or limit forest cover on peat sites	No
SF5	Eutrophication and Sedimentation - Change the tree species mix on replanting	No
SF6	Eutrophication and Sedimentation - Limiting felling coup size	No
SF7	Eutrophication and Sedimentation - Establish new forest structures on older plantation sites	No
SF8	Hydromorphology - Audit existing drainage networks in forest catchments	No
SF9	Pesticide Use - Reduce pesticide usage	No

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Date Reported to Europe: 22/12/2008

Date Report Created 27/05/2009

Rep No. 318/09

				Parameter	Nitrite	Molybdate P	Ammonium	Nitrate
					NO2	P	NH4	NO3
				Max.	0.05	0.035	0.5	25
				Target	--	--	--	--
				Min.	--	--	--	--
Project	Project Re	Location	Sample Date	Comments	mg/l	mg/l	mg/l	mg/l
Lee		Rooves Be	09-Jan-07		0.022	0.018	0.094	8.7
Lee		Rooves Be	17-Jan-07		0.023	0.014	0.041	9.9
Lee		Rooves Be	08-Feb-07		0.029	0.013	0.07	
Lee		Rooves Be	15-Mar-07		0.029	0.019	0.067	
Lee		Rooves Be	18-Apr-07		0.025	< 0.006	< 0.026	9.8
Lee		Rooves Be	09-May-07		0.038	< 0.006	0.038	
Lee		Rooves Be	13-Jun-07		0.043	< 0.006	0.039	
Lee		Rooves Be	11-Jul-07		0.039	< 0.006	0.039	
Lee		Rooves Be	07-Aug-07		0.035	0.008	< 0.026	3.5
Lee		Rooves Be	20-Sep-07		0.074	< 0.006	0.073	
Lee		Rooves Be	10-Oct-07		0.043	< 0.006	< 0.026	
Lee		Rooves Be	15-Nov-07		0.051	0.008	0.076	4.3
Lee		Rooves Be	12-Dec-07		0.025	0.018	0.053	
Lee		Rooves Be	21-Feb-08		0.022	0.014	0.101	8.9
Lee		Rooves Be	12-Mar-08		0.015	< 0.006	0.027	8.1
Lee		Rooves Be	10-Apr-08		0.017	< 0.006	< 0.026	
Lee		Rooves Be	14-May-08		< 0.013	< 0.006	0.045	
Lee		Rooves Be	11-Jun-08		0.045	< 0.006	0.031	
Lee		Rooves Be	09-Jul-08		0.03	< 0.006	0.062	
Lee		Rooves Be	13-Aug-08		0.034	0.008	0.081	4.9
Lee		Rooves Be	10-Sep-08		0.027	0.014	0.061	
Lee		Rooves Be	08-Oct-08		0.028	0.006	0.058	
Lee		Rooves Be	12-Nov-08		0.021	0.014	0.041	
Lee		Rooves Be	10-Dec-08		0.03	0.016	0.061	
Lee		Rooves Be	15-Jan-09		0.029	0.021	0.072	
Lee		Rooves Be	11-Feb-09		0.017	0.012	0.061	
Lee		Rooves Be	12-Mar-09		0.023	0.008	0.039	5.6
Lee		Rooves Be	08-Apr-09		0.02	0.007	0.015	

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Rep. No. 322/09

Parameter	Temperature	Dissolved O ₂	pH	BOD	Nitrite	Molybdate	Ammonium	Nitrate	Hardness	Alkalinity	Appearance	Dissolved	Suspended	Colour	Chloride	Conductivity	Copper (D)	Total Zinc	
Max.	--	15	9	5	0.05	0.035	0.5	25	--	--	--	150	--	500	--	--	--	--	
Target	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Min.	--	5	6	--	--	--	--	--	--	--	--	50	--	--	--	--	--	--	
Project	Location	Sample Date	Comments	Degrees C	mg/l	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	% O ₂	mg/l	Hazen	mg/l	µS/cm	mg/l	mg/l	
Lee	Carrigadrohid	09-Jan-07		5.3	11.9	7.5	< 1	0.021	0.016	0.06	8.6	47	28	clear	96	1	45	144	
Lee	Carrigadrohid	17-Jan-07		7.8	10.8	7.5	< 1	0.024	0.013	0.046	8.8	42	24		92	2	44	122	
Lee	Carrigadrohid	08-Feb-07		5.7	12.1	7.7	< 1	0.025	0.012	0.052			34		100	2	25	142	< 0.001
Lee	Carrigadrohid	15-Mar-07		9.7	10.7	7.2	< 1	0.024	0.018	0.057		63		clear	94	4			0.001
Lee	Carrigadrohid	18-Apr-07		15	9.4	7.7	< 1	0.04	< 0.006	0.034	8.9	65	40	clear	92	1			0.002
Lee	Carrigadrohid	09-May-07		14.7	7.8	7.5	< 1	0.056	< 0.006	0.062		66	56	clear	78	1	28		0.001
Lee	Carrigadrohid	11-Jul-07		17.6	9.7	7.5	1.1	0.026	< 0.006	< 0.026		37	24		101	3			0.001
Lee	Carrigadrohid	07-Aug-07		18.3	10.1	7.8	1.3	0.029	< 0.006	< 0.026	3.1	56	32		105	2			
Lee	Carrigadrohid	14-May-08		17.2	9.2	7.6	< 1	< 0.013	< 0.006	0.044					96	1		131	
Lee	Carrigadrohid	11-Jun-08		16.3	6.8	7.4	< 1	0.036	< 0.006	0.093				Clear	68	2		129	
Lee	Carrigadrohid	09-Jul-08		15.3	8.8	7.3	1.6	0.027	0.013	0.063				clear	89	3.8			
Lee	Carrigadrohid	13-Aug-08		16.6	9.9	7.6	1.7	0.035	0.007	0.075	4.5			Clear	106	8		122	
Lee	Carrigadrohid	10-Sep-08		15.1	9.1	7.3	1.5	0.026	0.012	0.069					91	4		105	
Lee	Carrigadrohid	08-Oct-08		13.6	9.8	7.7	< 1	0.028	< 0.006	0.033					93	1			
Lee	Carrigadrohid	12-Nov-08		7.4	11.1	7.4	< 1	0.017	0.025	0.056					92	1			
Lee	Carrigadrohid	10-Dec-08		5.8	10	7.4	< 1	0.024	0.013	0.049				clear	81	1			
Lee	Carrigadrohid	15-Jan-09		7.2	11.2	7.3	< 1	0.022	0.017	0.068				clear	95	3			
Lee	Carrigadrohid	11-Feb-09		5	11	7.6	< 1	0.015	0.012	0.033				clear	85		38	158	
Lee	Carrigadrohid	12-Mar-09		8	11.1	7.5	< 1	0.019	0.007	0.056	4.2			clear	94	2		106	
Lee	Carrigadrohid	08-Apr-09		10.9	11	7.8	< 1	0.019	< 0.006	0.011				clear	100	3		141	

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Parameter	Temperature	Dissolved O ₂	pH	BOD	Nitrite	Molybdate	Ammonium	Nitrate	Hardness	Alkalinity	Appearance	Dissolved	Suspended	Zn	Colour	Chloride	Conductivity	Copper (D)	Total Zinc		
Max.	--	15	9	5	0.05	0.035	0.5	25	--	--	--	150	--	Zn	Hz	Cl	--	Diss. Cu.	--		
Target	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Min.	--	5	6	--	--	--	--	--	--	--	--	50	--	--	--	--	--	--	--		
Project	Location	Sample Date	Comments	Degrees C	mg/l	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	% O ₂	mg/l	µg/l	Hazen	mg/l	µS/cm	mg/l	mg/l		
Lee	Rooves Beg	09-Jan-07		5.2	11.9	7.4	1.1	0.022	0.018	0.094	8.7	46	28	clear	95	1					
Lee	Rooves Beg	17-Jan-07		8.3	10.6	7.4	< 1	0.023	0.014	0.041	9.9	42	24		91	2					
Lee	Rooves Beg	08-Feb-07		5.9	11.7	7.6	< 1	0.029	0.013	0.07			30		95	2		16.1	123		
Lee	Rooves Beg	15-Mar-07		9.1	11	7.5	< 1	0.029	0.019	0.067			48		94	4				0.001	
Lee	Rooves Beg	18-Apr-07		16.4	8.9	8.1	1.1	0.025	< 0.006	< 0.026	9.8	66	44	clear	91	2				0.001	< 0.002
Lee	Rooves Beg	09-May-07		14.2	9.5	7.6	< 1	0.038	< 0.006	0.038			66	44	Copepods	94	1		29	0.001	< 0.025
Lee	Rooves Beg	13-Jun-07		20	9.2	7.9	1.7	0.043	< 0.006	0.039			66	42	copepods	102	1		18	0.001	< 0.001
Lee	Rooves Beg	11-Jul-07		17.9	9.6	7.3	2.4	0.039	< 0.006	0.039			43	30		101	5			0.002	< 0.025
Lee	Rooves Beg	07-Aug-07		19.5	10.4	7.8	1.9	0.035	0.008	< 0.026	3.5	63	32		114	3					
Lee	Rooves Beg	20-Sep-07		16.9	6.8	7.6	1.1	0.074	< 0.006	0.073			66	40		70	1				< 0.025
Lee	Rooves Beg	10-Oct-07		15.7	7.5	7.9	< 1	0.043	< 0.006	< 0.026			64	42		75	2		13.2		
Lee	Rooves Beg	15-Nov-07		11.4	8.5	7.8	< 1	0.051	0.008	0.076	4.3	26	36		77	< 1		13.7	125		< 0.025
Lee	Rooves Beg	12-Dec-07		8.2	10.3	7.2	< 1	0.025	0.018	0.053			41	30	clear	87	3				
Lee	Rooves Beg	21-Feb-08		8.4	11	7.6	< 1	0.022	0.014	0.101	8.9			36	clear	94	2		< 25		< 0.004
Lee	Rooves Beg	12-Mar-08		7.5	12.3	7.8	< 1	0.015	< 0.006	0.027	8.1	47	36	clear	104	< 1		< 25	60		< 0.004
Lee	Rooves Beg	10-Apr-08		9.9	12.1	8	1.3	0.017	< 0.006	< 0.026					clear	109	3				
Lee	Rooves Beg	14-May-08		18.1	9.2	7.8	< 1	< 0.013	< 0.006	0.045					clear	98	2			149	
Lee	Rooves Beg	11-Jun-08		18.5	9.4	7.8	< 1	0.045	< 0.006	0.031					Clear	98	1			139	
Lee	Rooves Beg	09-Jul-08		16.9	8.7	7.4	1.3	0.03	< 0.006	0.062					clear	91	2				
Lee	Rooves Beg	13-Aug-08		16.6	10.4	7.5	< 1	0.034	0.008	0.081	4.9			Clear	110	3				116	
Lee	Rooves Beg	10-Sep-08		15	9	7.3	1.1	0.027	0.014	0.061				clear	90	3				107	
Lee	Rooves Beg	08-Oct-08		14.4	11.2	7.7	< 1	0.028	0.006	0.058			55			109	1				
Lee	Rooves Beg	12-Nov-08		8	11	7.5	< 1	0.021	0.014	0.041					clear	93	2				
Lee	Rooves Beg	10-Dec-08		8	11.8	7.5	< 1	0.03	0.016	0.061					clear	105	2				
Lee	Rooves Beg	15-Jan-09		7.4	10.8	7.2	< 1	0.029	0.021	0.072					clear	93	4				
Lee	Rooves Beg	11-Feb-09		5.1	12.1	7.5	< 1	0.017	0.012	0.061					clear	94			56	135	
Lee	Rooves Beg	12-Mar-09		8.9	11.1	7.5	< 1	0.023	0.008	0.039	5.6				clear	93	2			123	
Lee	Rooves Beg	08-Apr-09		10.3	11.3	7.8	1	0.02	0.007	0.015					clear	103	1			130	

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Parameter	Conductivity	Dissolved O ₂	Temperature	Dissolved O ₂	Molybdate P	pH	Nitrite	Ammonium	Nitrate	Chlorophyl	Total Phos	Alkalinity	Hardness	Secchi Disk	Colour	Chloride		
		O ₂		% O ₂	P		NO ₂	NH ₄	NO ₃		P	CaCO ₃	CaCO ₃		Hz	Cl		
Max.	--	15	--	150	--	9	0.05	--	--	25	--	--	--	--	--	--		
Target	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Min.	--	5	--	50	--	6	--	--	--	--	--	--	--	0.25	--	--		
Project	Sample Date	Comments	µS/cm	mg/l	Degrees C	% O ₂	mg/l	pH units	mg/l	mg/l	mg/l	mg/m ³	mg/l	mg/l	mg/l	m	Hazen	mg/l
Inniscarra	08-Aug-07		118	10.5	19.3	111.8	< 0.006	7.9	0.033	< 0.026	3.55	29	36	53	1.7	64		
Inniscarra	30-Aug-07		121	9.5	19.1	100	< 0.006	7.9	0.039	0.043	3.85	42.4	0.013	36	62	2.5	63	
Inniscarra	20-Sep-07		131	9.4	14.5	100.4	< 0.006	7.6	0.087	0.104		12.1	0.013	36	65	2.5		
Inniscarra	17-Oct-07		126	9.1	15.1	89.3	< 0.006	7.6	0.04	0.056		17.3	0.014	36	45	2.48	34	
Inniscarra	14-Nov-07		125	9.3	11.6	85	0.006	7.8	0.059	0.056	4.23	12.9	0.014	36	36	3.1	50	
Inniscarra	10-Dec-07		111	10.7	8.7	93		7.5		0.057		0.042	28	39	1	88		
Inniscarra	16-Jan-08		117	11.1	7.1	94.9	< 0.023	7.3	0.018	0.059	8.26		36	54	1.5	76		
Inniscarra	21-Feb-08		136	10.7	8.1	91.5	0.011	7.6	0.02	0.065	8.57		36	48	2.7	49		
Inniscarra	27-Mar-08		140	12.3	9.8	110	< 0.006	8	0.013	< 0.026	6.97	0.022	34	55	2.2	47		
Inniscarra	29-Apr-08		142	11	10.7	102.4	< 0.006	7.8		< 0.026	7.06	14.1	0.016	46	47	2.1		
Inniscarra	27-May-08		136	10.1	16	103	< 0.006	7.7	0.03	0.08	5.11	20.8	0.016	24	54	2.1		
Inniscarra	25-Jun-08		133	9.6	16.8	99.7	< 0.006	7.7	0.071	0.026	4.53	18.9	0.025	60	49	2		
Inniscarra	29-Jul-08	[Chloride; 13.06mg/l 08/08/2008 16:18.]	117	9.5	18.9	106.5	0.012	7.9	0.04	0.053	4.13	59	0.018	36	40	1.9		
Inniscarra	27-Aug-08		108	9.4	19.1	100.4	0.009	7.6	0.025	0.042	4.13	16.3	0.021	42	38		84	
Inniscarra	18-Sep-08		116	10.7	15.2	106.1	0.007	7.7			5.2	71.4	0.042	38	42	1.7	85	
Inniscarra	16-Oct-08		95	8.6	13	82.4	< 0.006	7.3	0.02	0.039	3.15	5.8	0.018	28	30		77	
Inniscarra	19-Nov-08	Surface water	114	10.6	9.1	91.3	0.012	7.6	0.017	0.044	5.73	1.6	0.021	36	42	2.5	43	12.2
Inniscarra	03-Dec-08		125	10.6	6.9	89	0.013	7.6	0.024	0.074	6.13	2.1	0.013	42	42	3	45	11.9

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Parameter	Conductivi	Dissolved	Temperatu	Dissolved	Molybdate	pH	Nitrite	Ammonium	Nitrate	Chlorophy	Total Phos	Alkalinity	Hardness	Sechi Disk	Colour	Silica	Chloride		
		O2			P		NO2	NH4	NO3		P	CaCO3	CaCO3		Hz	SiO2	Cl		
Max.	--	15	--	150	--	9	0.05	--	--	25	--	--	--	--	--	--	--		
Target	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Min.	--	5	--	50	--	6	--	--	--	--	--	--	--	0.25	--	--	--		
Project	Sample Date	Comments	µS/cm	mg/l	Degrees C	% O2	mg/l	pH units	mg/l	mg/l	mg/l	mg/m3	mg/l	mg/l	mg/l	m	Hazen	mg/l	mg/l
Inniscarra	08-Aug-07		116	8.6	18.3	91.5	< 0.006	7.7	0.026	0.054	3.34	8.4	38	46	1.2	57			
Inniscarra	30-Aug-07		116	8.6	17.5	88	< 0.006	7.8	0.023	0.032	2.93	12.9	0.014	36	62	1.9	60		
Inniscarra	20-Sep-07		133	8.7	17.2	91.1	0.007	7.6	0.036	0.086		1.2	0.014	42	69	1.7			
Inniscarra	17-Oct-07		128	8.6	13.9	84.6	0.006	7.5	0.043	0.112		3.8	0.016	40	46	0.5	33		
Inniscarra	14-Nov-07		110	9	10.7	85	0.008	8.1	0.037	0.089	3.59	5.3	0.013	32	39	2.1	71		
Inniscarra	10-Dec-07		111	10.7	8.1	91	0.029	7.7	< 0.013	0.086	7.2		0.045	24	38	1.1	95		
Inniscarra	16-Jan-08		115	11.1	7	94.3	< 0.016	7.4	0.019	0.075	7.37			26	49	1.3	58		
Inniscarra	21-Feb-08		140	11.2	7.9	94	0.011	7.7	0.023	0.093	9.33			34	50	1.5	45		
Inniscarra	27-Mar-08		142	12.6	8.4	109.3	< 0.006	8	0.013	< 0.026	6.8		0.017	40	47	1.1	43		
Inniscarra	29-Apr-08		146	11	11.2	104	< 0.006	7.9		< 0.026	9.42	14.9	0.016	44	51	1.6			
Inniscarra	27-May-08		126	9.4	14.6	93	0.007	7.5	0.035	0.139	4.19	6.4	0.016	62	52	1.6			
Inniscarra	25-Jun-08		130	10.7	16.7	110	0.006	7.5	0.04	0.033	3.59	17.1	0.016	46	57	1.9			
Inniscarra	29-Jul-08	[Chloride; 13.22mg/l 08/08/2008 16:18.]	125	9.1	19	98.7	< 0.006	7.7	0.03	0.082	4.01	11.7	0.014	42	46	1.2			
Inniscarra	27-Aug-08		106	8.6	17.5	88.3	0.008	7.8	0.026	0.079	3.99	11.8	0.019	32	41		82		
Inniscarra	18-Sep-08		114	8.8	13.9	85.8	0.01	7.3			4.93	6.2	0.017	36	52	1.6	56		
Inniscarra	16-Oct-08		96	9.1	12.9	86.5	0.007	7.3	0.019	0.056	3.17	6.2	0.028	32	32		80		
Inniscarra	19-Nov-08	Surface water	120	10.8	9.5	94.2	0.01	7.9	0.02	0.046	5.91	1.6	< 0.01	38	46	1	37	1.42	12.5
Inniscarra	03-Dec-08		121	11	6.2	89.5	0.011	7.6	0.02	0.041	5.42	2	0.016	44	41	0.3	47	1.4	11.9

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Project	Project Re	Location	Sample Date	Comments	Parameter	Nitrite	Molybdate	Ammonium	Nitrate
						NO2	P	NH4	NO3
					Max.	0.05	Varies	Varies	Varies
					Target	--	--	--	--
					Min.	--	--	--	--
					mg/l	mg/l	mg/l	mg/l	
Lee		Ang.Rest.Br	09-Jan-07	T.P.<0.02	0.033	0.023	0.079	11.2	
Lee		Inniscarra	09-Jan-07		0.032	0.021	0.103	10.8	
Lee		Co.Corp.Int	09-Jan-07		0.037	0.029	0.085	13.7	
Lee		Carrigadrohid	09-Jan-07		0.021	0.016	0.06	8.6	
Lee		Inchigeelagh Br.	09-Jan-07		< 0.013	0.007	0.047	3.4	
Lee		Dromcarra B	09-Jan-07		< 0.013	0.009	0.062	5	
Lee		Bealahaglashin Br.	09-Jan-07		0.016	0.014	0.049	6	
Lee		Rooves Beg	09-Jan-07		0.022	0.018	0.094	8.7	
Lee		Inch/sig Br	09-Jan-07		< 0.013	< 0.006	< 0.026	2.3	
Lee		Bealahaglashin Br.	17-Jan-07		0.032	0.01	0.04	6.9	
Lee		Inchigeelagh Br.	17-Jan-07		< 0.013	0.006	0.032	2.9	
Lee		Rooves Beg	17-Jan-07		0.023	0.014	0.041	9.9	
Lee		Ang.Rest.Br	17-Jan-07		0.041	0.024	0.057	11.5	
Lee		Inniscarra	17-Jan-07		0.035	0.022	0.062	11.5	
Lee		Dromcarra B	17-Jan-07		0.014	0.009	0.026	4.8	
Lee		Carrigadrohid	17-Jan-07		0.024	0.013	0.046	8.8	
Lee		Co.Corp.Int	17-Jan-07		0.059	0.029	0.103	13.6	
Lee		Inch/sig Br	17-Jan-07		< 0.013	< 0.006	< 0.026	2	
Lee		Inch/sig Br	08-Feb-07		0.021	0.008	0.069		
Lee		Ang.Rest.Br	08-Feb-07		0.078	0.176	0.435		
Lee		Dromcarra B	08-Feb-07		0.014	0.014	0.093		
Lee		Rooves Beg	08-Feb-07		0.029	0.013	0.07		
Lee		Inniscarra	08-Feb-07		0.059	0.14	0.314		
Lee		Inchigeelagh Br.	08-Feb-07		< 0.013	0.006	0.038		
Lee		Co.Corp.Int	08-Feb-07		0.08	0.166	0.533		
Lee		Carrigadrohid	08-Feb-07		0.025	0.012	0.052		
Lee		Bealahaglashin Br.	08-Feb-07		< 0.013	< 0.006	< 0.026		
Lee		Ang.Rest.Br	15-Mar-07		0.035	0.022	0.066	9.2	
Lee		Carrigadrohid	15-Mar-07		0.024	0.018	0.057		
Lee		Inniscarra	15-Mar-07		0.03	0.021	0.058		
Lee		Dromcarra B	15-Mar-07		< 0.013	< 0.006	0.027		
Lee		Inchigeelagh Br.	15-Mar-07		< 0.013	< 0.006	0.03		
Lee		Inch/sig Br	15-Mar-07		< 0.013	< 0.006	< 0.026	2.5	
Lee		Co.Corp.Int	15-Mar-07		0.035	0.022	0.061		
Lee		Inchigeelagh Br.	15-Mar-07		< 0.013	< 0.006	0.026	2.5	
Lee		Bealahaglashin Br.	15-Mar-07		0.016	< 0.006	0.038		
Lee		Rooves Beg	15-Mar-07		0.029	0.019	0.067		
Lee		Bealahaglashin Br.	18-Apr-07		0.058	< 0.006	0.076	7	
Lee		Carrigadrohid	18-Apr-07		0.04	< 0.006	0.034	8.9	
Lee		Ang.Rest.Br	18-Apr-07		0.028	0.01	0.026	11.6	
Lee		Inch/sig Br	18-Apr-07		< 0.013	< 0.006	< 0.026	2.4	
Lee		Inniscarra	18-Apr-07		0.024	0.007	0.035	11.2	
Lee		Rooves Beg	18-Apr-07		0.025	< 0.006	< 0.026	9.8	
Lee		Dromcarra B	18-Apr-07		0.015	< 0.006	< 0.026	3.8	
Lee		Co.Corp.Int	18-Apr-07		0.039	0.017	0.042	15.4	
Lee		Inchigeelagh Br.	18-Apr-07		< 0.013	< 0.006	0.026	2.6	
Lee		Co.Corp.Int	09-May-07		0.092	0.036	0.034		
Lee		Bealahaglashin Br.	09-May-07		0.052	< 0.006	0.119		
Lee		Dromcarra B	09-May-07		< 0.013	< 0.006	< 0.026		
Lee		Carrigadrohid	09-May-07		0.056	< 0.006	0.062		
Lee		Inchigeelagh Br.	09-May-07		< 0.013	< 0.006	< 0.026		
Lee		Ang.Rest.Br	09-May-07		0.064	< 0.006	0.048		
Lee		Rooves Beg	09-May-07		0.038	< 0.006	0.038		
Lee		Inniscarra	09-May-07		0.063	0.016	0.032		
Lee		Inch/sig Br	09-May-07		< 0.013	< 0.006	< 0.026	< 1.8	
Lee		Ang.Rest.Br	13-Jun-07		0.039	0.011	< 0.026	11.2	
Lee		Dromcarra B	13-Jun-07		< 0.013	< 0.006	0.029		
Lee		Inch/sig Br	13-Jun-07		< 0.013	< 0.006	< 0.026	2.1	

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Lee	Foot Br. Castlemasters	13-Jun-07	< 0.013	< 0.006	< 0.026	2.9
Lee	Rooves Beg	13-Jun-07	0.043	< 0.006	0.039	
Lee	Inchigeelagh Br.	13-Jun-07	< 0.013	< 0.006	< 0.026	
Lee	Inniscarra	13-Jun-07	0.045	< 0.006	< 0.026	10.9
Lee	Bealahaglashin Br.	13-Jun-07	0.049	< 0.006	0.066	
Lee	Co.Corp.Int	13-Jun-07	0.088	0.045	0.048	
Lee	Co.Corp.Int	11-Jul-07	0.08	0.016	0.034	9.6
Lee	Bealahaglashin Br.	11-Jul-07	0.014	< 0.006	< 0.026	
Lee	Carrigadrohid	11-Jul-07	0.026	< 0.006	< 0.026	
Lee	Rooves Beg	11-Jul-07	0.039	< 0.006	0.039	
Lee	Inch/sig Br	11-Jul-07	< 0.013	< 0.006	< 0.026	1.8
Lee	Inniscarra	11-Jul-07	0.113	0.008	0.04	7.3
Lee	Ang.Rest.Br	11-Jul-07	0.094	0.022	0.03	7.9
Lee	Foot Br. Castlemasters	11-Jul-07	< 0.013	0.007	0.139	< 1.8
Lee	Dromcarra B	11-Jul-07	< 0.013	0.006	< 0.026	
Lee	Rooves Beg	07-Aug-07	0.035	0.008	< 0.026	3.5
Lee	Inch/sig Br	07-Aug-07	< 0.013	< 0.01	0.04	< 2
Lee	Bealahaglashin Br.	07-Aug-07	0.02	< 0.006	< 0.026	2.9
Lee	Co.Corp.Int	07-Aug-07	0.042	0.021	0.026	13.6
Lee	Inniscarra	07-Aug-07	0.068	0.022	0.044	8.3
Lee	Ang.Rest.Br	07-Aug-07	0.06	0.018	0.026	9.5
Lee	Dromcarra B	07-Aug-07	< 0.013	< 0.006	< 0.026	< 2
Lee	Foot Br. Castlemasters	07-Aug-07	0.014	< 0.006	0.039	< 1.8
Lee	Carrigadrohid	07-Aug-07	0.029	< 0.006	< 0.026	3.1
Lee	Dromcarra B	20-Sep-07	< 0.013	< 0.006	0.045	
Lee	Inch/sig Br	20-Sep-07	< 0.013	< 0.006	< 0.026	
Lee	Foot Br. Castlemasters	20-Sep-07	< 0.013	< 0.006	< 0.026	
Lee	Bealahaglashin Br.	20-Sep-07	0.063	< 0.006	0.033	
Lee	Co.Corp.Int	20-Sep-07	0.043	0.033	< 0.026	
Lee	Inchigeelagh Br.	20-Sep-07	< 0.013	< 0.006	< 0.026	
Lee	Inniscarra	20-Sep-07	0.088	< 0.006	0.036	
Lee	Ang.Rest.Br	20-Sep-07	0.041	0.017	< 0.026	
Lee	Rooves Beg	20-Sep-07	0.074	< 0.006	0.073	
Lee	Ang.Rest.Br	10-Oct-07	0.034	0.039	0.026	8.8
Lee	Inniscarra	10-Oct-07	0.049	0.01	0.036	6
Lee	Rooves Beg	10-Oct-07	0.043	< 0.006	< 0.026	
Lee	Bealahaglashin Br.	10-Oct-07	0.022	0.007	0.093	
Lee	Inchigeelagh Br.	10-Oct-07	< 0.013	< 0.006	0.034	< 2
Lee	Foot Br. Castlemasters	10-Oct-07	< 0.013	< 0.006	0.052	
Lee	Co.Corp.Int	10-Oct-07	0.03	0.028	0.049	
Lee	Dromcarra B	10-Oct-07	< 0.013	< 0.006	0.05	
Lee	Inch/sig Br	10-Oct-07	< 0.013	0.007	< 0.026	4
Lee	Inniscarra	24-Oct-07 GR1016	0.028	0.015	< 0.026	7.3
Lee	Ang.Rest.Br	25-Oct-07 GR1017	0.031	0.014	< 0.026	7.2
Lee	Ang.Rest.Br	15-Nov-07	0.035	0.016	< 0.026	6.6
Lee	Inniscarra	15-Nov-07	0.047	0.009	< 0.026	6.2
Lee	Foot Br. Castlemasters	15-Nov-07	0.024	< 0.006	0.07	< 1.8
Lee	Dromcarra B	15-Nov-07	0.015	0.006	0.031	2.8
Lee	Inch/sig Br	15-Nov-07	< 0.013	< 0.006	< 0.026	2
Lee	Inchigeelagh Br.	15-Nov-07	0.015	< 0.006	0.094	< 2
Lee	Rooves Beg	15-Nov-07	0.051	0.008	0.076	4.3
Lee	Co.Corp.Int	15-Nov-07	0.031	0.045	0.037	9.3
Lee	Bealahaglashin Br.	15-Nov-07	0.056	< 0.006	0.123	3.8
Lee	Ang.Rest.Br	12-Dec-07 t.cliform=1	0.037	0.023	0.069	8.2
Lee	Dromcarra B	12-Dec-07	0.018	0.009	0.071	
Lee	Inch/sig Br	12-Dec-07	< 0.013	< 0.006	0.026	< 1.8
Lee	Co.Corp.Int	12-Dec-07	0.039	0.021	0.092	
Lee	Inniscarra	12-Dec-07	0.038	0.02	0.07	10.1
Lee	Inchigeelagh Br.	12-Dec-07	0.014	0.009	0.087	
Lee	Rooves Beg	12-Dec-07	0.025	0.018	0.053	
Lee	Foot Br. Castlemasters	12-Dec-07	0.015	0.006	0.055	3.2
Lee	Bealahaglashin Br.	12-Dec-07	0.027	< 0.006	0.086	5.8
Lee	Bealahaglashin Br.	21-Feb-08	0.019	0.009	0.078	9.1
Lee	Inniscarra	21-Feb-08	0.029	0.017	0.069	13.8

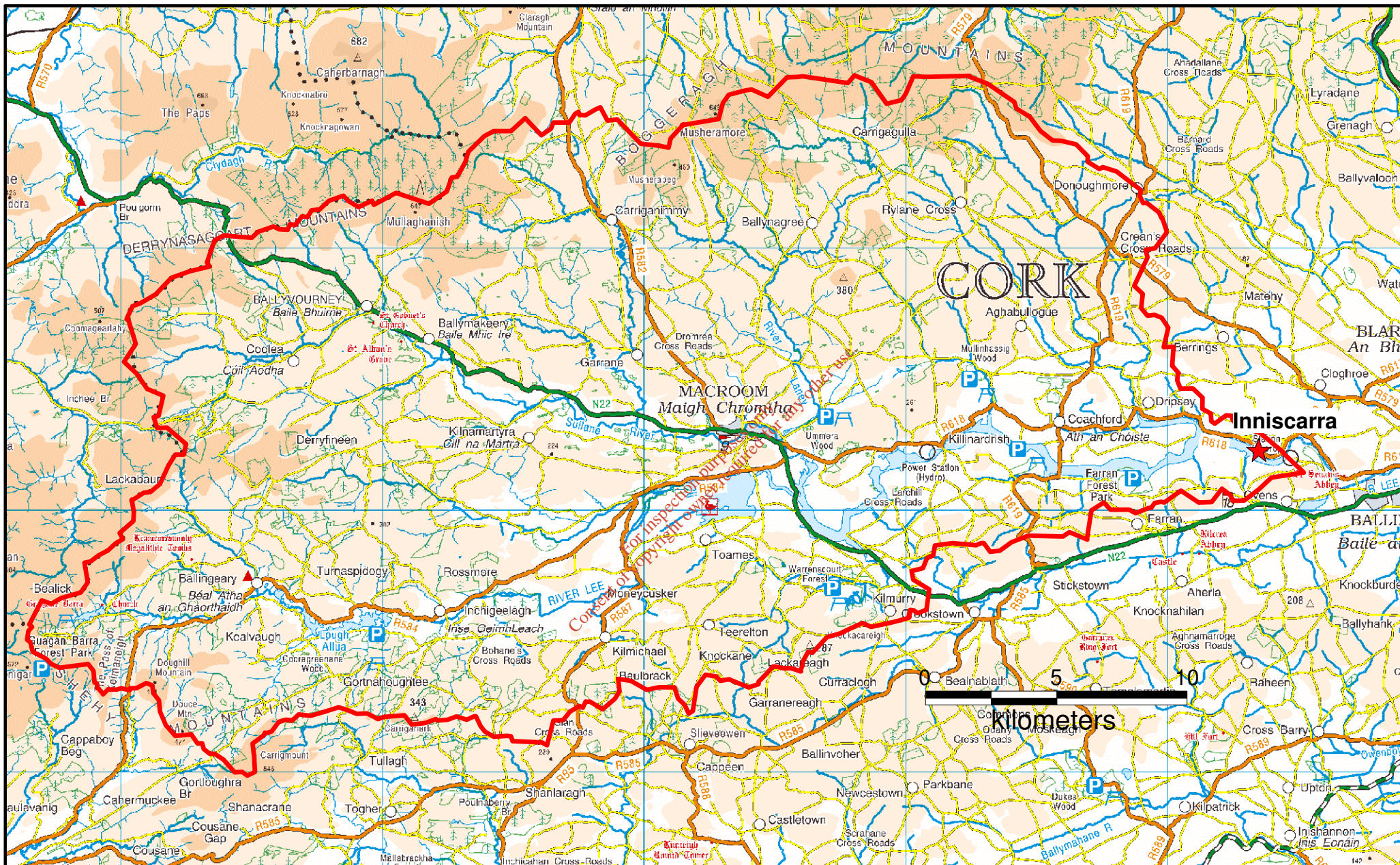
Lee	Inchigeelagh Br.	21-Feb-08	< 0.013	< 0.006	0.068	3.3
Lee	Rooves Beg	21-Feb-08	0.022	0.014	0.101	8.9
Lee	Dromcarra B	21-Feb-08	< 0.013	0.007	0.063	5.6
Lee	Co.Corp.Int	21-Feb-08	0.031	0.031	0.072	16.6
Lee	Bealahaglashin Br.	12-Mar-08	< 0.013	< 0.006	0.027	4.1
Lee	Foot Br. Castlemasters	12-Mar-08	< 0.013	< 0.006	0.026	2.8
Lee	Dromcarra B	12-Mar-08	< 0.013	< 0.006	0.05	3.5
Lee	Inchigeelagh Br.	12-Mar-08	< 0.013	< 0.006	0.034	2.8
Lee	Inniscarra	12-Mar-08	0.024	0.013	0.085	12
Lee	Rooves Beg	12-Mar-08	0.015	< 0.006	0.027	8.1
Lee	Co.Corp.Int	12-Mar-08	0.025	0.017	0.034	12.9
Lee	Inniscarra	10-Apr-08	0.022	< 0.006	< 0.026	3
Lee	Inchigeelagh Br.	10-Apr-08	< 0.013	< 0.006	< 0.026	
Lee	Bealahaglashin Br.	10-Apr-08	0.015	< 0.006	< 0.026	
Lee	Dromcarra B	10-Apr-08	0.013	< 0.006	< 0.026	
Lee	Co.Corp.Int	10-Apr-08	0.024	0.009	0.053	
Lee	Rooves Beg	10-Apr-08	0.017	< 0.006	< 0.026	
Lee	Rooves Beg	14-May-08	< 0.013	< 0.006	0.045	
Lee	Inniscarra	14-May-08	< 0.013	< 0.006	0.027	11.5
Lee	Co.Corp.Int	14-May-08	0.015	0.02	0.036	
Lee	Carrigadrohid	14-May-08	< 0.013	< 0.006	0.044	
Lee	Foot Br. Castlemasters	14-May-08	< 0.013	< 0.006	< 0.026	2.9
Lee	Dromcarra B	14-May-08	< 0.013	< 0.006	< 0.026	
Lee	Bealahaglashin Br.	14-May-08	< 0.013	< 0.006	0.083	
Lee	Inchigeelagh Br.	14-May-08	< 0.013	< 0.006	< 0.026	
Lee	Rooves Beg	11-Jun-08	0.045	< 0.006	0.031	
Lee	Carrigadrohid	11-Jun-08	0.036	< 0.006	0.093	
Lee	Inniscarra	11-Jun-08	0.175	0.008	0.027	9.9
Lee	Inchigeelagh Br.	11-Jun-08	< 0.013	< 0.006	0.068	
Lee	Dromcarra B	11-Jun-08	0.015	< 0.006	0.037	
Lee	Co.Corp.Int	11-Jun-08	0.112	0.036	0.055	
Lee	Bealahaglashin Br.	11-Jun-08	0.036	< 0.006	0.046	
Lee	Dromcarra B	09-Jul-08	0.015	< 0.006	< 0.026	
Lee	Inchigeelagh Br.	09-Jul-08	< 0.013	< 0.006	0.033	
Lee	Bealahaglashin Br.	09-Jul-08	0.019	< 0.006	0.034	
Lee	Carrigadrohid	09-Jul-08	0.027	0.013	0.063	
Lee	Inniscarra	09-Jul-08	0.05	0.018	0.059	10.1
Lee	Co.Corp.Int	09-Jul-08	0.047	0.035	0.04	
Lee	Rooves Beg	09-Jul-08	0.03	< 0.006	0.062	
Lee	Carrigadrohid	13-Aug-08	0.035	0.007	0.075	4.5
Lee	Rooves Beg	13-Aug-08	0.034	0.008	0.081	4.9
Lee	Bealahaglashin Br.	13-Aug-08	0.023	0.009	0.045	3.2
Lee	Inniscarra	13-Aug-08	0.049	0.021	0.107	9.2
Lee	Inchigeelagh Br.	13-Aug-08	0.016	0.006	0.034	< 2
Lee	Foot Br. Castlemasters	13-Aug-08	0.015	0.006	0.044	< 1.8
Lee	Dromcarra B	13-Aug-08	0.017	0.008	0.065	< 2
Lee	Co.Corp.Int	13-Aug-08	0.051	0.04	0.095	12.2
Lee	Dromcarra B	10-Sep-08	0.014	0.007	0.031	
Lee	Rooves Beg	10-Sep-08	0.027	0.014	0.061	
Lee	Bealahaglashin Br.	10-Sep-08	0.024	0.009	0.073	
Lee	Co.Corp.Int	10-Sep-08	0.043	0.021	0.041	
Lee	Carrigadrohid	10-Sep-08	0.026	0.012	0.069	
Lee	Inniscarra	10-Sep-08	0.047	0.015	0.083	7.6
Lee	Inchigeelagh Br.	10-Sep-08	0.014	< 0.006	0.035	
Lee	Co.Corp.Int	08-Oct-08	0.039	0.028	< 0.026	
Lee	Rooves Beg	08-Oct-08	0.028	0.006	0.058	
Lee	Inch/sig Br	08-Oct-08	< 0.013	< 0.006	< 0.026	
Lee	Inchigeelagh Br.	08-Oct-08	< 0.013	< 0.006	0.064	
Lee	Foot Br. Castlemasters	08-Oct-08	< 0.013	< 0.006	0.06	< 1.8
Lee	Carrigadrohid	08-Oct-08	0.028	< 0.006	0.033	
Lee	Inniscarra	08-Oct-08	0.046	0.014	0.035	9.4
Lee	Bealahaglashin Br.	08-Oct-08	0.02	< 0.006	< 0.026	
Lee	Dromcarra B	08-Oct-08	< 0.013	< 0.006	< 0.026	
Lee	Inchigeelagh Br.	12-Nov-08	< 0.013	< 0.006	0.04	

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Lee	Carrigadrohid	12-Nov-08	0.017	0.025	0.056	
Lee	Dromcarra B	12-Nov-08	< 0.013	< 0.006	0.042	
Lee	Inniscarra	12-Nov-08	0.025	0.018	0.084	7
Lee	Rooves Beg	12-Nov-08	0.021	0.014	0.041	
Lee	Bealahaglashin Br.	12-Nov-08	0.015	< 0.006	0.028	
Lee	Co.Corp.Int	12-Nov-08	0.024	0.016	0.034	
Lee	Inchigeelagh Br.	10-Dec-08	< 0.013	0.006	0.047	
Lee	Rooves Beg	10-Dec-08	0.03	0.016	0.061	
Lee	Inniscarra	10-Dec-08	0.03	0.019	0.045	
Lee	Co.Corp.Int	10-Dec-08	0.031	0.025	0.056	
Lee	Dromcarra B	10-Dec-08	0.013	0.007	0.031	
Lee	Bealahaglashin Br.	10-Dec-08	0.099	0.009	0.027	
Lee	Carrigadrohid	10-Dec-08	0.024	0.013	0.049	
Lee	Inchigeelagh Br.	15-Jan-09	0.014	0.012	0.048	
Lee	Rooves Beg	15-Jan-09	0.029	0.021	0.072	
Lee	Co.Corp.Int	15-Jan-09	0.033	0.032	0.09	
Lee	Dromcarra B	15-Jan-09	< 0.013	0.01	0.034	
Lee	Inniscarra	15-Jan-09	0.027	0.021	0.069	7.6
Lee	Bealahaglashin Br.	15-Jan-09	0.021	0.013	0.051	
Lee	Foot Br. Castlemasters	15-Jan-09	< 0.013	0.01	0.042	2.3
Lee	Carrigadrohid	15-Jan-09	0.022	0.017	0.068	
Lee	Inchigeelagh Br.	11-Feb-09	< 0.013	< 0.006	0.026	
Lee	Rooves Beg	11-Feb-09	0.017	0.012	0.061	
Lee	Inniscarra	11-Feb-09				
Lee	Carrigadrohid	11-Feb-09	0.015	0.012	0.033	
Lee	Dromcarra B	11-Feb-09	< 0.013	0.007	0.008	
Lee	Bealahaglashin Br.	11-Feb-09	0.013	0.006	0.02	
Lee	Co.Corp.Int	11-Feb-09	0.035	0.028	0.035	
Lee	Inchigeelagh Br.	12-Mar-09	< 0.013	< 0.006	0.029	2
Lee	Co.Corp.Int	12-Mar-09	0.024	0.019	0.016	13.8
Lee	Carrigadrohid	12-Mar-09	0.019	0.007	0.056	4.2
Lee	Rooves Beg	12-Mar-09	0.023	0.008	0.039	5.6
Lee	Dromcarra B	12-Mar-09	< 0.013	< 0.006	0.006	2.7
Lee	Inniscarra	12-Mar-09	0.023	0.009	0.021	10.1
Lee	Bealahaglashin Br.	12-Mar-09	0.014	< 0.006	0.011	3.3
Lee	Inchigeelagh Br.	08-Apr-09	< 0.013	< 0.006	0.006	
Lee	Bealahaglashin Br.	08-Apr-09	0.013	< 0.006	0.032	
Lee	Dromcarra B	08-Apr-09	< 0.013	< 0.006	0.01	
Lee	Foot Br. Castlemasters	08-Apr-09	< 0.013	< 0.006	0.01	< 1.8
Lee	Co.Corp.Int	08-Apr-09	0.038	0.028	0.142	
Lee	Rooves Beg	08-Apr-09	0.02	0.007	0.015	
Lee	Carrigadrohid	08-Apr-09	0.019	< 0.006	0.011	
Lee	Inniscarra	08-Apr-09	0.046	0.021	0.093	11.3

Rep. No. 318/09

				Parameter	Nitrite	Molybdate P	Ammonium	Nitrate
					NO2	P	NH4	NO3
				Max.	0.05	Varies	0.5	25
				Target	--	--	--	--
				Min.	--	--	--	--
Project	Project Re	Location	Sample Date	Comments	mg/l	mg/l	mg/l	mg/l
Lee		Inniscarra	09-Jan-07		0.032	0.021	0.103	10.8
Lee		Inniscarra	17-Jan-07		0.035	0.022	0.062	11.5
Lee		Inniscarra	08-Feb-07		0.059	0.14	0.314	
Lee		Inniscarra	15-Mar-07		0.03	0.021	0.058	
Lee		Inniscarra	18-Apr-07		0.024	0.007	0.035	11.2
Lee		Inniscarra	09-May-07		0.063	0.016	0.032	
Lee		Inniscarra	13-Jun-07		0.045	< 0.006	< 0.026	10.9
Lee		Inniscarra	11-Jul-07		0.113	0.008	0.04	7.3
Lee		Inniscarra	07-Aug-07		0.068	0.022	0.044	8.3
Lee		Inniscarra	20-Sep-07		0.088	< 0.006	0.036	
Lee		Inniscarra	10-Oct-07		0.049	0.01	0.036	6
Lee		Inniscarra	24-Oct-07	GR1016	0.028	0.015	< 0.026	7.3
Lee		Inniscarra	15-Nov-07		0.047	0.009	< 0.026	6.2
Lee		Inniscarra	12-Dec-07		0.038	0.02	0.07	10.1
Lee		Inniscarra	21-Feb-08		0.029	0.017	0.069	13.8
Lee		Inniscarra	12-Mar-08		0.024	0.013	0.085	12
Lee		Inniscarra	10-Apr-08		0.022	< 0.006	< 0.026	3
Lee		Inniscarra	14-May-08		< 0.013	< 0.006	0.027	11.5
Lee		Inniscarra	11-Jun-08		0.175	0.008	0.027	9.9
Lee		Inniscarra	09-Jul-08		0.05	0.018	0.059	10.1
Lee		Inniscarra	13-Aug-08		0.049	0.021	0.107	9.2
Lee		Inniscarra	10-Sep-08		0.047	0.015	0.083	7.6
Lee		Inniscarra	08-Oct-08		0.046	0.014	0.035	9.4
Lee		Inniscarra	12-Nov-08		0.025	0.018	0.084	7
Lee		Inniscarra	10-Dec-08		0.03	0.019	0.045	
Lee		Inniscarra	15-Jan-09		0.027	0.021	0.069	7.6
Lee		Inniscarra	11-Feb-09					
Lee		Inniscarra	12-Mar-09		0.023	0.009	0.021	10.1
Lee		Inniscarra	08-Apr-09		0.046	0.021	0.093	11.3



Inniscarra Water Supply, Catchment Outline

- ★ Abstraction Location
- Catchment Outline



1899 ~ 1999
A Century of Service

Cork County Council
Environmental Directorate
Inniscarra
Co. Cork
Phone: 021-4532700
Fax No. 021-4532777

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SURFACE WATER - Introduction

Scores should be inserted (where appropriate) into the blue boxes in Sections 1 to 10. The scores for each section will be automatically totalled (in the yellow box) and a summary of the scores for each section will appear on this sheet. The section scores will be totalled automatically on this summary sheet. The population of supply should be entered into the blue box below on this page and the overall Cryptosporidium Risk Assessment Score will be automatically calculated for the supply.

Cork Harbour and City Water Supply Scheme at Inniscarra Waterworks

22/02/2008

Surface Water Catchment Risk Scores	Section Score	Total Score
Section 1 - Animals within the Catchment	(10+5+0+2+4)	21
Section 2 - Agricultural Practices within the Catchment	(6+3+3+6+8)	26
Section 3 - Discharges to the Catchment/Water Source	(6+6+2)	14
Section 4 - Water Source Type	4	4
Section 5 - Catchment Inspections	(-3-3)	-6
Section 6 - Raw Water Intake Management for Abstractions	(-2-4)	-6
Total Surface Water Catchment Risk Score		53

Surface Water - Treatment and Supply Risk Score

Section 7 - Water Treatment Processes	-10	-10
Section 8a - Treatment Works Monitoring of Coagulation and Filtration	-5	-5
Section 8b - Treatment Works Monitoring of Coagulation and Filtration	-1	-1
Section 8c - Treatment Works Monitoring of Coagulation and Filtration	(-5-2+5-2)	-4
Section 8d - Treatment Works Monitoring of Coagulation and Filtration		
Section 8e - Treatment Works Monitoring of Coagulation and Filtration		
Section 8f - Treatment Works Monitoring of Coagulation and Filtration		
Section 9 - Rapid Gravity and Pressure Filter Works Performance	(0+6-2-2)	2
Section 10 - Treatment Works Operation	(-2+1-4+4-2+2+4)	3
Total Surface Water - Treatment and Supply Risk Score		-15

Surface Water Risk Assessment Score	38
Population	111,000
Population Weighting Factor (0.4 x log ₁₀ (population))	2.018129192
Final Weighted Risk Assessment Score	76.68890928
Water Supply Risk Classification	High Risk

21/04/2008

Since the assessment was made the sand filters were upgraded and the media depth is now above the minimum design level. Therefore the scoring for Section 9 is now -6 resulting in an overall score of 60.54 and a risk classification of Moderate.

The new assessment reads as follows:

Surface Water Catchment Risk Scores	Section Score	Total Score
Section 1 - Animals within the Catchment	(10+5+0+2+4)	21
Section 2 - Agricultural Practices within the Catchment	(6+3+3+6+8)	26
Section 3 - Discharges to the Catchment/Water Source	(6+6+2)	14
Section 4 - Water Source Type	4	4
Section 5 - Catchment Inspections	(-3-3)	-6
Section 6 - Raw Water Intake Management for Abstractions	(-2-4)	-6
Total Surface Water Catchment Risk Score		53

Surface Water - Treatment and Supply Risk Score

Section 7 - Water Treatment Processes	0	-10
Section 8a - Treatment Works Monitoring of Coagulation and Filtration	5	-5
Section 8b - Treatment Works Monitoring of Coagulation and Filtration	-1	-1
Section 8c - Treatment Works Monitoring of Coagulation and Filtration	(-5-2+5-2)	-4
Section 8d - Treatment Works Monitoring of Coagulation and Filtration		
Section 8e - Treatment Works Monitoring of Coagulation and Filtration		
Section 8f - Treatment Works Monitoring of Coagulation and Filtration		
Section 9 - Rapid Gravity and Pressure Filter Works Performance	(0-2-2-2)	-6
Section 10 - Treatment Works Operation	(-2+1-4+4-2+2+4)	3
Total Surface Water - Treatment and Supply Risk Score		-23

Surface Water Risk Assessment Score	30
Population	111,000
Population Weighting Factor (0.4 x log ₁₀ (population))	2.018129192
Final Weighted Risk Assessment Score	60.54387575
Water Supply Risk Classification	Moderate

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Cork County

Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	Schemes to start 2009 contd.	W/S	Est. Cost
Cork North			Cork South		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000	Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
Cork South			Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000	Shannagarry/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Cobh/ Midleton/ Carrigtwohill Water Supply Scheme	W	10,135,000	Youghal Sewerage Scheme	S	14,420,000
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000	Cork West		
Cork Water Strategy Study (G)	W	941,000	Ballydehob Sewerage Scheme	S	683,000
Kinsale Sewerage Scheme	S	20,000,000	Bantry Water Supply Scheme	W	14,935,000
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000	Clonakilty Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
		41,274,000	Courtmacsherry/ Timoleague Sewerage Scheme	S	2,472,000
Schemes to start 2007			Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
					164,629,000
Cork North			Serviced Land Initiative		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000	Cork North		
Cork West			Ballycough Water Supply Scheme	W	139,000
Skibbereen Sewerage Scheme	S	20,000,000	Ballyhooley Improvement Scheme	W/S	139,000
		25,150,000	Broghill-Rathgoggin Sewerage Scheme	S	406,000
Schemes to start 2008			Bweang Water Supply Scheme	W	115,000
Cork North			Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Mallow/ Ballyvinitter Regional Water Supply Scheme (H) W		8,662,000	Clondulane Sewage Treatment Plant	S	417,000
Mallow Sewerage Scheme (H)	S	3,408,000	Freemount Sewerage Scheme	S	150,000
Cork South			Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Ballincollig Sewerage Scheme (Nutrient Removal) (G)	S	948,000	Rathcormac Sewerage Scheme (incl. Water)	W/S	555,000
Ballingeary Sewerage Scheme	S	1,296,000	Spa Glen Sewerage Scheme	S	736,000
Bandon Sewerage Scheme Stage 2	S	14,729,000	Uplands Fermoy Sewerage Scheme (incl. Water)	W/S	1,174,000
City Environs (CASP) Strategic Study (G)	S	153,000	Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Cloghroe Sewerage Scheme (Upgrade)	S	683,000	Cork South		
Coachford Water Supply Scheme	W	1,318,000	Ballincollig Sewerage Scheme (Barry's Rd Foul and Storm Drainage) (G)	S	1,164,000
Garretstown Sewerage Scheme	S	2,153,000	Belgooley, Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Inniscarra Water Treatment Plant Extension Phase 1	W	2,678,000	Blamey Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Little Island Sewerage Scheme (G)	S	2,200,000	Carrigtwohill Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
Cork West			Castlematyr Wastewater Treatment Plant Extension	S	1,200,000
Bantry Sewerage Scheme	S	7,148,000	Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Dunmanway Sewerage Scheme	S	2,153,000	Dripsey Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000	Glounthane Sewerage Scheme (G)	S	1,576,000
Schull Water Supply Scheme	W	5,253,000	Innishannon Sewerage Scheme	S	277,000
		61,137,000	Innishannon Wastewater Treatment Plant	S	694,000
Schemes to start 2009			Kerrypike Sewerage Scheme	S	832,000
Cork North			Kerrypike Water Supply Scheme	W	416,000
Banteer/Dromahane Regional Water Supply Scheme	W	1,576,000	Killeagh Wastewater Treatment Plant Extension	S	1,200,000
Conna Regional Water Supply Scheme Extension	W	2,627,000	Killeagh Water Supply Scheme (includes Sewerage)	W/S	485,000
Cork NE Water Supply Scheme	W	4,326,000	Killeens Sewerage Scheme	S	420,000
Cork NW Regional Water Supply Scheme	W	6,046,000	Kinagleary Sewerage Scheme	S	694,000
Millstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000	Midleton Wastewater Treatment Plant Extension	S	4,050,000

Cork County contd.

Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost	Schemes to Advance through Planning cond.	W/S	Est. Cost
Cork South contd.			Cork South		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000	Carrigtwohill Sewerage Scheme (G)	S	20,000,000
North Cobh Sewerage Scheme (G)	S	3,193,000	Cork Sludge Management (G)	S	14,420,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Rochestown Water Supply Scheme	W	2,700,000	Inniscarra Water Treatment Plant (Sludge Treatment)(G)W		5,356,000
Saleen Sewerage Scheme	S	1,051,000	Macroom Sewerage Scheme	S	5,150,000
Youghal Water Supply Scheme	W	2,300,000	Minane Bridge Water Supply Scheme	W	1,421,000
Cork West			Cork West		
Castletownshend Sewerage Scheme	S	1,576,000	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
		50,797,000	Cape Clear Water Supply Scheme	W	1,679,000
Rural Towns & Villages Initiative			Rural Towns & Villages Initiative		
Cork North			Cork North		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Castletownbere Regional Water Supply Scheme	W	8,405,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000	Glengarriff Sewerage Scheme	S	2,500,000
			Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
			Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
					95,646,000
Cork South			Cork South		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000	Water Conservation Allocation		12,206,000
			Asset Management Study		300,000
Cork West			Cork West		
Ballylicky Sewerage Scheme	S	2,158,000	South Western River Basin District (WFD) Project¹		9,400,000
Baltimore Sewerage Scheme	S	3,362,000			
Castletownbere Sewerage Scheme	S	3,202,000			
Schull Sewerage Scheme	S	3,523,000			
		24,950,000	Programme Total		485,489,000
Schemes to Advance through Planning					
Cork North					
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000			
Mitchelstown Sewerage Scheme	S	3,000,000			
Newmarket Sewerage Scheme	S	3,152,000			

¹ This project is being led by Cork County Council on behalf of other authorities in the River Basin District

(H) Refers to a Hub as designated in the National Spatial Strategy

(G) Refers to a Gateway as designated in the National Spatial Strategy

28th November 2007

Mr. Noel O'Keeffe
Senior Engineer,
Cork County Council,
County Hall,
Co. Cork.

RE: Approval of Serviced Land Initiative Schemes in Cork

A Chara,

I am directed by Mr. John Gormley T.D., Minister for the Environment, Heritage and Local Government, to convey approval to ten Serviced Land Initiative schemes applied for by Cork County Council. Attached is a schedule with the approved schemes and the approved funding for each.

The schemes in question are Cloughduv Water and Sewerage, Crookstown Water and Sewerage, Dunkettle, Glenville and Kinsale Water Supply Schemes and Bandon, Coachford and Crossbarry Sewerage Schemes. This approval is subject to the Council submitting quarterly reports giving the up to date position on each scheme as required under all Serviced Land Initiative schemes.

Mise le meas

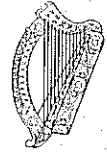
Anthony O'Grady,
Water Services Section,
Environment Infrastructure and Services Division.

<i>Schemes</i>	<i>Description of Works</i>	<u>Scheme Costs</u> €000	<u>No. Housing</u> Units
Water Supply			
Cloghduv*	New borehole source, reservoir and associated mains	1,650	456
Crookstown*	New borehole source, reservoir and associated mains	1,263	532
Dunkettle	Upgrading of mains	255	1,830
Glenville	New borehole source, reservoir, pumping station and associated mains	849	350
Kinsale	Upgrading / extension of existing supply network, reservoir, pumping station	2,225	1,950
Wastewater Schemes			
Bandon	New pumping station, associated sewers and pumps	3,113	1,196
Cloghduv*	New wastewater treatment plant, pumping station and sewers	1,480	
Coachford	New wastewater treatment plant and associated works	1,447	336
Crookstown*	New wastewater treatment plant and associated works	2,400	
Crossbarry	New wastewater treatment plant, sewers and pumping station	1,707	360
	Totals	€ 16,389	7,010

* The Cloghduv and Crookstown Water and Sewerage Schemes will develop the same lands.



Comhshaol, Oidhreacht agus Rialtas Áitiúil
Environment, Heritage and Local Government



CO. MANAGERS OFFICE
RECEIVED
21 APR 2009
COUNTY HALL, CORK 7

April 2009

Circular L3/09

Water Services Investment Programme

Serviced Land Initiative

PROJECT OFFICE
20 MAY 2009
CORK COUNTY COUNCIL

1. Since 1997 the Water Services Investment Programme has helped increase the supply of housing by supporting new residential development through the Serviced Land Initiative (SLI). In light of developments in the economy at large, and in the housing market in particular during 2008, the continued operation of this Initiative has been under review.
2. In some areas of the country there is, at present, an oversupply of housing, with many recently completed dwellings lying unsold. In this context the SLI is of questionable continuing benefit to the housing market at this stage and is being withdrawn.
3. With immediate effect all existing approvals, for which contracts have not been signed or letters of intent have issued, are being withdrawn. Schemes already commenced may continue to completion in line with procedures outlined in Circular L1/07 provided all work is scheduled for substantial completion by end 2010. No payments will be made beyond 31 December 2011.
4. Where multi-phase projects (generally costing more than €5m) are partially completed, water services authorities should write to the Department (by Friday, 29 May 2009 at the latest) outlining the progress made to date, the scale of works to be completed, the expected timeframe to completion and the case, if any, for allowing the remainder of the scheme to proceed. In

Department of Environment, Heritage and Local Government
Block 1, Floor 2, Irish Life Buildings, Lower Abbey Street, Dublin 1
Tel: 353 1 888 2000 LoCall: 1890 20 20 21 Fax: 353 1 888 2687 Web: www.environ.ie



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this context the authority should address the criteria set out in paragraph 5 immediately below.

5. Where a water services authority is of the opinion that the continuation of an approved scheme for which contracts have not been signed is necessary for the proper development of the area, it is open to that authority to make a case for the scheme. Any case being put to the Department should address, but not be limited to, the following:
- the volume of unsold new housing in the area to be served by the proposed scheme;
 - the basis on which the water services authority believes that there is a continuing requirement for further housing to be built;
 - whether specific developers/contractors have entered formal agreements with the water services authority to meet the 60% local share of the cost of the proposal.

Any such case received by the Department by Friday, 29 May 2009 will be considered on its merits.

6. Water services authorities are required to complete the **Appendix** to this circular in respect of all approved SLI schemes for which they are responsible, irrespective of the scheme status (except schemes where final accounts have been approved by the Department). This Appendix should be returned to the Department by Friday, 29 May 2009. Where a water services authority does not submit the necessary return by the due date the Department will not, under any circumstances, accept liability for any costs incurred on schemes commenced by that authority.
7. The Department will not accept any new applications for SLI schemes but those applications presently under examination in the Department will be finalised based on the criteria set out in paragraph 5 above. Details of those schemes should be included in the **Appendix** to this circular.

8. This Circular should be brought to the attention of all administrative and engineering personnel involved in water services projects. Enquiries may be addressed to Mr. Tom Walsh, Tel: 01-8882168, e-mail: tom_walsh@environ.ie.

Maria Graham

Maria Graham
Principal Officer
Water Services Section

To: County and City Managers
Directors of Services (Water Services Infrastructure)
Directors of Services (Finance)

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Comhairle Contae Chorcaí

Cork County Council

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Maria Graham
Water Services Section,
Dept of Environment, Heritage
& Local Government
Floor 2, Block 1
Irish Life Centre
Lower Abbey Street
Dublin 1

29 May 2009

Re: Circular L3/09

Dear Maria,

I refer to your Circular L3/09 in relation to the above wherein you advised that with immediate effect all existing approvals, for which contracts have not been signed or letters of intent issued, are being withdrawn.

In response to same, I now enclose herewith a list (appendix 1) of schemes which this authority is seeking approval to continue to progress as SLI's funded schemes under the WSIP. We also attach appendix 2 which outline the justification for retaining these schemes. The projects listed include:

- Schemes completed and already submitted to the DEHLG for approval as SLI's
- Schemes currently at construction
- Schemes where there are agreements in place with developers to meet this authority's share of the cost

I also enclose the following in appendix 1:

- a list of schemes with statutory compliance issues which were to be delivered as SLI's but, having regard to your Circular L3/09, will now need to be progressed as publicly funded schemes under the WSIP.
- A list of the remaining SLI schemes withdrawn, which continue to be valid for the purposes of the proper development of the county, but again will need to be progressed under the publicly funded WSIP.

In terms of being in a position to progress the schemes, you might note that this authority has applied to the DEHLG for the following level of borrowing requirement under for the WSIP:

2009 €50.9m
2010 €14.0m
2011 €64.2m

In the absence of this level of borrowing facility, this authority is not in a position to fund the above programme.

This authority has also incurred considerable costs on those schemes which are now unapproved. An indication of the costs which Cork County Council will look to recoup as sunk costs is shown in column 7; page 4 & 5 Appendix 1. A detailed submission will be forwarded in due course.

Yours sincerely

Tim Lucey
Divisional Manager

Cc Anthony O'Grady DEHLG
Tadhg O'Connor DEHLG
Gerry Galvin DEHLG
Colm Keenan DEHLG

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APPENDIX 1

Initiatives	Serviced Land	Published Cost	Current Estimated Cost	Start Date or Expected Start Date	Completion Date or Expected Completion Date	Departmental Funding Drawn to Date	Balance for Drawdown	Expected Drawdown 2009				Expected Drawdown 2010	Expected Drawdown 2011
								Q1	Q2	Q3	Q4		
		€				€	€	€	€	€	€	€	
Schemes completed and already submitted to the DEHLG for approval													
Approved Schemes - Completed													
Ballinacollig Greenfields foul Sewer		63,487	108,511		Pre 2005	20,316	5,079			5,079			
Ballinacollig Water Supply Castle Road		190,461	208,717		pre 2005	60,948	15,327			15,327			
Ballyhooley Services Extension		139,000	139,000	2006	2007	43,200	10,800		10,800	Appl with DoE for remaining 20% since 16/4/08			
Ballyvinter Water scheme		234,902	234,902	Jul-03	End -06								
Ballyvinter Water Stage 2		145,300	145,300		Completed								
Bandon Waste Water Scheme		3,113,000	3,113,000	2007	2008	-	1,245,200		996,160		249,040		
Blarney Water Supply Station road		380,921	215,855		Pre 2005	69,074	17,268			17,268			
Bweeng Water		115,000	353,849	Oct-04	End - 08	-	Applied to DOEHLG for revised cost €353,849 in May 08						
Carrigaline Storm Drain		380,921	724,462		Pre 2005	121,895	30,474				30,474		
Carrigrohane Sewage Pumping Station		126,974	639,953		Pre 2005	40,632	10,158				10,158		
Enniskean Sewerage Scheme		438,500	438,500	2004	2005	140,320	35,080		35,080				
Fermoy Storm water		177,763	422,188	1998	1999	135,100							
Freemount Sewerage		150,000	442,095	May-07	Jan-08	142,095	34,615		34,615.18	Appl with DoE for remaining 20% since 16/2/09			
Glashaboy WSS Caherlag		76,184	124,000		Pre 2005	24,379	6,095				6,095		
Glounthane Sewerage Scheme		1,576,000	1,576,000	2006	2007	504,320	126,080				126,080		
Johnstown Close SS		437,202	437,202	2006	2007	139,904	34,976				34,976		
Kerrypike Sewage Disposal		832,000	2,000,000	2006	2008	360,000	9,000				9,000		
Kilbrittain Sewerage Scheme		561,000	561,000	2005	2006	112,200	112,200						
Killeagh Sewerage		485,000	569,600		Pre 2005	155,200	38,800		38,800	Appl with DoE for remaining 20%			
Mallow Sewage treatment plant Improvements		1,015,790	1,015,790		Pre 2006	-	406,316				406,316		
Mallow/Fermoy/Blarney STW - Stormwater Tanks Capacity Increase		10,092,800	10,092,800		2008	1,817,019	454,255				454,255		
Mitchelstown (Brigown Road) Services		132,100	Scheme completed but no record of department drawdown										
Mitchelstown Services Extension		190,461	407,707		Pre 2007	38,092	38,092				38,092		
Mogeely/Castlemartyr/Ladysbridge WSS 8262		2,566,000	2,784,802		2005	2,007	239,884		239,884	Appl with DoE for remaining 20% since 15/05/07			
Newmarket Sewerage Scheme Improvement		79,200	39,011	2005	2005	15,604	-						
North Cobh Sewers 0791		3,193,000	8,661,038	2007	2008	898,661	224,665		224,665				
Passage West Storm Drain		317,435	320,000		Pre 2005	101,579	25,395				25,395		
Sally's Cross Sewerage		105,700	332,628	Jun-06	Sep-07	133,051	-						
Unapproved Schemes - Completed													
Kilworth SS			800,000										
Mogeely WWTP			1,323,330										
Whitechurch SS			2,700,000										
Whitechurch WSS			1,121,917										
Schemes currently at construction													
Approved Schemes - At construction													
Ballyclough Water		139,000	139,000	2007	2010	-	55,600	In negotiations with landowner				55,600	
Blarney Water Supply Extension to Station Rd(reservoir)		416,000	2,685,000	2008	2009	-	166,400	Application for revised costs submitted					

APPENDIX 1

Initiatives	Serviced Land	Published Cost	Current Estimated Cost	Start Date or Expected Start Date	Completion Date or Expected Completion Date	Departmental Funding Drawn to Date	Balance for Drawdown	Expected Drawdown 2009				Expected Drawdown 2010	Expected Drawdown 2011
								Q1	Q2	Q3	Q4		
		€				€	€	€	€	€	€	€	
Broghill Rathgoggin Sewerage Scheme		406,000	406,000	Aug-07	Aug-09	77,219	85,181			85,181			
Churchtown Water/ Sewerage		543,000	543,000	2005	End 09	168,660	48,540			42,165.12			
Clondulane Sewage Treatment Plant		417,000	535,000	Mar-07	Dec-07	129,600	84,400			84,400			
Cloughduv SS		1,480,000	1,480,000	2008	2009	296,067	118,427		177,641	118,427			
Cloughduv WSS		1,650,000	1,320,000	2008	2009	527,962	131,900			131,900			
Dripsey Water		1,112,000	2,000,000	2008	2010	-	987,888		493,944		493,944		
Killeagh WWTP ext		1,200,000	1,506,000	2008	2009	-	84,092		336,081	84,092			
Killeens Sewerage Scheme		420,000	831,000	2008	2009	-	212,300		169,600	42,400	Application for revised costs submitted		
Kilnagleary Sewerage		694,000	694,000	2008	2009	-	277,600			277,600			
Rathormac Services Extension		555,000	2,502,400	2008	2009	-	1,000,960		500,480	300,288	200,192		
Rochestown WSS		2,700,000	2,700,000	2007	2010	540,000	540,000					540,000	
Spa Glen sewerage scheme		736,000	736,000	2008	2009	-	279,981		223,985	55,996			
Watergrasshill Water and Sewerage		4,151,000	4,151,000	2008	2009	-	1,660,400		1,328,320	332,080			
Schemes where there are agreements in place with developers													
Approved Schemes - not at construction - to be retained													
Coachford SS		1,447,000	3,000,000										
Crookstown water		1,263,000	1,200,000										
Crookstown WWTP		2,400,000	2,400,000										
Midleton WWTP extension		4,050,000	2,288,000										
Unapproved Schemes - not at construction - to be retained													
Courtbrack WSS			1,017,043										
Courtbrack WWTP			885,905										
Dungourney SS			1,600,000										
Knockraha WWTP and Network			2,808,000										
Schemes withdrawn as SLIs													
Approved Schemes - not at construction - not to be retained as SLIs													
				Statutory Element	Future Developemnt		Expenditure to date						
Ballincollig, Barry's Rd Foul and Storm Drainage		1,164,000	3,400,000		X		213,412						
Belgooley Water And Sewerage		2,913,000	2,294,773	X	X		316,460						
Carrigtwohill Sewage Treatment and Storm Drain		7,632,000	10,000,000	X	X		300,000						
Castlemartyr Wastewater Treatment Plant extension		1,200,000	3,335,000		X		139,000						
Castletownshend Sewerage Scheme		1,576,000	4,000,000	X	X		74,882						
Crossbarry SS		1,707,000	1,707,000		X		18,000						
Dripsey Sewerage		788,257	788,257	X	X		31,634						
Dunkettle upgrading of mains		255,000	255,000		X		-						
Glenville WSS		849,000	1,777,000	X	X		341,261						
Innishannon Sewerage		277,000			X		-						
Innishannon Sewerage Treatment Plant		694,000	1,647,141	X	X		261,332						
Kerrypike Water Supply Scheme		416,000	440,000		X		55,405						

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APPENDIX 1

Initiatives	Serviced Land	Published Cost	Current Estimated Cost	Start Date or Expected Start Date	Completion Date or Expected Completion Date	Departmental Funding Drawn to Date	Balance for Drawdown	Expected Drawdown 2009				Expected Drawdown 2010	Expected Drawdown 2011
								Q1	Q2	Q3	Q4		
		€				€	€	€	€	€	€	€	
Killeagh Water		444,000	777,000	X			268,026						
Kinsale Water Supply		2,225,000	2,225,000		X		-						
Pike Road Water and sewerage schemes		2,080,000	2,080,000		X		433,119						
Riverstick SS			1,605,832	X	X		-						
Riverstick WSS		525,000	300,000	X			-						
Saleen SS		1,051,000	1,588,000	X			263,983						
Uplands Fermoy Servicing of Lands		1,174,000	1,174,000		X		7,196						
Youghal WSS		2,300,000	23,000	X	X		137,771						
<i>Kildorrery Storm Water Drainage</i>		<i>132,100</i>	<i>Abandoned</i>				-						
<i>Kinsale Water Supply -Commoge</i>		<i>88,400</i>	<i>Previously withdrawn</i>				-						
<i>Shanballymore Sewerage</i>		<i>264,100</i>	<i>Progressed under Small Schemes</i>				-						
<i>Watergrasshill Effluent Treatment Plant</i>		<i>126,974</i>	<i>Included above</i>				-						
Unapproved Schemes - not at construction - not to be retained as SLIs				Statutory Element	Future Developemnt		Expenditure to date						
Aherla WSS					X		56,149						
Aherla WWTP					X		-						
Ballinadee SS					X		154,294						
Ballydehob Sewerage Scheme - Network and WWTP					X		-						
Ballyellis Water Treatment Plant					X		-						
Ballymacoda SS					X		8,902						
Berrings WSS					X		-						
Berrings WWTP					X		-						
Blarney Stoneview (Ext to Station Rd, Phase 2)					X		-						
Carrignavar WSS					X		51,090						
Carrignavar WWPT					X		30,283						
Cloyne WWTP				X	X		36,055						
Drinagh WSS				X	X		15,700						
Glenville WWTP				X			267,086						
Grenagh WWTP					X		-						
Kilumney SS - Eastern Catchment Network and WWTP Upgrade					X		-						
Ring to Clonakilty sewer					X		-						

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Cork County

Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	Schemes to start 2009 contd.	W/S	Est. Cost
Cork North			Cork South		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000	Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
Cork South			Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000	Shannagarry/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Cobh/ Midleton/ Carrigtwohill Water Supply Scheme	W	10,135,000	Youghal Sewerage Scheme	S	14,420,000
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000	Cork West		
Cork Water Strategy Study (G)	W	941,000	Ballydehob Sewerage Scheme	S	683,000
Kinsale Sewerage Scheme	S	20,000,000	Bantry Water Supply Scheme	W	14,935,000
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000	Clonakilty Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
		41,274,000	Courtmacsherry/ Timoleague Sewerage Scheme	S	2,472,000
Schemes to start 2007			Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
					164,629,000
Cork North			Serviced Land Initiative		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000	Cork North		
Cork West			Ballycough Water Supply Scheme	W	139,000
Skibbereen Sewerage Scheme	S	20,000,000	Ballyhooley Improvement Scheme	W/S	139,000
		25,150,000	Broghill-Rathgoggin Sewerage Scheme	S	406,000
Schemes to start 2008			Bweeng Water Supply Scheme	W	115,000
Cork North			Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Mallow/ Ballyvinner Regional Water Supply Scheme (H) W		8,662,000	Clondulane Sewage Treatment Plant	S	417,000
Mallow Sewerage Scheme (H)	S	3,408,000	Freemount Sewerage Scheme	S	150,000
Cork South			Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Ballincollig Sewerage Scheme (Nutrient Removal) (G)	S	948,000	Rathcormac Sewerage Scheme (incl. Water)	W/S	555,000
Ballingeary Sewerage Scheme	S	1,296,000	Spa Glen Sewerage Scheme	S	736,000
Bandon Sewerage Scheme Stage 2	S	14,729,000	Uplands Fermoy Sewerage Scheme (incl. Water)	W/S	1,174,000
City Environs (CASP) Strategic Study (G)	S	153,000	Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Cloghroe Sewerage Scheme (Upgrade)	S	683,000	Cork South		
Coachford Water Supply Scheme	W	1,318,000	Ballincollig Sewerage Scheme (Barry's Rd Foul and Storm Drainage) (G)	S	1,164,000
Garretstown Sewerage Scheme	S	2,153,000	Belgooley, Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Inniscarra Water Treatment Plant Extension Phase 1	W	2,678,000	Blarney Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Little Island Sewerage Scheme (G)	S	2,200,000	Carrigtwohill Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
Cork West			Castlematyr Wastewater Treatment Plant Extension	S	1,200,000
Bantry Sewerage Scheme	S	7,148,000	Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Dunmanway Sewerage Scheme	S	2,153,000	Dripsey Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000	Glounthane Sewerage Scheme (G)	S	1,576,000
Schull Water Supply Scheme	W	5,253,000	Innishannon Sewerage Scheme	S	277,000
		61,137,000	Innishannon Wastewater Treatment Plant	S	694,000
Schemes to start 2009			Kerrypike Sewerage Scheme	S	832,000
Cork North			Kerrypike Water Supply Scheme	W	416,000
Banteer/Dromahane Regional Water Supply Scheme	W	1,576,000	Killeagh Wastewater Treatment Plant Extension	S	1,200,000
Conna Regional Water Supply Scheme Extension	W	2,627,000	Killeagh Water Supply Scheme (includes Sewerage)	W/S	485,000
Cork NE Water Supply Scheme	W	4,326,000	Killeens Sewerage Scheme	S	420,000
Cork NW Regional Water Supply Scheme	W	6,046,000	Kinagleary Sewerage Scheme	S	694,000
Millstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000	Midleton Wastewater Treatment Plant Extension	S	4,050,000

Cork County contd.

Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost	Schemes to Advance through Planning cond.	W/S	Est. Cost
Cork South contd.			Cork South		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000	Carrigtwohill Sewerage Scheme (G)	S	20,000,000
North Cobh Sewerage Scheme (G)	S	3,193,000	Cork Sludge Management (G)	S	14,420,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Rochestown Water Supply Scheme	W	2,700,000	Inniscarra Water Treatment Plant (Sludge Treatment)(G)W		5,356,000
Saleen Sewerage Scheme	S	1,051,000	Macroom Sewerage Scheme	S	5,150,000
Youghal Water Supply Scheme	W	2,300,000	Minane Bridge Water Supply Scheme	W	1,421,000
Cork West			Cork West		
Castletownshend Sewerage Scheme	S	1,576,000	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
		50,797,000	Cape Clear Water Supply Scheme	W	1,679,000
Rural Towns & Villages Initiative			Rural Towns & Villages Initiative		
Cork North			Cork North		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Castletownbere Regional Water Supply Scheme	W	8,405,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000	Glengarriff Sewerage Scheme	S	2,500,000
			Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
			Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
					95,646,000
Cork South			Water Conservation Allocation		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000	Asset Management Study		300,000
Cork West			South Western River Basin District (WFD) Project¹		
Ballylicky Sewerage Scheme	S	2,158,000			9,400,000
Baltimore Sewerage Scheme	S	3,162,000			
Castletownbere Sewerage Scheme	S	3,202,000			
Schull Sewerage Scheme	S	3,523,000			
		24,950,000	Programme Total		485,489,000
Schemes to Advance through Planning					
Cork North					
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000			
Mitchelstown Sewerage Scheme	S	3,000,000			
Newmarket Sewerage Scheme	S	3,152,000			

¹ This project is being led by Cork County Council on behalf of other authorities in the River Basin District

(H) Refers to a Hub as designated in the National Spatial Strategy

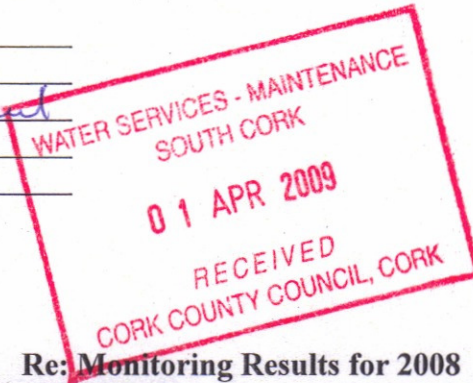
(G) Refers to a Gateway as designated in the National Spatial Strategy

Comhairle Contae Chorcaí Cork County Council

Environmental Directorate,
Inniscarra, Co. Cork.
Tel. No. (021) 4532700 • Fax No. (021) 4532727
Web: www.corkcoco.ie
An Stiúirthóireacht Comhshaoil,
Inis Cara, Co. Corcaigh.
Fón: (021) 4532700 • Faics: (021) 4532727
Suíomh Gréasáin: www.corkcoco.ie



N O' Mahony
825
Cork Co. Council
Imishmore
Ballincollig
Co. Cork



18th March 2009

Re: **Monitoring Results for 2008**

Dear Sir/Madam,

Enclosed are the licensed discharge wastewater monitoring results for your facility for 2008. Please note that Total Nitrogen and Total Phosphorus tests were subcontracted to an outside laboratory since early October 2008.

Measurements of uncertainty values for the test are as follows:

Test	Range mg/l	Estimated Uncertainty
TN	100	+ 3.8 mg/l
TP	0.5	+ 0.04 mg/l
TP	5 mg/l	+ 0.44 mg/l
TP	10 mg/l	+ 0.87 mg/l

Please accept my apologies for the late arrival of results but due to circumstances outside my control. I was unable to issue results in February.

If you have any queries in relation to the results, please do not hesitate to contact me.

Yours sincerely,

V. Hannon

Valerie Hannon,
A/Senior Executive Scientist,
Wastewater Laboratory.

Direct Dial: 021 – 4532707
Fax: 021 – 4532777
Email: valerie.hannon@corkcoco.ie





Laboratory Test Report

Cork County Council

Waste Water Laboratory

Inniscarra, Co. Cork

Industry Name: Coachford Treatment Plant
Address: Coachford, Co. Cork

Industry Code No. 351
Report Ref No. 19-03-09-117
Issued to No. Mahony
SEE

Licence No. Type S

Licence Limit	Volume m3	pH	B.O.D. mg/l	C.O.D. mg/l	Sus Solids mg/l	TP-P mg/l	Code	Comments
	99999	12.99 3.99	999	9999	999	99		
Date								
~ 07/02/08		6.9	29.05	60	15	0.80	GS059 G	NH3-N=5.1mg/l O-PO4=0.43
19/06/08		7.3	127	336	69	4.5	GS576 G	OPO4-P=2.74mg/L
10/07/08			40	133	63	2.3	GS631 G	TN-N=16.9mg/L
03/09/08		7.3	83	191	103	2.3	GS846 G	NH3-N=12.9mg/L
09/10/08			1.3	324	46		GS1035 G	
16/10/08		7.0	56.8	99	33		GS1091 G	NH3-N=14.3mg/l, OPO-4=1.
% Compl. Average	*** **** **	100 7.13	100 56.19	100 190.50	100 54.83	100 2.48	*** **** **	*** **** **

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The samples are received at the Laboratory on the day of sampling. The above test methods are based on Standard Methods for the examination of Water and Waste Water, 21st Edition 2005, APHA, AWWA, WEF.

C = Composite Sample, G = Grab Sample.

The compliance value may be varied on items marked with an * by the application of uncertainty of measurement values on reverse Page Chemical Procedure Numbers(CP No.) for INAB accredited tests are as follows:

- CP NO. 1 = B.O.D.
- CP NO. 3 = S.S.
- CP NO. 20 = TP-P
- CP NO. 5 = pH
- CP NO. 6 = C.O.D.
- ~~CP NO. 7 = Cl~~
- CP NO. 22 = Ammonia(KONELAB)
- CP NO. 23 = OPO4-P(KONELAB)
- CP NO. 24 = Chloride (KONELAB)
- CP NO. 25 = Sulphate(KONELAB)

This report relates only to the samples listed above. This report shall not be reproduced except in full and only with the approval of the testing laboratory. Cork County Council is not accredited by INAB for tests marked with \$. Kg loadings based on flows as supplied by the company. ~ indicates results that have been edited.

Reported by: V. Hannon Date: 19/3/09

Ms. V. Hannon Technical Manager
 Deputy Technical Manager

CTR 001

Issue No 36

^{VH}
~~November 2007~~ October 2008

Wastewater Laboratory Cork County Council- Test Report Addendum

- a. Sample date reported in column 1 on this report is the date of collection of the sample from the industry name and address as outlined at the top of the report.
- b. Cork County Council wastewater laboratory are not accredited for sample collection.
- c. Data reported in (d) below is defined in section 5.10.3 (c) in wastewater laboratory quality manual.

d. Table of Uncertainty Of Measurement – Estimate Of Values For Accredited Tests

Chemical Procedure No.	range	Test Name	Estimated Uncertainty	Units
CP No. 1	1 - 8 mg/l	Biochemical Oxygen Demand (BOD)	± 0.30	mg/l
CP No. 1	9 - 70 mg/l	Biochemical Oxygen Demand (BOD)	± 3.2	mg/l
CP No. 1	71 - 700 mg/l	Biochemical Oxygen Demand (BOD)	± 40	mg/l
CP No. 3	35 mg/l	Suspended Solids (SS)	± 6.4	mg/l
CP No. 3	200 - 400mg/l	Suspended Solids (SS)	± 41.6	mg/l
CP No. 3	700 - 1000mg/l	Suspended Solids (SS)	± 80.0	mg/l
CP No. 5	2 - 12	pH	± 0.12	pH Units
CP No. 6	< 6 mg/l	Chemical Oxygen Demand (COD LR)	± 5.6	mg/l
CP No. 6	15 - 75 mg/l	Chemical Oxygen Demand (COD LR)	± 10.6	mg/l
CP No. 6	100 - 135 mg/l	Chemical Oxygen Demand (COD LR)	± 17.4	mg/l
CP No. 6	120 - 1500mg/l	Chemical Oxygen Demand (COD) High Range	± 26.8	mg/l
CP No. 20	0.2 - 2.5 mg/l	Total Phosphorus (TR-P)	± 0.22	mg/l
CP No. 22	0.1 - 0.9 mg/l	Ammonia (Konelab)	± 0.04	mg/l
CP No. 22	1.0 - 2.0 mg/l	Ammonia (Konelab)	± 0.10	mg/l
CP No. 22	2 - 10 mg/l	Ammonia (Konelab)	± 0.32	mg/l
CP No. 22	11 - 19 mg/l	Ammonia (Konelab)	± 0.72	mg/l
CP No. 22	20 - 25 mg/l	Ammonia (Konelab)	± 1.56	mg/l
CP No. 23	0.05 - 1.00 mg/l	Orthophosphate as P (Konelab)	± 0.04	mg/l
CP No. 24	25.00 - 99.00 mg/l	Chloride (Konelab)	± 3.04	mg/l
CP No. 24	100.00 - 200.00 mg/l	Chloride (Konelab)	± 11.16	mg/l
CP No. 25	30.00 - 199.00 mg/l	Sulphate (Konelab)	± 3.42	mg/l
CP No. 25	200.00 - 250.00 mg/l	Sulphate (Konelab)	± 8.70	mg/l

January 2009

The raw data used to evaluate the above estimations is stored in the Wastewater Laboratory, Cork County Council.

The method followed is located in the Uncertainty of Measurement file and in the Eurachem Guidelines for Quantifying Uncertainty in Analytical Measurement.

Cork County

Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	Schemes to start 2009 contd.	W/S	Est. Cost
Cork North			Cork South		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000	Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
Cork South			Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000	Shannagarry/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Cobh/ Midleton/ Carrigtwohill Water Supply Scheme	W	10,135,000	Youghal Sewerage Scheme	S	14,420,000
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000	Cork West		
Cork Water Strategy Study (G)	W	941,000	Ballydehob Sewerage Scheme	S	683,000
Kinsale Sewerage Scheme	S	20,000,000	Bantry Water Supply Scheme	W	14,935,000
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000	Clonakilty Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
		41,274,000	Courtmacsherry/ Timoleague Sewerage Scheme	S	2,472,000
Schemes to start 2007			Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
					164,629,000
Cork North			Serviced Land Initiative		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000	Cork North		
Cork West			Ballycough Water Supply Scheme	W	139,000
Skibbereen Sewerage Scheme	S	20,000,000	Ballyhooley Improvement Scheme	W/S	139,000
		25,150,000	Broghill-Rathgoggin Sewerage Scheme	S	406,000
Schemes to start 2008			Bweeng Water Supply Scheme	W	115,000
Cork North			Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Mallow/ Ballyvinter Regional Water Supply Scheme (H) W		8,662,000	Clondulane Sewage Treatment Plant	S	417,000
Mallow Sewerage Scheme (H)	S	3,408,000	Freemount Sewerage Scheme	S	150,000
Cork South			Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Ballincollig Sewerage Scheme (Nutrient Removal) (G)	S	948,000	Rathcormac Sewerage Scheme (incl. Water)	W/S	555,000
Ballingeary Sewerage Scheme	S	1,296,000	Spa Glen Sewerage Scheme	S	736,000
Bandon Sewerage Scheme Stage 2	S	14,729,000	Uplands Fermoy Sewerage Scheme (incl. Water)	W/S	1,174,000
City Environs (CASP) Strategic Study (G)	S	153,000	Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Cloghroe Sewerage Scheme (Upgrade)	S	683,000	Cork South		
Coachford Water Supply Scheme	W	1,318,000	Ballincollig Sewerage Scheme (Barry's Rd Foul and Storm Drainage) (G)	S	1,164,000
Garretstown Sewerage Scheme	S	2,153,000	Belgooley, Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Inniscarra Water Treatment Plant Extension Phase 1	W	2,678,000	Blarney Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Little Island Sewerage Scheme (G)	S	2,200,000	Carrigtwohill Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
Cork West			Castlematyr Wastewater Treatment Plant Extension	S	1,200,000
Bantry Sewerage Scheme	S	7,148,000	Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Dunmanway Sewerage Scheme	S	2,153,000	Dripsey Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000	Glounthane Sewerage Scheme (G)	S	1,576,000
Schull Water Supply Scheme	W	5,253,000	Innishannon Sewerage Scheme	S	277,000
		61,137,000	Innishannon Wastewater Treatment Plant	S	694,000
Schemes to start 2009			Kerrypike Sewerage Scheme	S	832,000
Cork North			Kerrypike Water Supply Scheme	W	416,000
Banteer/Dromahane Regional Water Supply Scheme	W	1,576,000	Killeagh Wastewater Treatment Plant Extension	S	1,200,000
Conna Regional Water Supply Scheme Extension	W	2,627,000	Killeagh Water Supply Scheme (includes Sewerage)	W/S	485,000
Cork NE Water Supply Scheme	W	4,326,000	Killeens Sewerage Scheme	S	420,000
Cork NW Regional Water Supply Scheme	W	6,046,000	Kinagleary Sewerage Scheme	S	694,000
Millstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000	Midleton Wastewater Treatment Plant Extension	S	4,050,000

Cork County contd.

Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost	Schemes to Advance through Planning cond.	W/S	Est. Cost
Cork South contd.			Cork South		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000	Carrigtwohill Sewerage Scheme (G)	S	20,000,000
North Cobh Sewerage Scheme (G)	S	3,193,000	Cork Sludge Management (G)	S	14,420,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Rochestown Water Supply Scheme	W	2,700,000	Inniscarra Water Treatment Plant (Sludge Treatment)(G)W		5,356,000
Saleen Sewerage Scheme	S	1,051,000	Macroom Sewerage Scheme	S	5,150,000
Youghal Water Supply Scheme	W	2,300,000	Minane Bridge Water Supply Scheme	W	1,421,000
Cork West			Cork West		
Castletownshend Sewerage Scheme	S	1,576,000	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
		50,797,000	Cape Clear Water Supply Scheme	W	1,679,000
Rural Towns & Villages Initiative			Rural Towns & Villages Initiative		
Cork North			Cork North		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Castletownbere Regional Water Supply Scheme	W	8,405,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000	Glengarriff Sewerage Scheme	S	2,500,000
			Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
			Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
					95,646,000
Cork South			Water Conservation Allocation		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000	Asset Management Study		300,000
Cork West			South Western River Basin District (WFD) Project¹		
Ballylicky Sewerage Scheme	S	2,158,000			9,400,000
Baltimore Sewerage Scheme	S	3,162,000			
Castletownbere Sewerage Scheme	S	3,202,000			
Schull Sewerage Scheme	S	3,523,000			
		24,950,000	Programme Total		485,489,000
Schemes to Advance through Planning					
Cork North					
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000			
Mitchelstown Sewerage Scheme	S	3,000,000			
Newmarket Sewerage Scheme	S	3,152,000			

¹ This project is being led by Cork County Council on behalf of other authorities in the River Basin District

(H) Refers to a Hub as designated in the National Spatial Strategy

(G) Refers to a Gateway as designated in the National Spatial Strategy

Agglomeration details

Leading Local Authority	Cork County Council
Co-Applicants	
Agglomeration	Coachford
Population Equivalent	990
Level of Treatment	Primary
Treatment plant address	Clontead Beg, Coachford.
Grid Ref (12 digits, 6E, 6N)	146003 / 073146
EPA Reference No:	

Contact details

Contact Name:	Patricia Power
Contact Address:	Area Operations South, Cork County Council, County Hall, Carrigrohane Road, Cork.
Contact Number:	021 4285 285
Contact Fax:	021 4276 327
Contact Email:	patricia.power@corkcoco.ie

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Table D.1(i)(a): EMISSIONS TO SURFACE/GROUND WATERS (Primary Discharge Point)

Discharge Point Code: SW-1

Local Authority Ref No:	SW01 - Coachford	
Source of Emission:	Treated Effluent	
Location:	Nadrid	
Grid Ref (12 digits, 6E, 6N)	145231 / 072297	
Name of Receiving waters:	River Lee	
Water Body:	River Water Body	
River Basin District	South Western RBD	
Designation of Receiving Waters:	Poor	
Flow Rate in Receiving Waters:	0	m ³ .sec ⁻¹ Dry Weather Flow
	2.7036	m ³ .sec ⁻¹ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	95%ile flow is taken from available South Western River Basin District data there are no figures available for DWF, it should be noted that Coachford discharges into a man-made lake. The flow at the lake is regulated by the ESB power station	

Emission Details:

(i) Volume emitted			
Normal/day	178 m ³	Maximum/day	535 m ³
Maximum rate/hour	22.29 m ³	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.00206 m ³ /sec		

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Table D.1(i)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of The Emission (Primary Discharge Point)

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
pH	pH	Grab	= 9	
Temperature	°C	Grab	= 25	
Electrical Conductivity (@ 25°C)	µS/cm	Grab	= 1000	
Suspended Solids	mg/l	Grab	= 250	44.5
Ammonia (as N)	mg/l	Grab	= 25	4.45
Biochemical Oxygen Demand	mg/l	Grab	= 210	37.38
Chemical Oxygen Demand	mg/l	Grab	= 460	81.88
Total Nitrogen (as N)	mg/l	Grab	= 50	8.9
Nitrite (as N)	mg/l	Grab	= 0	0
Nitrate (as N)	mg/l	Grab	= 0	0
Total Phosphorous (as P)	mg/l	Grab	= 12	2.136
OrthoPhosphate (as P)	mg/l	Grab	= 10	1.78
Sulphate (SO ₄)	mg/l	Grab	= 0	0
Phenols (Sum)	µg/l	Grab	= 0	0

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
 For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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Table D.1(i)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of The Emission (Primary Discharge Point)

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
Atrazine	µg/l	Grab	= 0	0
Dichloromethane	µg/l	Grab	= 0	0
Simazine	µg/l	Grab	= 0	0
Toluene	µg/l	Grab	= 0	0
Tributyltin	µg/l	Grab	= 0	0
Xylenes	µg/l	Grab	= 0	0
Arsenic	µg/l	Grab	= 0	0
Chromium	µg/l	Grab	= 0	0
Copper	µg/l	Grab	= 0	0
Cyanide	µg/l	Grab	= 0	0
Flouride	µg/l	Grab	= 0	0
Lead	µg/l	Grab	= 0	0
Nickel	µg/l	Grab	= 0	0
Zinc	µg/l	Grab	= 0	0
Boron	µg/l	Grab	= 0	0
Cadmium	µg/l	Grab	= 0	0
Mercury	µg/l	Grab	= 0	0
Selenium	µg/l	Grab	= 0	0
Barium	µg/l	Grab	= 0	0

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper

For Phenols: USEPA Method 604, AWWA Standard Method 6246, or equivalent.

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Table D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS (Storm Overflow)

Discharge Point Code: SW-2

Local Authority Ref No:	SW02 - Coachford	
Source of Emission:	Untreated effluent	
Location:	Clontead Beg	
Grid Ref (12 digits, 6E, 6N)	145955 / 073162	
Name of Receiving waters:	Not applicable	
Water Body:	River Water Body	
River Basin District	South Western RBD	
Designation of Receiving Waters:	Not applicable	
Flow Rate in Receiving Waters:	0	m ³ .sec ⁻¹ Dry Weather Flow
	0	m ³ .sec ⁻¹ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	The storm overflow discharges to a stream which discharges to the Dripsey River and ultimately discharges to the River Lee, there is no flow monitoring on this stream or on the discharge from the storm overflow.	

Emission Details:

(i) Volume emitted			
Normal/day	0 m ³	Maximum/day	0 m ³
Maximum rate/hour	0 m ³	Period of emission (avg)	0 min/hr 0 hr/day 0 day/yr
Dry Weather Flow	0 m ³ /sec		

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Table D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS (Storm Overflow)

Discharge Point Code: SW-3

Local Authority Ref No:	SW03 - Coachford
Source of Emission:	Untreated effluent
Location:	Clontead Beg
Grid Ref (12 digits, 6E, 6N)	145947 / 073165
Name of Receiving waters:	Not applicable
Water Body:	River Water Body
River Basin District	South Western RBD
Designation of Receiving Waters:	Not applicable
Flow Rate in Receiving Waters:	0 m ³ .sec ⁻¹ Dry Weather Flow 0 m ³ .sec ⁻¹ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	The storm overflow discharges to a stream which discharges to the Dripsey River and ultimately discharges to the River Lee, there is no flow monitoring on this stream or on the discharge from the storm overflow.

Emission Details:

(i) Volume emitted			
Normal/day	0 m ³	Maximum/day	0 m ³
Maximum rate/hour	0 m ³	Period of emission (avg)	0 min/hr 0 hr/day 0 day/yr
Dry Weather Flow	0 m ³ /sec		

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TABLE E.1(i): WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – Primary and Secondary Discharge Points

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m ³ /annum)
SW-1	365	64970

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TABLE E.1(ii): WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – Storm Water Overflows

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m ³ /annum)	Complies with Definition of Storm Water Overflow
SW-3	0	0	No
SW-2	0	0	No

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TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	146150 / 071797

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	28/01/09	02/04/09				
pH		= 7.2			Grab	2	Electrochemical
Temperature	= 0				Grab	0.5	Electrochemical
Electrical Conductivity (@ 25°C)		= 116			Grab	0.5	Electrochemical
Suspended Solids		< 2.5			Grab	0.5	Gravimetric
Ammonia (as N)		< 0.1			Grab	0.02	Colorimetric
Biochemical Oxygen Demand		< 1			Grab	0.06	Electrochemical
Chemical Oxygen Demand		< 21			Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0	ISE
Hardness (as CaCO ₃)	= 0				Grab	0	Titrimetric
Total Nitrogen (as N)		= 1.8			Grab	0.5	Digestion & Colorimetric
Nitrite (as N)		= 0.00502			Grab	0.013	Colorimetric
Nitrate (as N)		= 1.64			Grab	0.04	Colorimetric
Total Phosphorous (as P)		< 0.2			Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)		< 0.05	0.05		Grab	0.02	Colorimetric
Sulphate (SO ₄)		< 30			Grab	30	Turbidimetric
Phenols (Sum)		< 0.1			Grab	0.1	GC-MS2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper

For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	default of 01/01/09 and 0 used where results not available
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TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	146150 / 071797

Parameter	Results (µg/l)			Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	28/01/09	02/04/09			
Atrazine		< 0.01		Grab	0.96	HPLC
Dichloromethane		< 1		Grab	1	GC-MS1
Simazine		= 0.01		Grab	0.01	HPLC
Toluene		< 1		Grab	0.02	GC-MS1
Tributyltin	= 0			Grab	0.02	GC-MS1
Xylenes		< 1		Grab	1	GC-MS1
Arsenic		< 0.96		Grab	0.96	ICP-MS
Chromium		< 20	< 20	Grab	20	ICP-OES
Copper		< 20	< 20	Grab	20	ICP-OES
Cyanide		< 5		Grab	5	Colorimetric
Flouride		= 33		Grab	100	ISE
Lead		< 20	< 20	Grab	20	ICP-OES
Nickel		< 20	< 20	Grab	20	ICP-OES
Zinc		< 20	< 20	Grab	20	ICP-OES
Boron		< 20	< 20	Grab	20	ICP-OES
Cadmium		< 20	< 20	Grab	20	ICP-OES
Mercury		< 0.2		Grab	0.2	ICP-MS
Selenium		= 0.8		Grab	0.74	ICP-MS
Barium		= 62	< 20	Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn TBT testing not required
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TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	145242 / 072501

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	28/01/09	02/04/09				
pH		= 7.3			Grab	2	Electrochemical
Temperature	= 0				Grab	0.5	Electrochemical
Electrical Conductivity (@ 25°C)		= 114			Grab	0.5	Electrochemical
Suspended Solids		= 2.5			Grab	0.5	Gravimetric
Ammonia (as N)		< 0.1			Grab	0.02	Colorimetric
Biochemical Oxygen Demand		< 1			Grab	0.06	Electrochemical
Chemical Oxygen Demand		< 21			Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0	ISE
Hardness (as CaCO ₃)	= 0				Grab	0	Titimetric
Total Nitrogen (as N)		= 1.6			Grab	0.5	Digestion & Colorimetric
Nitrite (as N)		= 0.00478			Grab	0.013	Colorimetric
Nitrate (as N)		= 1.4			Grab	0.5	Colorimetric
Total Phosphorous (as P)		< 0.2			Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)		< 0.05	0.05		Grab	0.02	Colorimetric
Sulphate (SO ₄)		< 30			Grab	30	Turbidimetric
Phenols (Sum)		< 0.1			Grab	0.1	GC-MS2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper

For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	default of 01/01/09 and 0 where results are not available
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TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	145242 / 072501

Parameter	Results (µg/l)			Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	28/01/09	02/04/09			
Atrazine		< 0.01		Grab	0.96	HPLC
Dichloromethane		< 1		Grab	1	GC-MS1
Simazine		< 0.01		Grab	0.01	HPLC
Toluene		< 1		Grab	0.02	GC-MS1
Tributyltin	= 0			Grab	0.02	GC-MS1
Xylenes		< 1		Grab	1	GC-MS1
Arsenic		< 0.96		Grab	0.96	ICP-MS
Chromium		< 20	< 20	Grab	20	ICP-OES
Copper		< 20	< 20	Grab	20	ICP-OES
Cyanide		< 5		Grab	5	Colorimetric
Flouride		= 38		Grab	100	ISE
Lead		< 20	< 20	Grab	20	ICP-OES
Nickel		< 20	< 20	Grab	20	ICP-OES
Zinc		< 20	< 20	Grab	20	ICP-OES
Boron		< 20	< 20	Grab	20	ICP-OES
Cadmium		< 20	< 20	Grab	20	ICP-OES
Mercury		< 0.2		Grab	0.2	ICP-MS
Selenium		= 1		Grab	0.74	ICP-MS
Barium		= 62	= 75.7	Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn TBT testing not required
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Annex 2: Check List For Regulation 16 Compliance

Regulation 16 of the waste water discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007) sets out the information which must, in all cases, accompany a discharge licence application. In order to ensure that the application fully complies with the legal requirements of regulation 16 of the 2007 Regulations, all applicants should complete the following.

In each case, refer to the attachment number(s), of your application which contains(s) the information requested in the appropriate sub-article.

Regulation 16(1) In the case of an application for a waste water discharge licence, the application shall -		Attachment Number	Checked by Applicant
(a)	give the name, address, telefax number (if any) and telephone number of the applicant (and, if different, of the operator of any treatment plant concerned) and the address to which correspondence relating to the application should be sent and, if the operator is a body corporate, the address of its registered office or principal office,	B1	Yes
(b)	give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant,	B7	Yes
(c)	give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the waste water treatment plant and/or the waste water discharge point or points to which the application relates,	B2	Yes
(d)	state the population equivalent of the agglomeration to which the application relates,	B9	Yes
(e)	specify the content and extent of the waste water discharge, the level of treatment provided, if any, and the flow and type of discharge,	C, D	Yes
(f)	give details of the receiving water body, including its protected area status, if any, and details of any sensitive areas or protected areas or both in the vicinity of the discharge point or points likely to be affected by the discharge concerned, and for discharges to ground provide details of groundwater protection schemes in place for the receiving water body and all associated hydrogeological and geological assessments related to the receiving water environment in the vicinity of the discharge.	D2, F	Yes
(g)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and, if Regulation 17 does not apply, provide details of the likely environmental consequences of any such discharges,	E3	Yes
(h)	in the case of an existing waste water treatment plant, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application,	E4	Yes
(i)	describe the existing or proposed measures, including emergency procedures, to prevent unintended waste water discharges and to minimise the impact on the environment of any such discharges,	G	Yes
(j)	give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,	F2	Yes
(k)	give details, and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than those into which the emissions are, or are to be made, and of proposed measures to prevent or eliminate or, where that is not practicable, to limit any pollution caused in such discharges,	F1	Yes
(l)	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,	G	Yes
(m)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.	G3	Yes
(n)	Any other information as may be stipulated by the Agency.		No
Regulation 16(3) Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -		Attachment Number	Checked by Applicant
(a)	a copy of the notice of intention to make an application given pursuant to Regulation 9,	B8	Yes
(b)	where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,	Not Applicable	Yes
(c)	Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -		No
(c) (i)	the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and	B3	Yes
(c) (ii)	the point or points at which monitoring and sampling are undertaken or are to be undertaken,	E3	Yes
(d)	such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	B9(iii)	Yes

Regulation 16(4) An original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency.		Attachment Number	Checked by Applicant
1	An Original Application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under regulation 16(3) in hardcopy or in electronic or other format as specified by the agency.		Yes
Regulation 16(5) For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic or other format specified by the Agency.		Attachment Number	Checked by Applicant
1	Signed original.		Yes
2	2 hardcopies of application provided or 2 CD versions of application (PDF files) provided.		Yes
3	1 CD of geo-referenced digital files provided.		Yes
Regulation 17 Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency		Attachment Number	Checked by Applicant
1	EIA provided if applicable	Not Applicable	Yes
2	2 hardcopies of EIS provided if applicable.	Not Applicable	Yes
3	2 CD versions of EIS, as PDF files, provided.	Not Applicable	Yes
Regulation 24 In the case of an application for a waste water discharge certificate of authorisation, the application shall –		Attachment Number	Checked by Applicant
(a)	give the name, address, telefax number (if any) and telephone number of the applicant and the address to which correspondence relating to the application should be sent and, if the operator of the waste water works is a body corporate, the address of its registered office or principal office		
(b)	give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant,		
(c)	give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the discharge point or points to which the application relates,		
(d)	state the population equivalent of the agglomeration to which the application relates,		
(e)	in the case of an application for the review of a certificate, specify the reference number given to the relevant certificate in the register,		
(f)	specify the content and extent of the waste water discharge, the level of treatment provided and the flow and type of discharge,		
(g)	give details of the receiving water body, its protected area status, if any, and details of any sensitive areas or protected areas, or both, in the vicinity of the discharge point or points or likely to be affected by the discharge concerned,		
(h)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and of the likely environmental consequences of any such discharges,		
(i)	in the case of an existing discharge, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application,		
(j)	describe the existing or proposed measures, including emergency procedures, to prevent unauthorised or unexpected waste water discharges and to minimise the impact on the environment of any such discharges,		
(k)	give particulars of the location of the nearest downstream drinking water abstraction point or points to the discharge point or points associated with the waste water works,		
(l)	give details of any designation under any Council Directive or Regulations that apply in relation to the receiving waters,		
(m)	give details of compliance with any applicable monitoring requirements and treatment standards,		
(n)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work,		
(o)	give any other information as may be stipulated by the Agency, and		
(p)	be accompanied by such fee as is appropriate having regard to the provisions of Regulations 38 and 39.		