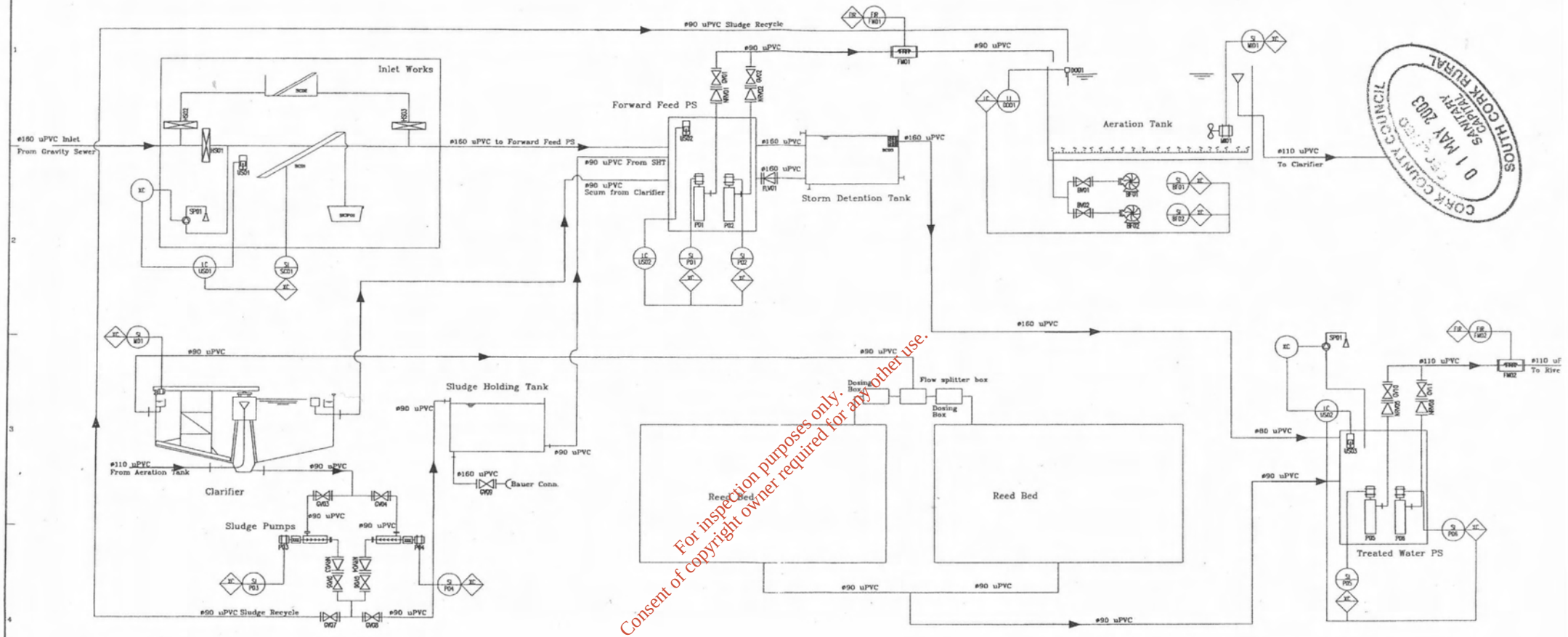


TAG	DESCRIPTION	LOCATION	TAG	DESCRIPTION	LOCATION	TAG	DESCRIPTION	LOCATION
HS01	Handstop 350 Wide	Inlet Works	SP01	Composite Sampler	Inlet Works	FM01	Diameter 80 Flowmeter	Forward Feed PS
HS02	Handstop 350 Wide	Inlet Works	SP02	Composite Sampler	Treated Water PS	FM02	Diameter 100 Flowmeter	Treated Water PS
HS03	Handstop 350 Wide	Inlet Works	US01	U/S Level Sensor	Inlet Works	DO01	D.O. Probe	Aeration Tank
SC01	Spiral Screen	Inlet Works	US02	U/S Level Sensor	Forward Feed PS	MI01	Submersible Mixer	Aeration Tank
SC02	Manual Screen	Inlet Works	US03	U/S Level Sensor	Treated Water PS	M01	Clarifier Drive Motor	Clarifier
SC03	Bar Screen	Storm Detention Tank	P01	Forward Feed Pumps 3.66 l/s @ 8.3m head	Forward Feed PS	BF01	Blower	Aeration Tank
SKIP01	Screenings Collection Skip	Inlet Works	P02	Forward Feed Pumps 3.66 l/s @ 8.3m head	Forward Feed PS	BF02	Blower	Aeration Tank
			P03	Sludge Pumps	Clarifier	FLV01	Flap Valve	Storm Detention Tank
			P04	Sludge Pumps	Clarifier	GV01 - GV11	Gate Valve	-
			P05	Treated Water Pumps 7.33 l/s @ 19.7m head	Treated Water PS	NRV01 - NRV 06	Non Return Valve	-
			P06	Treated Water Pumps 7.33 l/s @ 19.7m head	Treated Water PS			

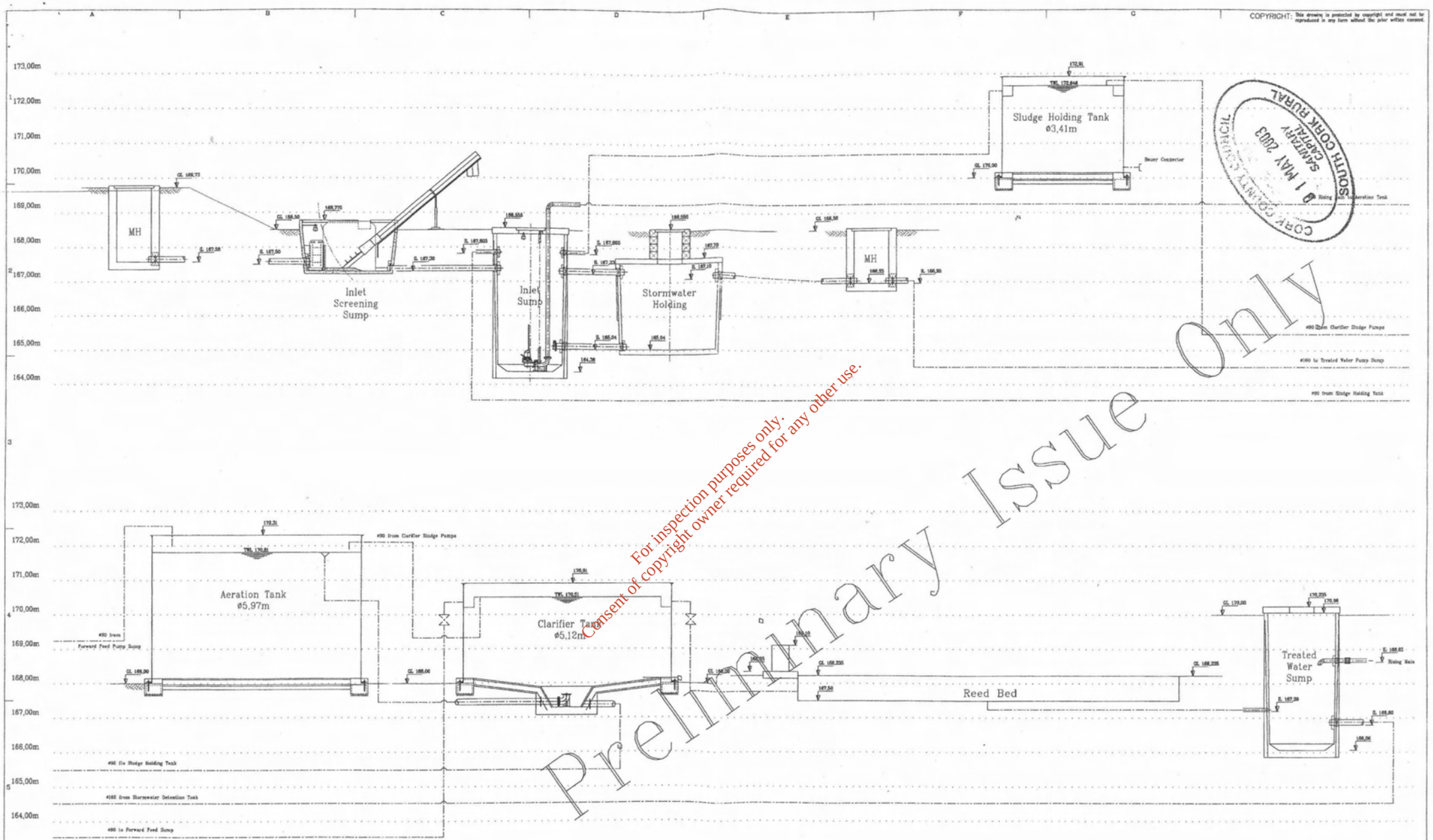
Status: Preliminary Issue

GENERAL NOTES:

REFERENCE DRAWINGS:			Rev.	DRN.	CHK.	APP.	Date	Description
COMPANY	DRAWING No.	Rev.	D	ST	DC	GH	04/03	For Approval
/	/	/						

RESPONSE ENGINEERING
UNIT 3, WESTLINK BUSINESS PARK, OLD MALLOW ROAD, CORK
TEL: 021-4307939 FAX: 021-4307941
E-MAIL: info@response-eng.com

Client: Cork County Council
Project Title: Rylane Wastewater Treatment Plant
Drawing Title: Process & Instrumentation Diagram
Project No.: 300***
Drg No.: 300***-S
Revision:
Scale: NTS



Status: PRELIMINARY ISSUE

GENERAL NOTES:

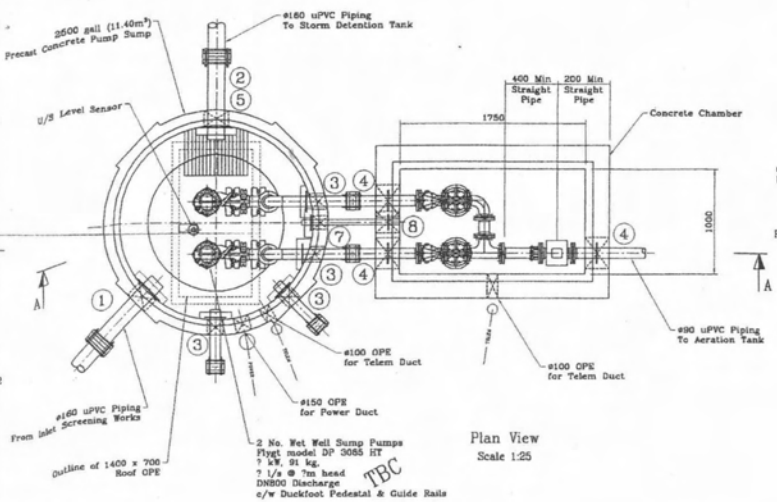
REFERENCE DRAWINGS:

COMPANY	DRAWING No.	Rev.

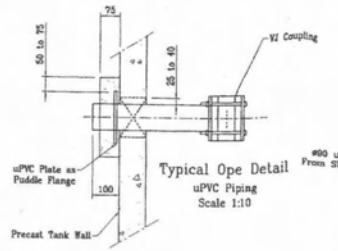
Rev.	DRN.	CHK.	APP.	Date	Description
A	cng	ST	GH	05/03	Preliminary Issue

RESPONSE ENGINEERING
UNIT 5, WESTLINK BUSINESS PARK
OLD MALLOW ROAD, CORK
TEL: 021-4307939 FAX: 021-4307941
E-MAIL: info@response-eng.com

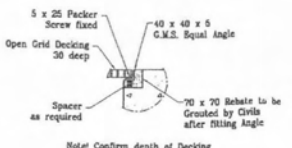
Client: CORK COUNTY COUNCIL
Project No.: 300***
Project Title: RYLANE WASTEWATER TREATMENT PLANT
Org No.: 300***-49
Drawing Title: Hydraulic Profile Drawing
Revision: A
Scale: NTS



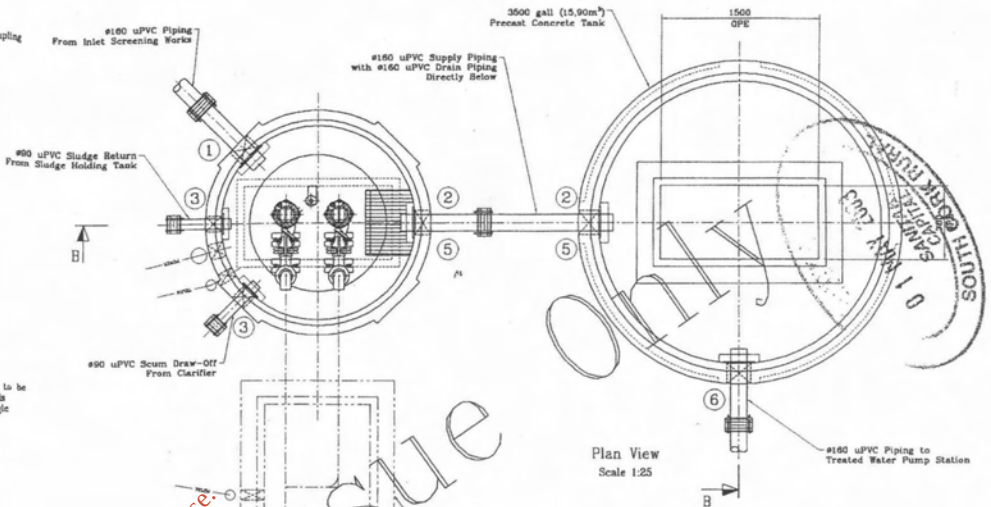
Plan View
Scale 1:25



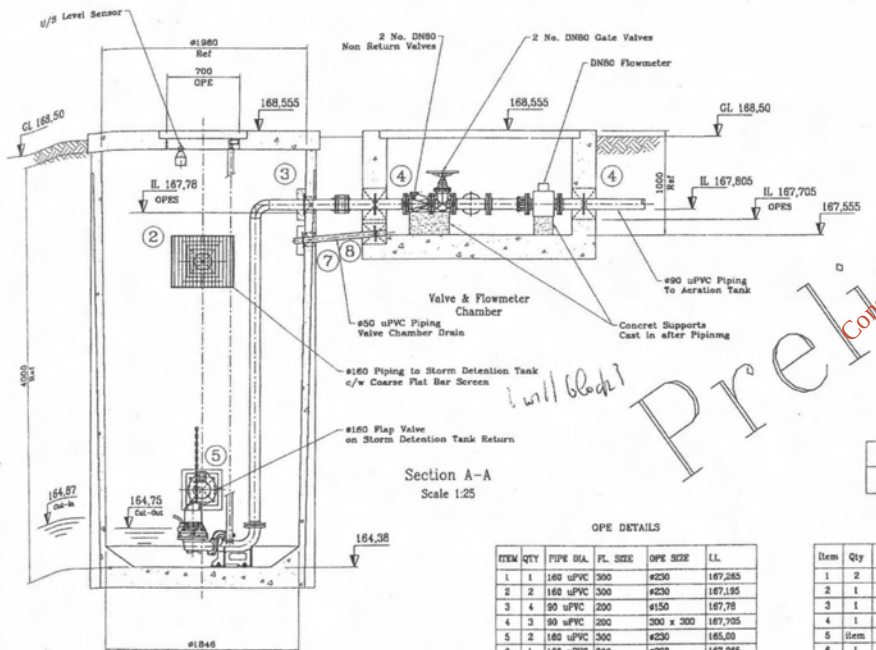
Typical Ope Detail
uPVC Piping
Scale 1:10



Typical Cover Rebate Detail
Scale 1:10

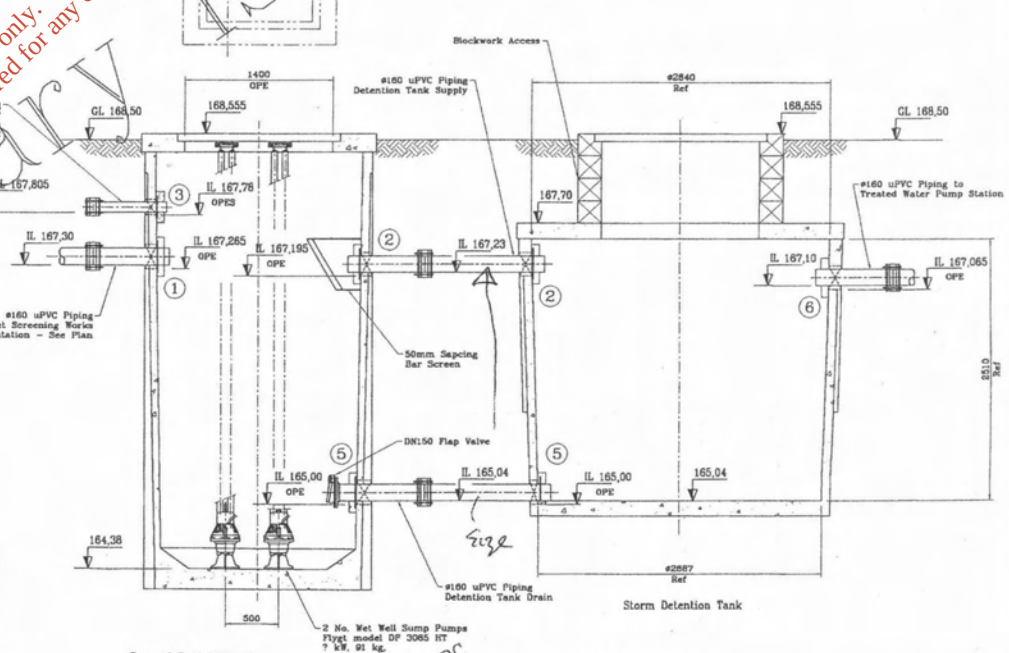


Plan View
Scale 1:25



Section A-A
Scale 1:25

Forward Feed Pump Sump



Forward Feed Pump Sump

Storm Detention Tank

Section B-B
Forward Feed Pump Sump
Scale 1:25

Zone Table	
All Areas	Non Hazardous

OPE DETAILS

ITEM	QTY	PIPE DIA.	FL. SIZE	OPE SIZE	I.L.
1	1	160 uPVC	300	ø230	167,265
2	2	160 uPVC	300	ø230	167,195
3	4	90 uPVC	200	ø150	167,78
4	3	90 uPVC	200	300 x 300	167,705
5	2	160 uPVC	300	ø230	165,00
6	1	160 uPVC	300	ø230	167,065
7	1	50 uPVC	150	ø130	167,445
8	1	50 uPVC	150	200 x 200	167,47
9					

ITEMS OF REL SUPPLY

Item	Qty	Description
1	2	Inlet Pumps
2	1	ø1900 x 4000 Precast Sump
3	1	ø2800 x 2500 Precast Sump
4	1	U/S Level Sensor
5	Item	Pipework and Valves
6	1	DN150 Flap Valve
7	1	DN80 Flowmeter
8	3	Open Grid Decking Covers
9	1	Bar Screen

Notes:
1/ Does not form part of M&E contract
2/ All Dimensions are in mm unless otherwise stated. All Heights are in metres related to Poolbeg Datum
3/ Do not scale from this drawing, if in doubt ask.
4/ All Flange Bolt holes to Straddle pipe centreline
5/ Power and Telem ducts to have min seperation of 300mm. All Power ducts to be ø150. All Telem ducts to be ø100
6/ All cable ducts shall be suitable to carry over 125 V

GENERAL NOTES:

REFERENCE DRAWINGS:

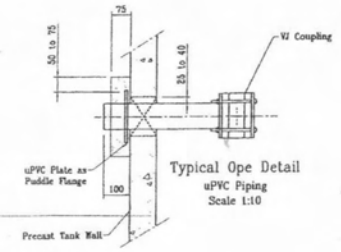
COMPANY	DRAWING No.	Rev.
/	/	/

Rev.	DRN.	CHK.	APP.	Date	Description
0	cng	ST	GH	05/01	For Approval

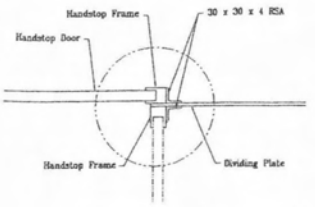
RESPONSE ENGINEERING
UNIT 5, WESTLINK BUSINESS PARK
OLD MALLOW ROAD, CORK
TEL: 021-4307939 FAX: 021-4307941
E-MAIL: info@response-eng.com

Status: FOR APPROVAL

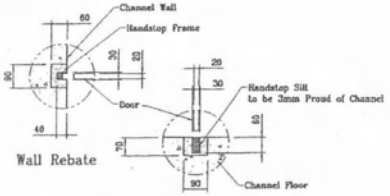
Client: CORK COUNTY COUNCIL
Project No.: 300***
Project Title: RYLANE WASTEWATER TREATMENT PLANT
Dwg No.: 300***-03
Drawing Title: Forwrad Feed Pump Station & Storm Detention Tank
Revision: 0
Scale: 1:25 1:10



Typical Ope Detail
uPVC Piping
Scale 1:10



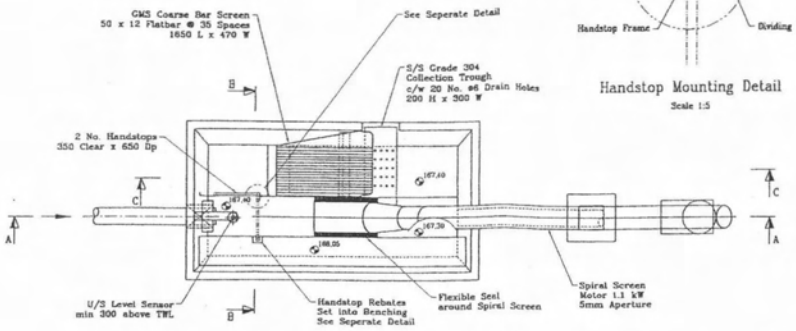
Handstop Mounting Detail
Scale 1:5



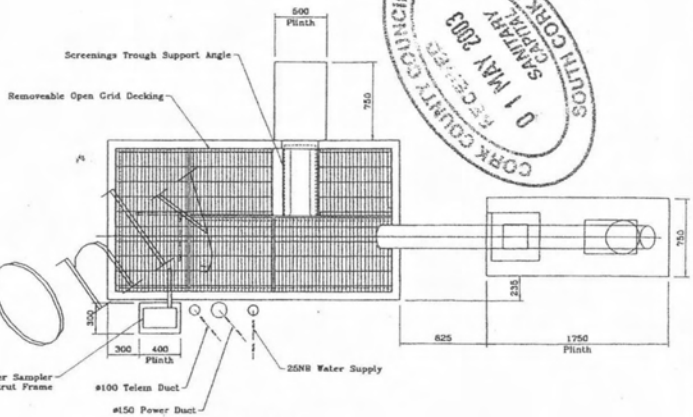
Wall Rebate

Floor Rebate

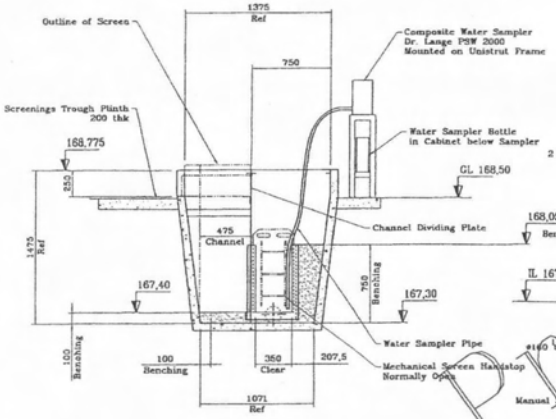
Typical Handstop Rebate Detail
Scale 1:10



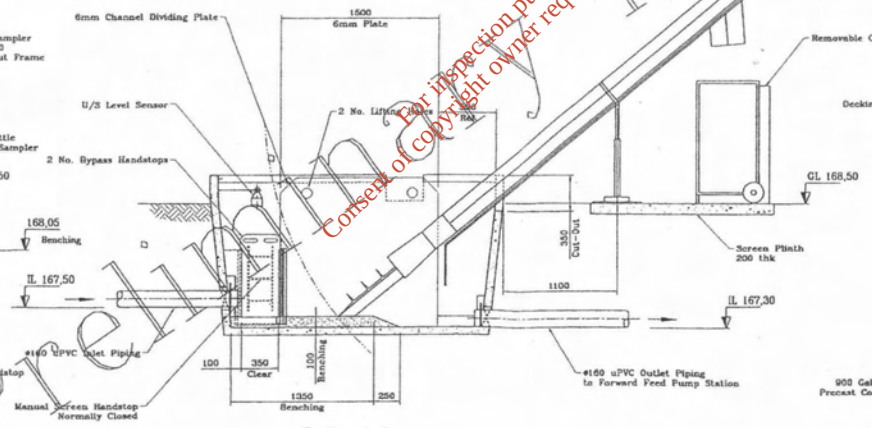
Plan View
with Decking Removed
Scale 1:25



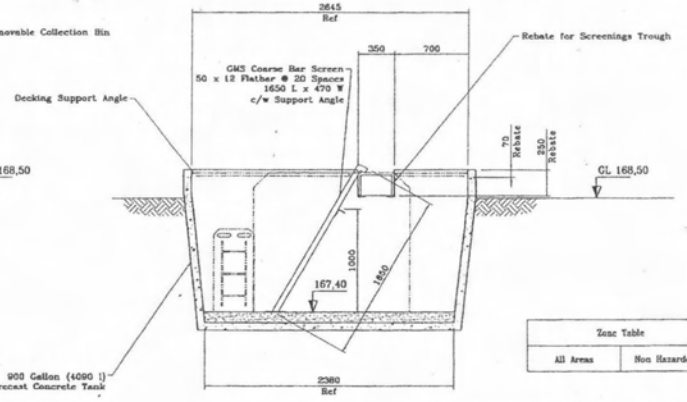
Roof Plan
Scale 1:25



Section B-B
with Screens removed for Clarity
Scale 1:25



Section A-A
Mechanical Screen
Scale 1:25



Section C-C
Manual Screen
Scale 1:25

Zone Table	
All Areas	Non Hazardous

ITEMS OF REL SUPPLY

Item	Qty	Description
1	1	Mechanical Screen
2	1	Manual Screen
3	1	Screenings Trough
4	2	Handstops
5	Item	Aluminium Open Grid Decking
6	1	U/S Level Sensor
7	1	Collection Bin
8	1	Channel Dividing Plate
9		

Notes !

1/ Does not form part of M&E contract

2/ All Dimensions are in mm unless otherwise stated.
All Heights are in metres related to Poolbeg Datum

3/ Do not scale from this drawing, if in doubt ask.

4/ All Flange Bolt holes to Straddle pipe centreline

5/ Power and Telem ducts to have min seperation of 300mm
All Power ducts to be ø150
All Telem ducts to be ø100

6/ All cable ducts shall be suitable to carry over 125 V

GENERAL NOTES:

REFERENCE DRAWINGS:		Rev.	DRN.	CHK.	Ap'P.	Date	Description
COMPANY	DRAWING No.	Rev.					
		A	cng	ST	CH	05/03	Preliminary Issue

RESPONSE ENGINEERING
UNIT 2, WESTLINK BUSINESS PARK
OLD MALLOW ROAD, CORK
TEL: 021-4307939 FAX: 021-4307941
E-MAIL: info@response-eng.com

Client: CORK COUNTY COUNCIL
Project No.: 300***
Project Title: RYLANE WASTEWATER TREATMENT PLANT
Dwg No.: 300***-02
Drawing Title: Inlet Screening Works
Plans & Sections
Revision: A
Scale: 1:25
1:5 & 1:10

Status: PRELIMINARY ISSUE

Issue Code	PMS CK07	Monthly Status Report Mar-2008	response group
Date	18/04/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
Mar-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	16	81
PE (Flow)	78	450
PE (BOD)	79	450

Process Calculations		
Average MLSS	2128	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	266	**kg**
Daily BOD load	5	**kg**
FM Ratio	0.02	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	776	602	657	45	9	22	
BOD	350	255	296	10	2	6	**10**
SS	247	66	132	11	5	8	**10**
TP	14	14	14	0.2	0.2	0.2	

Issue Code	PMS CK07	**Monthly Status Report Apr-2008**	response group
Date	16/05/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
Apr-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	15	81
PE (Flow)	75	450
PE (BOD)	86	450

Process Calculations		
Average MLSS	1995	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	249	**kg**
Daily BOD load	5	**kg**
FM Ratio	0.02	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	960	85	736	38	17	26	
BOD	460	40	344	10	5	7	**10**
SS	265	92	148	13	6	9	**10**
TP	7	7	7	1.2	1.2	1.2	

Issue Code	PMS CK07	**Monthly Status Report May-2008**	response group
Date	13/06/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
May-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	14	81
PE (Flow)	69	450
PE (BOD)	42	450

Process Calculations		
Average MLSS	1976	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	247	**kg**
Daily BOD load	5	**kg**
FM Ratio	0.01	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	551	113	392	28	4	18	
BOD	260	55	180	7	1	4	**10**
SS	260	105	176	10	7	9	**10**
TP	2	2	2	0.6	0.6	0.6	

Issue Code	PMS CK07	Monthly Status Report Jun-2008	response group
Date	16/07/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
Jun-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	17	81
PE (Flow)	83	450
PE (BOD)	73	450

Process Calculations		
Average MLSS	2770	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	346	**kg**
Daily BOD load	4	**kg**
FM Ratio	0.02	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	714	434	550	21	6	14	
BOD	350	210	259	5	2	3	**10**
SS	698	9	157	14	1	6	**10**
TP	17	17	17	3	3	3	

Issue Code	PMS CK07	**Monthly Status Report Jul-2008**	response group
Date	15/08/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
Jul-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	21	81
PE (Flow)	107	450
PE (BOD)	161	450

Process Calculations		
Average MLSS	4351	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	544	**kg**
Daily BOD load	10	**kg**
FM Ratio	0.02	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	1325	506	884	22	5	13	
BOD	750	245	461	6	1	3	10
SS	1151	12	583	17	6	10	10
TP	15	15	15	2	2	2	

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING	VERIFIED
SW01RYLA	Primary	Cork County Council	River	Delehinagh	High	142188	80491	Y

Issue Code	PMS CK07	Monthly Status Report Mar-2008	response group
Date	18/04/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
Mar-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	16	81
PE (Flow)	78	450
PE (BOD)	79	450

Process Calculations		
Average MLSS	2128	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	266	**kg**
Daily BOD load	5	**kg**
FM Ratio	0.02	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	776	602	657	45	9	22	
BOD	350	255	296	10	2	6	**10**
SS	247	66	132	11	5	8	**10**
TP	14	14	14	0.2	0.2	0.2	

Issue Code	PMS CK07	**Monthly Status Report Apr-2008**	response group
Date	16/05/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
Apr-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	15	81
PE (Flow)	75	450
PE (BOD)	86	450

Process Calculations		
Average MLSS	1995	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	249	**kg**
Daily BOD load	5	**kg**
FM Ratio	0.02	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	960	85	736	38	17	26	
BOD	460	40	344	10	5	7	**10**
SS	265	92	148	13	6	9	**10**
TP	7	7	7	1.2	1.2	1.2	

Issue Code	PMS CK07	**Monthly Status Report May-2008**	response group
Date	13/06/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
May-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	14	81
PE (Flow)	69	450
PE (BOD)	42	450

Process Calculations		
Average MLSS	1976	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	247	**kg**
Daily BOD load	5	**kg**
FM Ratio	0.01	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	551	113	392	28	4	18	
BOD	260	55	180	7	1	4	**10**
SS	260	105	176	10	7	9	**10**
TP	2	2	2	0.6	0.6	0.6	

Issue Code	PMS CK07	Monthly Status Report Jun-2008	response group
Date	16/07/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
Jun-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	17	81
PE (Flow)	83	450
PE (BOD)	73	450

Process Calculations		
Average MLSS	2770	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	346	**kg**
Daily BOD load	4	**kg**
FM Ratio	0.02	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	714	434	550	21	6	14	
BOD	350	210	259	5	2	3	**10**
SS	698	9	157	14	1	6	**10**
TP	17	17	17	3	3	3	

Issue Code	PMS CK07	**Monthly Status Report Jul-2008**	response group
Date	15/08/2008		
Originator	A. Johnston		
Authorised by	E. Brennan		

EXECUTIVE SUMMARY
Rylane WWTP
Jul-08

Flows		
Parameter	**Average**	**Design**
	M^3/d	**M^3/d**
Flow	21	81
PE (Flow)	107	450
PE (BOD)	161	450

Process Calculations		
Average MLSS	4351	**Mg/l**
Plant Volume	125	**M3**
Total Biomass	544	**kg**
Daily BOD load	10	**kg**
FM Ratio	0.02	

Results Summary							
	Inlet			**Effluent**			
	Max	Min	Ave	Max	Min	Ave	**STD**
	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	**Mg/l**
COD	1325	506	884	22	5	13	
BOD	750	245	461	6	1	3	10
SS	1151	12	583	17	6	10	10
TP	15	15	15	2	2	2	

Irish National Accreditation Board

Accreditation Certificate

Cork County Council

Wastewater Testing Laboratory, Inniscarra, Co. Cork

Testing Laboratory

Registration number: 016T

is accredited by the Irish National Accreditation Board (INAB) to undertake testing as detailed in the Schedule bearing the Registration Number detailed above, in compliance with the International Standard **ISO/IEC 17025:2005 2nd Edition** *"General Requirements for the Competence of Testing and Calibration Laboratories"*

(This Certificate must be read in conjunction with the Annexed Schedule of Accreditation)

Date of award of accreditation: **01:10:2002**

Date of last renewal of accreditation: **20:09:2007**

Expiry date of this certificate of accreditation: **20:09:2012**

This Accreditation shall remain in force until further notice subject to continuing compliance with INAB accreditation criteria, ISO/IEC 17025 and any further requirements specified by the Irish National Accreditation Board.

Manager: Tom Dempsey — Mr Tom Dempsey

Chairperson: Máire C Walsh — Dr Máire Walsh

Issued on 20th September 2007

Organisations are subject to annual surveillance and are re-assessed every five years. The renewal date on this Certificate confirms the latest date of renewal of accreditation. To confirm the validity of this Certificate, please contact the Irish National Accreditation Board.
The INAB is a signatory of the European co-operation for Accreditation (EA) Testing Multilateral Agreement (MLA) and the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement.

Wilton Park House, Wilton Place, Dublin 2, Ireland. Tel +353 1 607 3003 Fax +353 1 607 3109 E-mail inab@inab.ie Web www.inab.ie

Irish National Accreditation Board

Wilton Park House, Wilton Place, Dublin 2, Ireland
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Schedule of Accreditation

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.016T

(Annex to Accreditation Certificate)

Permanent Laboratory:
Category A

CORK COUNTY COUNCIL

Chemistry Testing Laboratory

Initial Registration Date :	25-April-1991
Postal Address:	Waste Water Laboratory
(Address of other locations	Inniscarra
as they apply)	Co. Cork
Telephone:	+353 (21) 4532700
Fax:	+353 (21) 4532777
E-mail:	
Contact Name:	Ms M Cherry
Facilities:	Normally not available for Public testing

Irish National Accreditation Board

Wilton Park House, Wilton Place, Dublin 2, Ireland
Tel +353 1 607 3003 Fax +353 1 607 3109
E-mail inab@inab.ie Web www.inab.ie

Schedule of Accreditation

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.016T

Permanent Laboratory:
Category A

THE IRISH NATIONAL ACCREDITATION BOARD (INAB) is the Irish body for the accreditation of organisations including laboratories.

Laboratory accreditation is available to testing and calibration facilities operated by manufacturing organisations, government departments, educational institutions and commercial testing/calibration services. Indeed, any organisation involved in testing, measurement or calibration in any area of technology can seek accreditation for the work it is undertaking.

Each accredited laboratory has been assessed by skilled specialist assessors and found to meet criteria which are in compliance with ISO/IEC 17025 or ISO/IEC 15189 (medical laboratories). Frequent audits, together with periodic inter-laboratory test programmes, ensure that these standards of operation are maintained.

Testing and Calibration Categories:

Category A: Permanent laboratory calibration and testing where the laboratory is erected on a fixed location for a period expected to be greater than three years.

Category B: Site calibration and testing that is performed by staff sent out on site by a permanent laboratory that is accredited by the Irish National Accreditation Board.

Category C: Site calibration and testing that is performed in a site/mobile laboratory or by staff sent out by such a laboratory, the operation of which is the responsibility of a permanent laboratory accredited by the Irish National Accreditation Board.

Category D: Site calibration and testing that is performed on site by individuals and organisations that do not have a permanent calibration/testing laboratory. Testing may be performed using

(a) portable test equipment
(b) a site laboratory
(c) a mobile laboratory or
(d) equipment from a mobile or site laboratory

Standard Specification or Test Procedure Used:

The standard specification or test procedure that is accredited is the issue that is current on the date of the most recent visit, unless otherwise stated.

Glossary of Terms

Facilities:

Public calibration/testing service:	Commercial operations which actively seek work from others.
Conditionally available for public calibration/testing:	Established for another primary purpose but, more commonly than not, is available for outside work.
Normally not available for public calibration/testing:	Unavailable for public calibration/testing more often than not.

Laboratory users wishing to obtain assurance that calibration or test results are reliable and carried out to the Irish National Accreditation Board criteria should insist on receiving an accredited calibration certificate or test report. Users should contact the laboratory directly to ensure that this scope of accreditation is current. INAB will, on request, verify the status and scope.

Scope of Accreditation

Cork County Council

Chemical Testing Laboratory

Permanent Laboratory:
Category A

INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters	Chemical analysis:	Documented in-house methods based on Standard Methods for the Examination of Water & Wastewater 21 st Edition APHA (See Note 1)
.01 Waters for domestic purposes *Surface and ground waters*	Biochemical Oxygen Demand 2 - 145,000 mg/l	CP No. 1 Membrane electrode
	Chloride 5 - 1,000 mg/l	CP No. 7 Argentometric method
	ph 2 - 12	CP No. 5 Electrometry
	Suspended Solids 0.5 - 17,500 mg/l	CP No. 3 Gravimetric
	Chemical Oxygen Demand 21 - 135 mg/l 120 - 670,000 mg/l	CP No. 6 Reflux - colourmetric method
	Total phosphorus 0.2 - 5,300 mg/l	US-EPA Approved method/HACH Method CP No.20
	Ammonia 0.1 - 1,000 mg/l NH_3 - N	Documented in-house method CP22 by Konelab based on Method for the Examination of Waters and Associated Material HMSO:1981

Scope of Accreditation

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.016T

Cork County Council

Chemical Testing Laboratory

Permanent Laboratory:
Category A

INAB Classification number (P9) Materials/products tested		Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766	Waters		
.01	Waters for domestic purposes *Surface and ground waters*	Orthophosphate as P (Konelab) Range: 0.005-1.00 mg O-PO4 P/L High Range: 1000 mg O-PO4 P/L Method Detection Limit: 0.02 mg O-PO4 P/L	CP No. 23 Ascorbic Acid Method
		Chloride (Konelab) Range: 25-250 mg/L Cl- High Range Conc.: 86,000 mg/L Cl- Method Detection Limit: 25 mg/L Cl-	CP No. 24 Ferricyanide Method
		Sulphate (Konelab) Range: 30-250 mg/L SO4/L High Range Conc.: 35,000 mg/L SO4/L Method Detection Limit: 30 mg SO4/L	CP No. 25 Documented in-house method by Konelab based on method for the examination of waters and waste waters and associated material HMSO: 1981

Scope of Accreditation

Cork County Council

Permanent Laboratory:

Category A

Chemical Testing Laboratory

INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters	Chemical analysis	Documented in-house methods based on Standard Methods for the Examination of Water& Wastewater 21 st Edition APHA (See Note 1)
.05 Trade Wastes *Industrial effluents* *Urban Wastewater* *Municipal Wastewater*	Biochemical Oxygen Demand 2 - 145,000 mg/l	CP No. 1 Membrane electrode
	Chloride 5 - 1,000 mg/l	CP No. 7 Argentometric method
	pH 2 - 12	CP No. 5 Electrometry
	Suspended Solids 0.5 - 17,500 mg/l	CP No. 3 Gravimetric
	Chemical Oxygen Demand 21 - 135 mg/l 120 - 670,000 mg/l	CP No. 6 Reflux - colourmetric method
	Total phosphorus 0.2 - 5,300 mg/l	US-EPA Approved method/HACH Method CP No.20
	Ammonia 0.1 - 1,000 mg/l NH3-N	Documented in-house method CP22 by Konelab based on Method for the Examination of Waters and Associated Material HMSO: 1981.

Notes
1. APHA American Public Health Association, USA, 21st Edition

Scope of Accreditation

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.016T

Cork County Council

Permanent Laboratory:
Category A

Chemical Testing Laboratory

INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters	Chemical analysis	Documented in-house methods based on Standard Methods for the Examination of Water& Wastewater 21 st Edition APHA (See Note 1)
.05 Trade Wastes *Industrial effluents* *Urban Wastewater* *Municipal Wastewater*		CP No. 1 Membrane electrode
	Orthophosphate as P (Konelab) Range: 0.005 - 1.00 mg O-PO4 P/L High Range: 1000 mg O-PO4 P/L Method Detection Limit: 0.02 mg O-PO4 P/L	CP No. 23 Ascorbic Acid Method
	Chloride (Konelab) Range: 25-250 mg/L Cl- High Range Conc.: 86,600 mg /L Cl- Method Detection Limit: 25mg / L Cl-	CP No. 24 Ferricyanide Method
	Sulphate (Konelab)) Range: 30-250 mg/L SO4 /L High Range Conc.: 35,000 mg/L SO4 /L Method Detection Limit: 30 mg SO4 /L	CP No. 25 Documented in-house method by Konelab based on method for the examination of waters and waste waters and associated material HMSO: 1981

Notes
1. APHA American Public Health Association, USA, 21st Edition

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
SW01RYLA	Primary	Sampling	144713	77487	Y
aSW01u	u/s	Sampling	144729	77536	Y
aSW01d	d/s	Sampling	145802	75945	Y

Attachment E4 Rylane Table E4

Sample Date	29/10/2009		29/10/2009		29/10/2009		29/10/2009
Sample	Influent		Effluent		upstream		downstream
Sample Code	GT1303		GT1304		GT1305		GT1306
Flow M^3/Day	*		*		*		*
pH	7.4		7.1		6.9		7.4
Temperature ℃	*		*		*		*
Conductivity uS/cm 20℃	338		508		196		169
Suspended Solids mg/L	137		<2.5		11		no result
Ammonia-N mg/L	16.0		<0.1		1.3		<0.1
BOD mg/L	221		4		1		<1
COD mg/L	312		56		54		62
TN-N mg/L	24.99		16.99		4.43		4.82
Nitrite-N mg/L	<0.1		<0.1		0.288		<0.1
Nitrate-N mg/L	<0.05		14.3		1.692		3.3
TP-P mg/L	1.95		1.79		0.105		0.078
O-PO4-P mg/L	1.81		3.48		0.19		0.11
SO4 mg/L	<30		43.3		<30		<30
Phenols µg/L	*		<0.10		*		<0.10
Atrazine µg/L	*		<0.01		*		<0.01
Dichloromethane µg/L	*		<1		*		<1
Simazine µg/L	*		<0.01		*		<0.01
Toluene µg/L	*		<0.28		*		<0.28
Tributyltin µg/L	not required		not required		not required		not required
Xylenes µg/L	*		<0.73		*		<1
Arsenic µg/L	*		1.5		*		0.4
Chromium ug/L	<20		<20		<20		<20
Copper ug/L	67.4		<20		<20		<20
Cyanide µg/L	*		<5		*		<5
Fluoride µg/L	63		61		43		38
Lead ug/L	<20		<20		<20		<20
Nickel ug/L	<20		<20		<20		<20
Zinc ug/L	106.9		31.7		<20		<20
Boron ug/L	<20		27.8		<20		<20
Cadmium ug/L	<20		<20		<20		<20
Mercury µg/L	*		<0.03		*		<0.03
Selenium µg/L	*		<2.12		*		1
Barium ug/L	<20		<20		<20		<20

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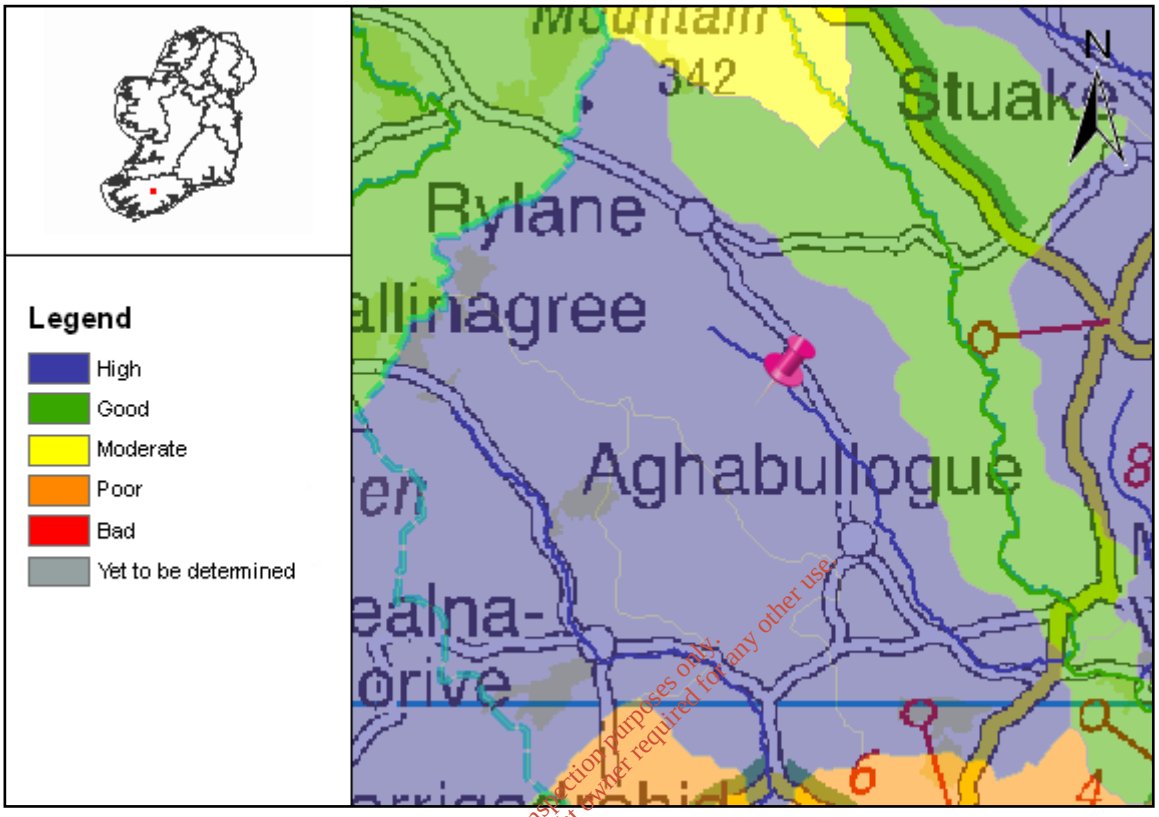
Full Report for Waterbody Delehinagh, Trib of Lee



Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

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Summary Information:

WaterBody Category:	Subbasin Waterbody
WaterBody Name:	Delehinagh, Trib of Lee
WaterBody Code:	IE_SW_19_1651
Overall Status:	High
Overall Objective:	Protect
Overall Risk:	1b Probably At Risk
Applicable Supplementary Measures:	Unsewered; Urban & Industrial; Morphology; Forestry;

Report data based upon Draft RBMP, 22/12/2008.

south western river basin district

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

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Status Report

WaterBody Category:	Subbasin Waterbody
WaterBody Name:	Delehinagh, Trib of Lee
WaterBody Code:	IE_SW_19_1651
Overall Status Result:	High

south western river basin district

	Status Element Description	Result
EX	Status from Monitored or Extrapolated Waterbody	SW_19_1480
	Biological Elements	
Q	Macroinvertebrates (Q-Value)	n/a
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	High

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

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Risk Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: Delehinagh, Trib of Lee

WaterBody Code: IE_SW_19_1651

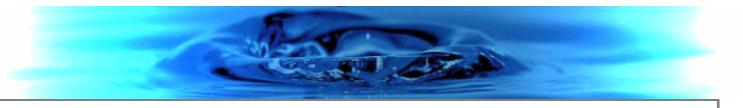
Overall Risk Result: 1b Probably At Risk

south western river basin district

	Risk Test Description	Risk
	Point Risk Sources	
RP1	WWTPs (2008)	2b Not At Risk
RP2	CSOs	2b Not At Risk
RP3	IPPCs (2008)	2b Not At Risk
RP4	Section 4s (2008)	2b Not At Risk
RPO	Overall Risk from Point Sources - Worst Case (2008)	2b Not 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	2b 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

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009



	Morphological Risk Sources	
RM1	Channelisation (2008)	2b Not At Risk
RM2	Embankments (2008)	2b Not At Risk
RM3	Impoundments	2b Not At Risk
RM4	Water Regulation	2b Not At Risk
RMO	Morphology Overall - Worst Case (2008)	2b Not At Risk
	Q/RDI or Point/Diffuse	
QPD	Q class/EPA Diffuse Model or worst case of Point and Diffuse (2008)	1b Probably At Risk
	Hydrology	
RHY1	Water balance - Abstraction	2b Not At Risk
	Overall Risk	
RA	Rivers Overall - Worst Case (2008)	1b Probably At Risk

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

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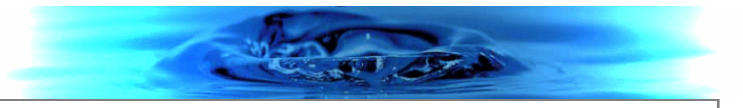

Objectives Report

WaterBody Category:	Subbasin Waterbody
WaterBody Name:	Delehinagh, Trib of Lee
WaterBody Code:	IE_SW_19_1651
Overall Objective:	Protect

south western river basin district

	Objectives Description	Result
	Objectives	
OB1	Objective 1 - Protected Areas	Not Applicable
OB2	Objective 2 - Protect High and Good Status	Protect
OB3	Objective 3 - Restore Less Than Good Status	Not Applicable
OB4	Objective 4 - Reduce Chemical Pollution	Not Applicable
OBO	Overall Objective	Protect
	Deadline	
YR	Default Year by which the objective must be met	2015
EX	Revised Objective Deadline	2007
OBO	Overall Objective and Deadline	Protect

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

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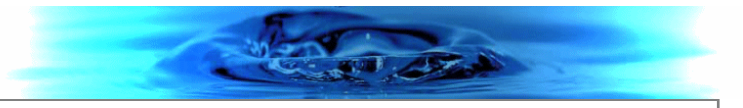

Basic Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: Delehinagh, Trib of Lee

WaterBody Code: IE_SW_19_1651

south western river basin district

	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	No
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 20/08/2009

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Urban and Industrial Discharges Supplementary Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: Delehinagh, Trib of Lee

WaterBody Code: IE_SW_19_1651

south western river basin district

	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?	No
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?	No
PB1	Basic Measure 1 - Measures for improved management.	No
PB2	Basic Measure 2 - Optimise the performance of the waste water treatment plant by the implementation of a performance management system.	No
PB3	Basic Measure 3 - Revise existing Section 4 license conditions and reduce allowable pollution load.	No
PB4	Basic Measure 4 - Review existing IPPC license conditions and reduce allowable pollution load.	No
PB5	Basic Measure 5 - Investigate contributions to the collection system from unlicensed discharges.	No
PB6	Basic Measure 6 - Investigate contributions to the collection system of specific substances known to impact ecological status.	No
PB7	Basic Measure 7 - Upgrade WWTP to increase capacity.	No
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.	No
PS2	Supplementary Measure 2 - Impose development controls where there is, or is likely to be in the future, insufficient capacity at treatment plants.	No
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.	No
PS4	Supplementary Measure 4 - Initiate research to verify risk assessment results and determine the impact of the discharge.	No
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.	No

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

PS8	Supplementary Measure 8 - Upgrade the plant to remove specific substances known to impact on water quality status.	No
PS9	Supplementary Measure 9 - Install ultra-violet or similar type treatment.	No
PS10	Supplementary Measure 10 - Relocate the point of discharge.	No

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

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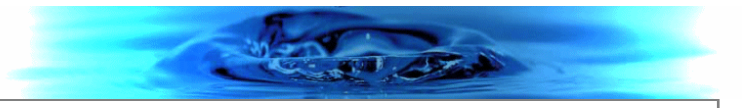

Physical Modifications Supplementary Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: Delehinagh, Trib of Lee

WaterBody Code: IE_SW_19_1651

south western river basin district

	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

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

water matters
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Unsewered Properties Supplementary Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: Delehinagh, Trib of Lee

WaterBody Code: IE_SW_19_1651

south western river basin district

	Supplementary Measures for **Unsewered Properties**	Applicable
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

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

water matters
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Forestry Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: Delehinagh, Trib of Lee

WaterBody Code: IE_SW_19_1651

south western river basin district

	Forestry Measures for Forestry	Applicable
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

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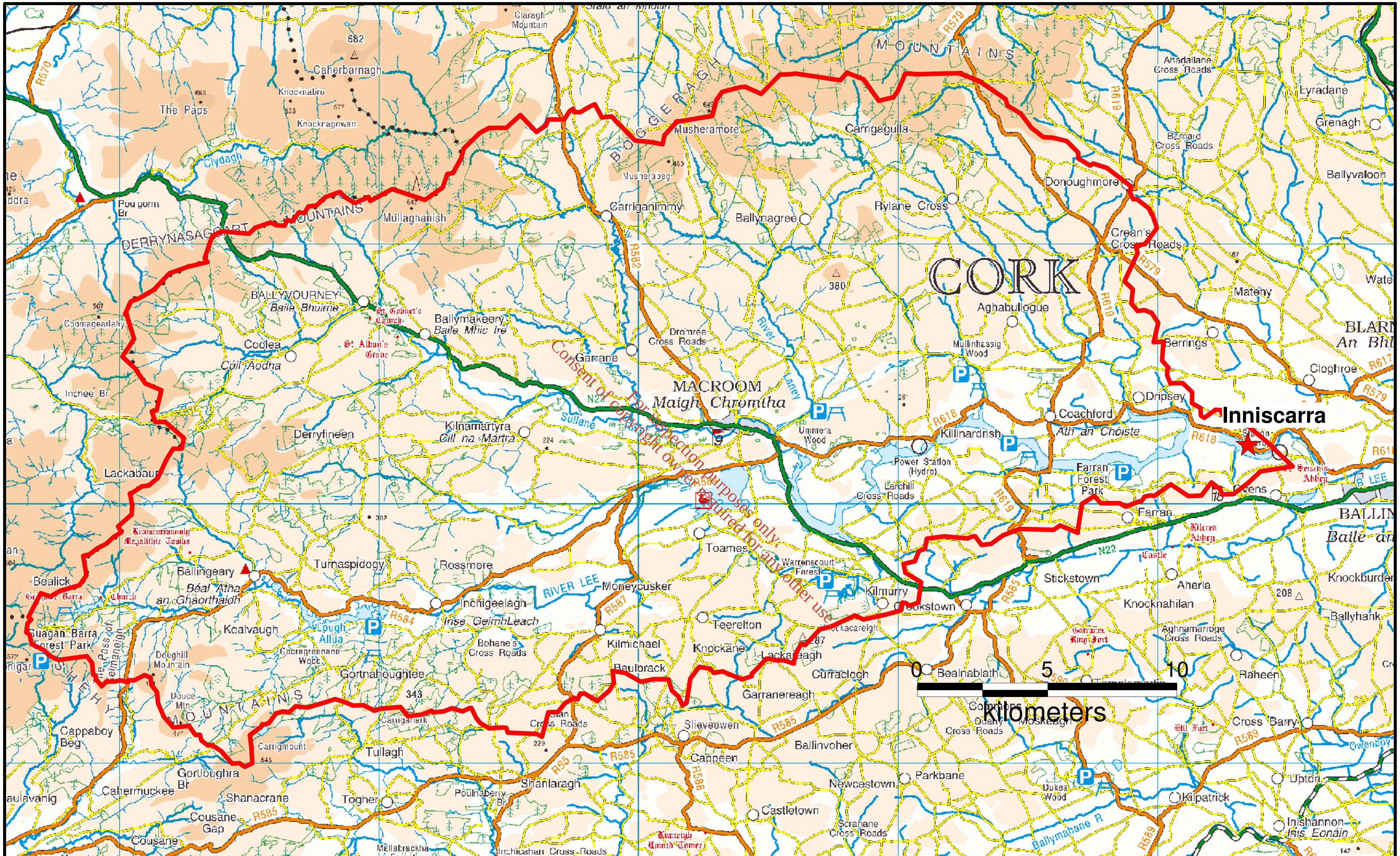
SF4	Eutrophication and Sedimentation - Avoid or limit forest cover on peat sites	No
SF5	Eutrophication and Sedimentation - Change the tree species mix on replanting	No
SF6	Eutrophication and Sedimentation - Limiting felling coup size	No
SF7	Eutrophication and Sedimentation - Establish new forest structures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

Date Reported to Europe: 22/12/2008

Date Report Created 20/08/2009

ABS_CD	AGG_SERVED	ABS_VOL	PT_CD	DIS_DS	EASTING	NORTHING	VERIFIED
0500PUB3401	City & Harbour - 135,000	228,000	No Label Assigned	13,000	153486	72314	N



Inniscarra Water Supply, Catchment Outline

★ Abstraction Location

— Catchment Outline

N

1899 ~ 1999
A Century of Service

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

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 log10(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	-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	**(0-2-2-2)**	**-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 log10(population))		2.018129192
Final Weighted Risk Assessment Score		**60.54387575**
Water Supply Risk Classification		**Moderate**

Agglomeration details

Leading Local Authority	Cork County Council
Co-Applicants	
Agglomeration	Rylane
Population Equivalent	110
Level of Treatment	Secondary
Treatment plant address	Waste Water Treatment Plant, Seiscne, Rylane, Co Cork
Grid Ref (12 digits, 6E, 6N)	142915 / 080839 (Verifed using GPS)
EPA Reference No:	

Contact details

Contact Name:	Patricia Power
Contact Address:	Water Services Section Cork County Council Southern Division Carrigrohane Road Cork
Contact Number:	021-4276891
Contact Fax:	021-4276321
Contact Email:	patricia.power@corkcoco.ie

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

Discharge Point Code: SW-1

Local Authority Ref No:	BOL/RYLA/1209	
Source of Emission:	WWTP	
Location:	Mount Rivers, Rylane, Cork	
Grid Ref (12 digits, 6E, 6N)	142188 / 080491 (Verifed using GPS)	
Name of Receiving waters:	Delehinagh River	
Water Body:	River Water Body	
River Basin District	South Western RBD	
Designation of Receiving Waters:	High	
Flow Rate in Receiving Waters:	0	$m^3.sec^{-1}$ Dry Weather Flow
	0.09994	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	DWF not available	

Emission Details:

(i) Volume emitted			
Normal/day	15 m^3	Maximum/day	120 m^3
Maximum rate/hour	5 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.625 m^3/sec		

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	= 35	4.2
Ammonia (as N)	mg/l	Grab	= 5	0.6
Biochemical Oxygen Demand	mg/l	Grab	= 25	3
Chemical Oxygen Demand	mg/l	Grab	= 125	15
Total Nitrogen (as N)	mg/l	Grab	= 0	0
Nitrite (as N)	mg/l	Grab	= 0	0
Nitrate (as N)	mg/l	Grab	= 0	0
Total Phosphorous (as P)	mg/l	Grab	= 4	0.48
OrthoPhosphate (as P)	mg/l	Grab	= 3	0.36
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.

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 6240, or equivalent.

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	5475

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

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)	145802 / 075945 (Verifed using GPS)

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	29/10/09					
pH		= 7.4			Grab	2	Electrochemical
Temperature	= 0				Grab	0.5	Electrochemical
Electrical Conductivity (@ 25°C)		= 169			Grab	0.5	Electrochemical
Suspended Solids	= 0				Grab	0.5	Gravimetric
Ammonia (as N)		< 0.1			Grab	0.02	Colorimetric
Biochemical Oxygen Demand		< 1			Grab	0.06	Electrochemical
Chemical Oxygen Demand		= 62			Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0.2	ISE
Hardness (as $CaCO_3$)	= 0				Grab	1	titrimetric
Total Nitrogen (as N)		= 4.82			Grab	0.5	Digestion & Colorimetric
Nitrite (as N)		< 0.1			Grab	0.1	Colorimetric
Nitrate (as N)		= 3.3			Grab	0.5	Colorimetric
Total Phosphorous (as P)		= 0.078			Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)		= 0.11			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 no results are available

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)	145802 / 075945 (Verifed using GPS)

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	29/10/09					
Atrazine		< 0.01			Grab	0.96	HPLC
Dichloromethane		< 1			Grab	1	GC-MS1
Simazine		< 0.01			Grab	0.01	HPLC
Toluene		< 0.28			Grab	0.02	GC-MS1
Tributyltin	= 0				Grab	0.02	GC-MS1
Xylenes		< 1			Grab	1	GC-MS1
Arsenic		= 0.4			Grab	0.96	ICP-MS
Chromium		< 20			Grab	20	ICP-OES
Copper		< 20			Grab	20	ICP-OES
Cyanide		< 5			Grab	5	Colorimetric
Flouride		= 38			Grab	100	ISE
Lead		< 20			Grab	20	ICP-OES
Nickel		< 20			Grab	20	ICP-OES
Zinc		< 20			Grab	20	ICP-OES
Boron		< 20			Grab	20	ICP-OES
Cadmium		< 20			Grab	20	ICP-OES
Mercury		< 0.03			Grab	0.2	ICP-MS
Selenium		= 1			Grab	0.74	ICP-MS
Barium		< 20			Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn default of 01/01/09 and 0 where no results are available,TBT testing not required

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)	144713 / 077487 (Verifed using GPS)

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	29/10/09					
pH		= 6.9			Grab	2	Electrochemical
Temperature	= 0				Grab	0.5	Electrochemical
Electrical Conductivity (@ 25°C)		= 196			Grab	0.5	Electrochemical
Suspended Solids		= 11			Grab	0.5	Gravimetric
Ammonia (as N)		= 1.3			Grab	0.02	Colorimetric
Biochemical Oxygen Demand		= 1			Grab	0.06	Electrochemical
Chemical Oxygen Demand		= 54			Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0.2	ISE
Hardness (as $CaCO_3$)	= 0				Grab	1	titrimetric
Total Nitrogen (as N)		= 4.43			Grab	0.5	Digestion & Colorimetric
Nitrite (as N)		= 0.288			Grab	0.1	Colorimetric
Nitrate (as N)		= 1.692			Grab	0.5	Colorimetric
Total Phosphorous (as P)		= 0.105			Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)		= 0.19			Grab	0.02	Colorimetric
Sulphate (SO_4)		< 30			Grab	30	Turbidimetric
Phenols (Sum)	= 0				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 no results are available

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)	144713 / 077487 (Verifed using GPS)

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	29/10/09					
Atrazine	= 0				Grab	0.96	HPLC
Dichloromethane	= 0				Grab	1	GC-MS1
Simazine	= 0				Grab	0.01	HPLC
Toluene	= 0				Grab	0.02	GC-MS1
Tributyltin	= 0				Grab	0.02	GC-MS1
Xylenes	= 0				Grab	1	GC-MS1
Arsenic	= 0				Grab	0.96	ICP-MS
Chromium		< 20			Grab	20	ICP-OES
Copper		< 20			Grab	20	ICP-OES
Cyanide	= 0				Grab	5	Colorimetric
Flouride		= 43			Grab	100	ISE
Lead		< 20			Grab	20	ICP-OES
Nickel		< 20			Grab	20	ICP-OES
Zinc		< 20			Grab	20	ICP-OES
Boron		< 20			Grab	20	ICP-OES
Cadmium		< 20			Grab	20	ICP-OES
Mercury	= 0				Grab	0.2	ICP-MS
Selenium	= 0				Grab	0.74	ICP-MS
Barium		< 20			Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn default of 01/01/09 and 0 where no results are available, TBT testing not required

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 appropiate 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,		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,		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,		Yes
(d)	state the population equivalent of the agglomeration to which the application relates,		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,		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.		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,		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,		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,		Yes
(j)	give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,		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,		Yes
(l)	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,		Yes
(m)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.		Yes
(n)	Any other information as may be stipulated by the Agency.		Yes
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,		Yes
(b)	where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,		Yes
(c)	Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -		Yes
(c) (i)	the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and		Yes
(c) (ii)	the point or points at which monitoring and sampling are undertaken or are to be undertaken,		Yes
(d)	such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	See Letter Attachment B8	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 agancy.		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**
3	2 CD versions of EIS, as PDF files, provided.		Yes
1	EIA provided if applicable		Yes
2	2 hardcopies of EIS provided if 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		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,		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 discharge point or points to which the application relates,		Yes
(d)	state the population equivalent of the agglomeration to which the application relates,		Yes
(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,		Yes
(f)	specify the content and extent of the waste water discharge, the level of treatment provided and the flow and type of discharge,		Yes
(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,		Yes
(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,		Yes
(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,		Yes
(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,		Yes
(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,		Yes
(l)	give details of any designation under any Council Directive or Regulations that apply in relation to the receiving waters,		Yes
(m)	give details of compliance with any applicable monitoring requirements and treatment standards,		Yes
(n)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work,		Yes
(o)	give any other information as may be stipulated by the Agency, and		Yes
(p)	be accompanied by such fee as is appropriate having regard to the provisions of Regulations 38 and 39.		Yes