Wastewater Discharge Licence Application,

Loughrea Agglomeration

Water Services Authority:

GALWAY COUNTY COUNCIL,
WATER SERVICES SECTION,
CENTREPOINT,
LIOSBAUN BUSINESS PARK,
GALWAY.

Requested Further Information

HGL **O'Connor** + Company
Consulting Civil and Structural Engineers
Third Floor
City Point
Prospect Hill
Galway Ireland
Tel (091) 563191/561998
Fax (091) 568683
E-Mail: mail@hgloc.ie

November 2009

Please liaise with consultants & prepare & issue reply within timeframe

ly 19/10/09

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Headquarters, PO Box 3000
Johnstown Castle Estate
County Wexford, Ireland

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Mr. Liam Gavin,
Galway County Council,
Council Buildings,
Prospect Hill,
Co. Galway.

14th October 2009 D0194-01

H.A.L

Re: Loughrea – Notice in accordance with Regulation 18 (3)(b) of the Waste Water Discharge (Authorisation) Regulations, 2007

Dear Mr. Gavin,

I am to refer to the above referenced application for a waste water discharge licence relation to the above referenced agglomeration.

Having examined the foregoing, I am to advise that the Agency is of the view that the application does not comply with Regulation 16 of the Waste Water Discharge (Authorisation) Regulations, 2007.

You are therefore requested in accordance with Regulation 18 (3) (b) of the regulations, to take steps to supply the information detailed below:

REGULATION 16 COMPLIANCE REQUIREMENTS

1. Clarify the correct population equivalent of the agglomeration.

2. Logon to http://78.137.160.73/epa_wwd_licensing/ and fill in the zero values in Tables D.1(i)(b), D.1(i)(c), F.1(i)(a) and F.1(i)(b). Return the updated printed version to the Agency.

3. Noting that there is a Special Area of Conservation and a Special Protection Area downstream of Craughwell, complete the flow diagram in Circular L8/08 'Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments' issued by the DoEHLG, to determine if an appropriate assessment is required. Provide details of answers to each section of this flow diagram. If an appropriate assessment is required, submit a copy of the report of the assessment.

4. Resubmit a revised Section G.1 'Compliance with Council Directives'.

Your reply to this notice should include a revised non-technical summary, which reflects the information you supply in compliance with the notice, insofar as that information impinges on the non-technical summary.

In the case where any drawings already submitted are subject to revision consequent on this request, a revised drawing should be prepared in each case. It is not sufficient to annotate the original drawing with a textual correction. Where such revised drawings are submitted, provide a list of drawing titles, drawing numbers and revision status, which correlates the revised drawings with the superseded versions.

Please supply the information in the form of one original plus one copy within ***four weeks*** of the date of this notice. In addition, please submit one copy of the requested information in electronic searchable PDF format on a CD-ROM to the Agency. Please note that all maps/drawings should not exceed A3 in size.

Please note that the application's register number is D0194-01. Please direct all correspondence in relation to this matter to *Administration, Environmental Licensing Programme, Office of Climate, Licensing & Resource Use, Environmental Protection Agency, Headquarters, PO Box 3000, Johnstown Castle Estate, County Wexford* quoting the register number.

Yours sincerely,

John Breen
Inspector
Office of Climate, Licensing and Resource Use

HGL**O'Connor**+Company

Consulting Civil and Structural Engineers

City Point,
Prospect Hill,
Galway, Ireland.
Tel: (091) 563191 / 561998
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E-mail: mail@hgloc.ie
Webpage: www.hgloc.ie

Administration,
Environmental Licensing Programme,
Office of Climate, Licensing and Resource Use,
Environmental Protection Agency,
Headquarters,
PO Box 3000
Johnstown Castle Estate,
Co. Wexford.

Our ref: 08088 / 2.6

9th November 2009

Loughrea WWTW – WWDL Application D0194-01

Dear sirs,

We write in response to your correspondence, dated 14th October, with regard to the above wastewater discharge licence application on behalf of Galway County Council.

We propose to address each of the points of information requested in turn as set out in your letter.

1. We confirm the population equivalent for the Loughrea WWTW is 10,000 PE

2. The updated data has been uploaded onto the appropriate website and hard copies of the following tables of data are now enclosed;
   - Table D.1(i)(b)
   - Table D.1(i)(c)
   - Table F.1(i)(a)
   - Table F.1(i)(b)

3. We have completed the flow diagram in accordance with Circular L8/08 with regard to the SAC / SPA at Rahasane Turlough, which is attached.

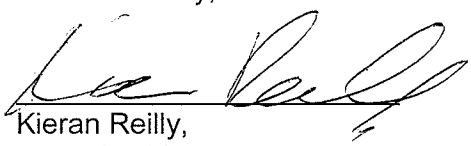
4. Section G.1 'Compliance with Council Directives' has been revised and is now enclosed.

We have also revised the non-technical summary to reflect the revised information requested, which is enclosed.

As requested, all information enclosed is provided in the form of one original, plus one copy plus one electronic copy in searchable PDF format on a CD-ROM.

We trust this is satisfactory, however if you have any queries, please do not hesitate to contact our office.

Yours faithfully,



Kieran Reilly,
For HGL O'Connor + Company

Attachment A.1 – Non-technical Summary

The Loughrea Waste Water Treatment Plant (WWTP) is located at Ballygasty approximately 1 .5km north of Loughrea town. Planning permission was granted in 1998, for the treatment plant under Part X of the Local Government (Planning and Development) Regulations 1994 and construction was completed and the plant was commissioned in September 2001.

The WWTP consists of the following:

- An inlet works made up of a manually raked fine inlet screen and a grit trap, with an overflow pipe to the stormwater holding tank. This stormwater is returned into the treatment system when the storm flow decreases. There is also an emergency overflow from the stormwater holding tank to the outfall pipe.
- An inlet flow meter chamber.
- An aeration basin, split into two lanes with a diffused aeration system.
- The mixed liquor is also dosed with Ferric Sulphate to reduce Phosphorus levels in the final effluent.
- Two Final Settlement Tanks which settle out the sludge by gravity and discharge it to the sludge pumping stations. The clarified effluent flows into a collection channel from where it flows to the final effluent sampling and flow meter chamber prior to discharge to the Saint Clerans River.
- The activated sludge pumping stations discharge sludge to either the sludge thickener or return it to the aeration tanks. The liquid drawn off is pumped for recirculation through the WWTP
- The thickened sludge is pumped to the dewatering building where it is dosed with lime and dried using a belt press system. The belt washwater is pumped for recirculation through the WWTP.
- The dried sludge is stored in sheds prior to collection by the disposal contractor.

The plant was designed for a Population Equivalent (PE) of 5,000 in 1979 with provision made for future expansion through flow splitting valve chambers which may be used to divide the flow between existing treatment units and future additional units. Based on a dry weather flow rate of 250 litres/head/day and a diurnal peaking factor of 3, the current hydraulic capacity of the plant is 3,750m^3/day. The plant was designed for a maximum BOD loading of 325 kg/day. This was based on a typical BOD loading of 0.065 kg/PE/day. The WWTP is manned from 8 am to 4 pm Monday to Friday and is manned for a shorter period at the weekend and on public holidays.

The final effluent from the WWTP discharges to the Saint Clerans River at a point approximately 200m north-west of the plant. This discharge is predominantly a treated effluent with occasional untreated effluent also discharged as a result of stormwater overflows. Current emission levels from this primary discharge point are capable of operating to a discharge standard of 10/15 BOD/SS with Phosphorus level of 2mg/l. The current outflows from this pipe are approximately 1,290m^3/day which is expected to increase to 3,090m^3/day by 2035 in line with population trends and industrial and enterprise growth in the area.

There is also a storm overflow from the collection system, which begins at Manhole 2704 located on Station Road in Loughrea town and discharges to the river 420m northeast of this manhole. This overflow is not fitted with a flow meter and is not constantly monitored. A flow monitor was installed for a period of six weeks in 2007 which recorded overflows varying between zero and 1,850.2m^3/day. The average discharge over the monitoring period was 83.4m^3/day which represents a potential total annual discharge of up to 30,000m^3/day into the stream. This overflow discharge is from a combined

sewer containing a mixture of stormwater and untreated foul effluent. The standard of the overflow varies depending on the foul peak and the storm event leading to the overflow event but on average would be of the order of 20/20 BOD/SS. This overflow is no longer considered acceptable as part of the collection system for Loughrea town and is proposed to be abandoned under a collection system upgrade contract which is currently proceeding to tender stage.

The treatment plant itself is currently being extended to ensure it is capable of providing a high quality effluent with sufficient reserve capacity to deal with shock loadings and population increases into the future. This extension includes the provision of an additional aeration bed and final settlement tank.

Emissions from the plant are constantly monitored as are the water quality levels in the river both upstream and downstream of the discharge point. This will continue into the foreseeable future.

There are no important conservation sites such as NHA's, SAC's or SAP's within the immediate locality of the treatment plant however there is a designated Special Area of Conservation (SAC) and Special Protection Area (SPA) located downstream of the discharge locations. The designated site is a turlough, the Rahasane Turlough and the potential impact on this site is assessed as part of this application. The area around the lake in the town, Lough Rea is a recreational area and is designated as an SAC, an SPA and a proposed NHA but this location is upstream of the treatment plant and the discharge points and will remain unaffected by discharges from these.

There have also been no drinking water abstraction locations identified downstream of the discharge points relating to Loughrea WWTW. In the past some water abstraction did take place from the Craughwell River at Craughwell village but this is no longer in use and there are no plans to restore abstraction.

Saint Clerans River is located within the Kilcolgan River Catchment in the Western River Basin District which is currently approaching consultation stage in relation to the publication of its River Basin Management Plan. This is expected to be published in 2009 and the programme of measures should be fully operational by 2012.

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

Discharge Point Code: SW-1

Local Authority Ref No:	Not Applicable	
Source of Emission:	Loughrea WWTW	
Location:	Ballybasty, Loughrea	
Grid Ref (12 digits, 6E, 6N)	162238 / 218609	
Name of Receiving waters:	Saint Clerans River	
Water Body:	River Water Body	
River Basin District	Western RBD	
Designation of Receiving Waters:	Q3	
Flow Rate in Receiving Waters:	0.0008	$m^3.sec^{-1}$ Dry Weather Flow
	0.01	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)		

Emission Details:

(i) Volume emitted			
Normal/day	3090 m^3	Maximum/day	9270 m^3
Maximum rate/hour	6.4 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.036 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	= 7.5	
Temperature	°C	Grab	= 0	
Electrical Conductivity (@ 25°C)	µS/cm	Grab	= 0	
Suspended Solids	mg/l	Grab	= 91.5	160.7
Ammonia (as N)	mg/l	Grab	= 19.7	32.4
Biochemical Oxygen Demand	mg/l	Grab	= 104	182.6
Chemical Oxygen Demand	mg/l	Grab	= 93	163.3
Total Nitrogen (as N)	mg/l	Grab	= 0	0
Nitrite (as N)	mg/l	Grab	= 0	0
Nitrate (as N)	mg/l	Grab	= 33.1	81
Total Phosphorous (as P)	mg/l	Grab	= 1.4	1.9
OrthoPhosphate (as P)	mg/l	Grab	= 1.1	2
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 D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS (Storm Overflow)

Discharge Point Code: SW-2

Local Authority Ref No:	2704	
Source of Emission:	Sewer Network	
Location:	Station Road, Loughrea	
Grid Ref (12 digits, 6E, 6N)	162261 / 216700	
Name of Receiving waters:	Saint Clerans River	
Water Body:	River Water Body	
River Basin District	Western RBD	
Designation of Receiving Waters:	Q3	
Flow Rate in Receiving Waters:	0.0008	$m^3.sec^{-1}$ Dry Weather Flow
	0.01	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)		

Emission Details:

(i) Volume emitted			
Normal/day	83.4 m^3	Maximum/day	1850 m^3
Maximum rate/hour	77.1 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0 m^3/sec		

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)	162202 / 218704

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/01	15/08/07	05/12/07	28/05/08			
pH		= 7.2	= 6.9	= 7.1	Grab	0	electrometric test
Temperature	= 0				Grab	0	Not Applicable
Electrical Conductivity (@ 25°C)	= 0				Grab	0	Not Applicable
Suspended Solids		= 5.6	= 4	= 1.6	Grab	0	Not Applicable
Ammonia (as N)		= 0.38	= 1	= 4.5	Grab	0	Not Applicable
Biochemical Oxygen Demand		= 7	= 3	= 8	Grab	0	5 Day BOD test
Chemical Oxygen Demand		= 30			Grab	0	Oxidation and spectrophotometer
Dissolved Oxygen	= 0				Grab	0	Not Applicable
Hardness (as $CaCO_3$)	= 0				Grab	0	Not Applicable
Total Nitrogen (as N)	= 0				Grab	0	Not Applicable
Nitrite (as N)	= 0				Grab	0	Not Applicable
Nitrate (as N)	= 0				Grab	0	Not Applicable
Total Phosphorous (as P)	= 0				Grab	0	Not Applicable
OrthoPhosphate (as P)		= 0.17	= 0.14	= 0.1	Grab	0	Not Applicable
Sulphate (SO_4)	= 0				Grab	0	Not Applicable
Phenols (Sum)	= 0				Grab	0	Not Applicable

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:	Dates marked as 01/01/01 indicate that data is not available. This format of input (DD\MM\YY) is the only type allowed to be entered in this section. All corresponding parameters are shown as zero

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	18/06/08	26/06/08	03/07/08	06/08/08			
pH	= 7	= 7	= 7.2	= 7	Grab	0	electrometric test
Temperature					Grab	0	Not Applicable
Electrical Conductivity (@ 25°C)					Grab	0	Not Applicable
Suspended Solids	= 20.4	= 21.2	= 8.4		Grab	0	Not Applicable
Ammonia (as N)	= 5.1	= 2.8	= 2.71	= 1.09	Grab	0	Not Applicable
Biochemical Oxygen Demand	= 5	= 5	= 4	= 3	Grab	0	5 Day BOD test
Chemical Oxygen Demand					Grab	0	Oxidation and spectrophotometer
Dissolved Oxygen					Grab	0	Not Applicable
Hardness (as $CaCO_3$)					Grab	0	Not Applicable
Total Nitrogen (as N)					Grab	0	Not Applicable
Nitrite (as N)					Grab	0	Not Applicable
Nitrate (as N)					Grab	0	Not Applicable
Total Phosphorous (as P)					Grab	0	Not Applicable
OrthoPhosphate (as P)	= 0.37	= 0.26	= 0.2	= 0.24	Grab	0	Not Applicable
Sulphate (SO_4)					Grab	0	Not Applicable
Phenols (Sum)					Grab	0	Not Applicable

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:	Dates marked as 01/01/01 indicate that data is not available. This format of input (DD\MM\YY) is the only type allowed to be entered in this section. All corresponding parameters are shown as zero

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)	162202 / 218704

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/01						
Atrazine	= 0				Grab	0	Not Applicable
Dichloromethane	= 0				Grab	0	Not Applicable
Simazine	= 0				Grab	0	Not Applicable
Toluene	= 0				Grab	0	Not Applicable
Tributyltin	= 0				Grab	0	Not Applicable
Xylenes	= 0				Grab	0	Not Applicable
Arsenic	= 0				Grab	0	Not Applicable
Chromium	= 0				Grab	0	Not Applicable
Copper	= 0				Grab	0	Not Applicable
Cyanide	= 0				Grab	0	Not Applicable
Flouride	= 0				Grab	0	Not Applicable
Lead	= 0				Grab	0	Not Applicable
Nickel	= 0				Grab	0	Not Applicable
Zinc	= 0				Grab	0	Not Applicable
Boron	= 0				Grab	0	Not Applicable
Cadmium	= 0				Grab	0	Not Applicable
Mercury	= 0				Grab	0	Not Applicable
Selenium	= 0				Grab	0	Not Applicable
Barium	= 0				Grab	0	Not Applicable

Additional Comments:	Dates marked as 01/01/01 indicate that data is not available. This format of input (DD\MM\YY) is the only type allowed to be entered in this section. All corresponding parameters are shown as zero Dates marked as 01/01/01 indicate that data is not available. This format of input (DD\MM\YY) is the only type allowed to be entered in this section. All corresponding parameters are shown as zero

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)	162217 / 218511

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/01	15/08/07	05/12/07	28/05/08			
pH		= 7.4	= 6.9	= 7.4	Not Applicable	0	electrometric test
Temperature	= 0				Not Applicable	0	Not Applicable
Electrical Conductivity (@ 25°C)	= 0				Not Applicable	0	Not Applicable
Suspended Solids		= 2	= 12.8	= 0.4	Not Applicable	0	Not Applicable
Ammonia (as N)		= 0.09	= 0.1	= 0.1	Not Applicable	0	Not Applicable
Biochemical Oxygen Demand		= 2	= 1	= 2	Not Applicable	0	5 Day BOD test
Chemical Oxygen Demand		= 27			Not Applicable	0	Oxidation and spectrophotometer
Dissolved Oxygen	= 0				Not Applicable	0	Not Applicable
Hardness (as $CaCO_3$)	= 0				Not Applicable	0	Not Applicable
Total Nitrogen (as N)	= 0				Not Applicable	0	Not Applicable
Nitrite (as N)	= 0				Not Applicable	0	Not Applicable
Nitrate (as N)	= 0				Not Applicable	0	Not Applicable
Total Phosphorous (as P)	= 0				Not Applicable	0	Not Applicable
OrthoPhosphate (as P)		= 0.12	= 0.06	= 0.1	Not Applicable	0	Not Applicable
Sulphate (SO_4)	= 0				Not Applicable	0	Not Applicable
Phenols (Sum)	= 0				Not Applicable	0	Not Applicable

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:	

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	06/06/08	18/06/08	26/06/08	03/07/08			
pH	= 7.3	= 7.2	= 7.1	= 7.5	Not Applicable	0	electrometric test
Temperature					Not Applicable	0	Not Applicable
Electrical Conductivity (@ 25°C)					Not Applicable	0	Not Applicable
Suspended Solids		= 9.2	= 10.8	= 11.6	Not Applicable	0	Not Applicable
Ammonia (as N)		= 0.5	= 0.25	= 0.1	Not Applicable	0	Not Applicable
Biochemical Oxygen Demand		= 5	= 3	= 4	Not Applicable	0	5 Day BOD test
Chemical Oxygen Demand					Not Applicable	0	Oxidation and spectrophotometer
Dissolved Oxygen					Not Applicable	0	Not Applicable
Hardness (as $CaCO_3$)					Not Applicable	0	Not Applicable
Total Nitrogen (as N)					Not Applicable	0	Not Applicable
Nitrite (as N)					Not Applicable	0	Not Applicable
Nitrate (as N)					Not Applicable	0	Not Applicable
Total Phosphorous (as P)					Not Applicable	0	Not Applicable
OrthoPhosphate (as P)		= 0.16	= 0.14	= 0.21	Not Applicable	0	Not Applicable
Sulphate (SO_4)					Not Applicable	0	Not Applicable
Phenols (Sum)					Not Applicable	0	Not Applicable

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:	

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	06/08/08						
pH					Not Applicable	0	electrometric test
Temperature					Not Applicable	0	Not Applicable
Electrical Conductivity (@ 25°C)					Not Applicable	0	Not Applicable
Suspended Solids					Not Applicable	0	Not Applicable
Ammonia (as N)	= 0.03				Not Applicable	0	Not Applicable
Biochemical Oxygen Demand	= 1				Not Applicable	0	5 Day BOD test
Chemical Oxygen Demand					Not Applicable	0	Oxidation and spectrophotometer
Dissolved Oxygen					Not Applicable	0	Not Applicable
Hardness (as $CaCO_3$)					Not Applicable	0	Not Applicable
Total Nitrogen (as N)					Not Applicable	0	Not Applicable
Nitrite (as N)					Not Applicable	0	Not Applicable
Nitrate (as N)					Not Applicable	0	Not Applicable
Total Phosphorous (as P)					Not Applicable	0	Not Applicable
OrthoPhosphate (as P)	= 0.08				Not Applicable	0	Not Applicable
Sulphate (SO_4)					Not Applicable	0	Not Applicable
Phenols (Sum)					Not Applicable	0	Not Applicable

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:	

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)	162217 / 218511

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/01						
Atrazine	= 0				Not Applicable	0	Not Applicable
Dichloromethane	= 0				Grab	0	Not Applicable
Simazine	= 0				Grab	0	Not Applicable
Toluene	= 0				Grab	0	Not Applicable
Tributyltin	= 0				Grab	0	Not Applicable
Xylenes	= 0				Grab	0	Not Applicable
Arsenic	= 0				Grab	0	Not Applicable
Chromium	= 0				Grab	0	Not Applicable
Copper	= 0				Grab	0	Not Applicable
Cyanide	= 0				Grab	0	Not Applicable
Flouride	= 0				Grab	0	Not Applicable
Lead	= 0				Grab	0	Not Applicable
Nickel	= 0				Grab	0	Not Applicable
Zinc	= 0				Grab	0	Not Applicable
Boron	= 0				Grab	0	Not Applicable
Cadmium	= 0				Grab	0	Not Applicable
Mercury	= 0				Grab	0	Not Applicable
Selenium	= 0				Grab	0	Not Applicable
Barium	= 0				Grab	0	Not Applicable

Additional Comments:	

Attachment F.1 – Assessment of Impact on Receiving Surface Water

Details of the discharges for the primary discharge point and details of the upstream and downstream surface water monitoring have been provided in Tables F.1(i)(a) and (b). There are no secondary discharge points and no groundwater discharges associated with this application.

The Saint Clerans River flows north west from Lough Rea for approximately 9km where it joins the Dunkellin River. The Dunkellin River flows west for approximately 12km and becomes the Kilcolgan River just before it flows into Galway Bay near Kilcolgan village. The existing water quality in the Saint Clerans River is rated as Q3 on the Environmental Protection Agency's River Quality rating system, which indicates poor water quality status. It is also classed as being 'at risk of not achieving good status' under the Water Framework Directive. The Dunkellin River is rated as Q4, good status. There are no protection schemes in place in these water bodies under the Western River Basin District and no managemenrt plans or catchment plans have been published. The Western RBD are currently undertaking a scoping study to develop a catchment plan for the region. Lough Rea is designated as a recreational lake under the Water Framework Directive, and as a Special Area of Conservation and a Special Protection Area by the National Parks and Wildlife Service but the lake is situated upstream of the WWTW and is not affected by discharges from the plant. There is a designated SAC and SPA site located along the Dunkellin River downstream of the discharge point at Rahasane Turlough. A preliminary screening of the impact of the discharge from Loughrea WWTW has been carried out in accordance with the Department of the Environment Circular L8/08 (Appendix 1) and this is attached. The screening involves a number of questions with yes or no answers which lead to the conclusion of either "Assess Impacts" or "No further action required". The process and answers for this specific site are detailed below and shown as the red path on the enclosed flow diagram. This preliminary screening indicates that an Appropriate Assessment is required for this site.

Details of answers for Flow Diagram

1. The development site is not located within a nature conservation site.

2a. The development relates to a surface water discharge to the Saint Clearns River and is within the catchment of a nature conservation site, the Rahasane Turlough.

3. The qualifying habitats and species are water dependent, comprising of aquatic birds such as snipe, swan and duck as well as aquatic and semi-aquatic species of vegetation.

5. To date no Water Framework Directive (WFD) sub-basin plan has been published for the site or its protected habitats/species. Therefore an assessment of the impacts is required in accordance with Article 6(3) of the EU Habitats Directive.

Conclusion ASSESS IMPACTS

The average discharge from the Loughrea WWTW over the last twelve months is approximately 3090m^3/day or 0.03m^3/sec, which is highly influenced by rainfall events and stormwater infiltration from the town. The Saint Clerans River has a measured Dry Weather Flow (DWF) of 0.0008m^3/sec and a 95th percentile flow of 0.0100m^3/sec, while the Dunkellin River has a DWF of 0.03m^3/sec and a 95th percentile flow of 0.075m^3/sec.

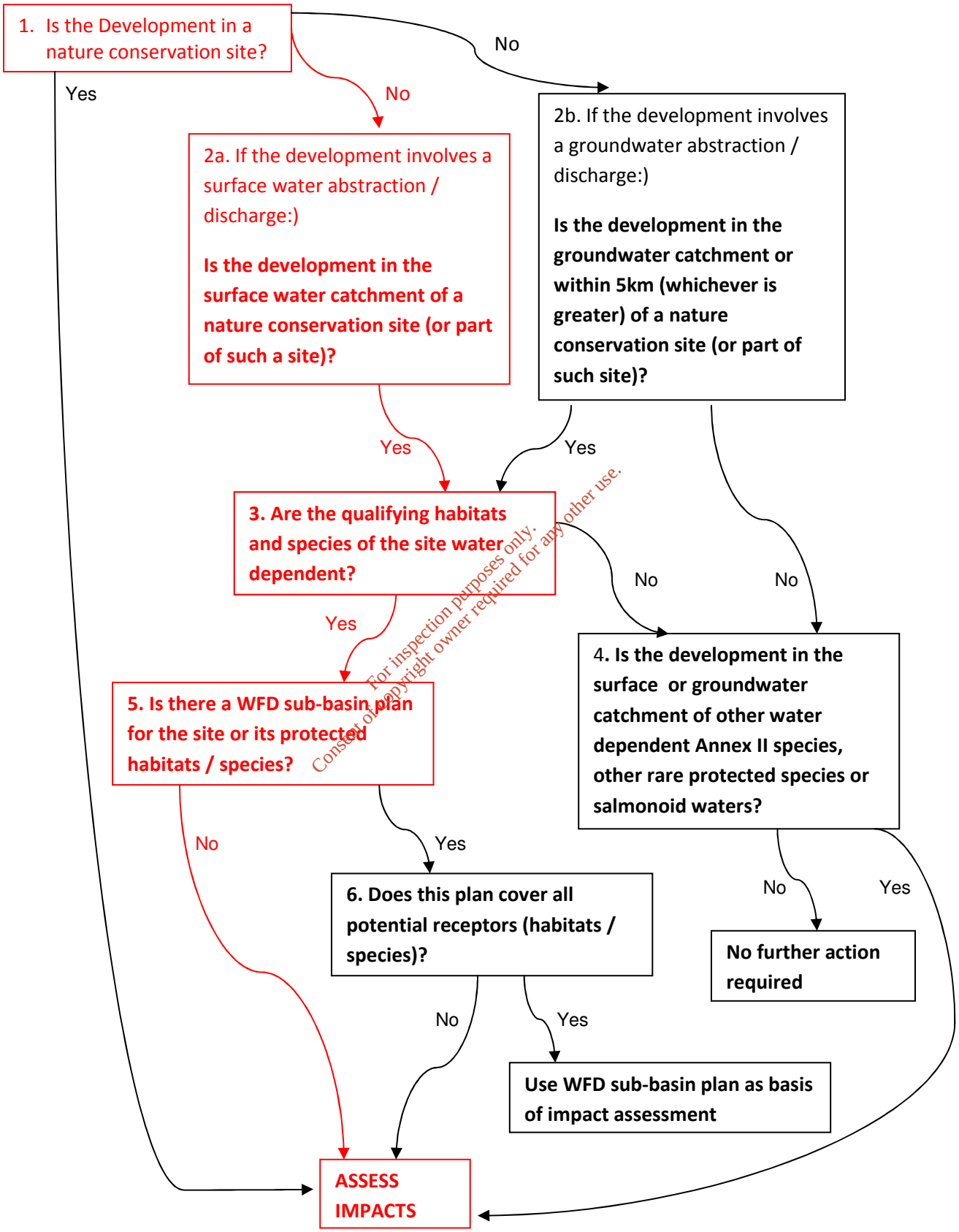
The principle impacts on water quality in the Saint Clerans River due to discharges from the WWTW are demonstrated by the samples taken upstream and downstream of the primary discharge point. The average changes in levels of substances within the river recorded over the last twelve months are as follows:

BOD	– 2.4mg/l increase;
Suspended Solids	– 2.4mg/l increase;
Ammonia (as N)	– 2.4mg/l increase;
Ortho-phosphates (as P)	– 0.08mg/l increase.

Stormwater flows have placed additional pressure on the capacity at Loughrea WWTW, which results in frequent stormwater overflows from the primary discharge point. This could have implications for the effect on water quality downstream of the WWTW. As stated above, the water quality in the Saint Clerans River is already poor and works are presently underway at Loughrea WWTW to improve the capacity at the works which will greatly reduce the frequency of stormwater overflows into the river. These works will also ensure that the treatment plant operates to meet the quality requirements set out in the Urban Waste Water Treatment Directive. There is an additional storm overflow discharging from the sewer network at overflow SW2. Galway County Council are currently at detailed design stage for works which will result in the decommissioning of this overflow.

There are no known drinking water abstraction points associated with the receiving waters downstream of the discharge points. The water source for Craughwell village is the Loughrea Water Supply Scheme, which abstracts its water from Lough Rea, upstream of the WWTW. The water source for Kilcolgan and Clarinbridge is the Athenry Water Supply Scheme. Both of these water sources are unaffected by discharges from the WWTW.

Natura 2000 Screening Protocol



Attachment G.1 – Compliance with Council Directives

The relevant section of the latest Water Services assessment of needs (dated 2009) for Galway County Council is attached. It outlines the programme of Improvements for the Loughrea Main Drainage Scheme and the Phase 3 WWTP upgrade. Significant improvement and upgrade works have already been completed at the WWTW site to increase the capacity from 5,000 PE to 9,500 PE. The future proposed works will involve further upgrading within the WWTW site and improvement works to the sewerage network which is presently overloaded, with significant volumes of stormwater entering the treatment works.

It should also be noted that the water services assessment of needs has a programme allocation of €8.756m for these upgrades, with the works scheduled to take place in 2010.

The final effluent from the WWTP discharges to the Saint Clerans River at a point approximately 200m north-west of the plant. This discharge is predominantly a treated effluent with occasional untreated effluent also discharged as a result of stormwater overflows. Current emission levels from this primary discharge point are capable of operating to a discharge standard of 20/30 BOD/SS with Phosphorus level of less than 2mg/l. The average quality of final effluent from the plant over the last twelve months was 5.5mg/l BOD, 18mg/l SS and 0.36mg/l Total P, which are well below the target limits. The average recorded levels of these substances at the discharge point are 15mg/l BOD and 21mg/l SS, which are still within the acceptable range.

capacity from 2,500P.E. to 3,500 P.E., and Phase 2 increased the capacity further to 6,000 P.E. The next phase will increase the capacity of the treatment works to 9,000 P.E. and will replace and upgrade many sections of hydraulically overloaded and structurally deficient sewers. There are a number of residential developments in Athenry town that are currently served by on-site treatment systems. Athenry Town is located on an aquifer of high to extreme vulnerability. In addition, the WRBD cite the groundwater to be of poor status. These private schemes can not connect to the public sewerage system until such time as the full capital scheme is complete. A new Design Review report will be prepared to include for the works already completed and to quantify the remaining works required.

Estimated Cost: €11.6M **Timeframe for Delivery: 2010**

Priority No. 4: Loughrea SS

As for Athenry SS, the treatment works at Loughrea has been upgraded and is currently being completed. The capacity of the treatment plant was increased from 5,000 P.E. to 9,500 P.E. The works had been overloaded by approximately 1,700 P.E., and complaints had been reported to the EPA with regard to malodours at the adjacent golf course. The existing sludge management facilities required work also to address their contribution to the odour problem at the plant. Prior to works being carried at the treatment plant, the majority of effluent samples were not compliant. The treatment plant discharges to the St. Cleran's River, which flows into the Kilcolgan River and onto the Dunkellin River. The EPA have recorded a Q value of 4 about 3km downstream of the plant in 2006. However, water samples taken just downstream of the discharge point in 2008 showed elevated levels of organic matter and nutrients.

A detailed report in relation to the work carried out to date has been submitted to the Department. A Design Review, which will include details on the proposed sewer network upgrade will be submitted to the Department before the end of 2009. The existing network is hydraulically overloaded in places and there is a substantial volume of infiltration arriving at the treatment works.

Estimated Cost: €8.756M **Timeframe for Delivery: 2010**

Priority No. 5: Oughterard SS

Oughterard SS treatment works discharges effluent to the Owenriff River at point about 390m from its confluence with Lough Corrib. The Owenriff is a world renowned habitat of Freshwater Pearl Mussel. The existing works is overloaded and