SS.

Energy, Environment & Safety

13th February 2012

Ms Anne Bolger
Office of Licensing, Guidance and Resource Use
Environmental Protection Agency
Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

Re: Glanbia Ingredients (Virginia) Ltd,
Burrenrea, Kells Road, Virginia, Co. Cavan
IPPCL Reg. No. P0405-02

Dear Ms Bolger,

Please find enclosed completed documentation relating to the Licence Review for Glanbia Ingredients (Virginia) Ltd. (IPPCL Reg. No. P0405-02).

The review initiated by the Agency is to bring the facilities IPPC into compliance with recent amendments to legislation on:

1. European Communities Environmental Objectives (Surface Waters) Regulations 2009
2. European Communities Environmental Objectives (Groundwater) Regulations 2010

The information and data enclosed has been based on the Licence Review form and Guidance Note for the purposes EC Environmental Objectives (Surface Waters) Regulations 2009.

As requested by the Agency, one signed original, one hard copy and two copies on CD-ROM in searchable PDF format have been enclosed.

Please do not hesitate to contact me if you have any questions with respect to any of the above.

Yours Sincerely,

Rory Ferguson

Rory Ferguson
Environmental Consultant

Cc. Daniel Mulryan (Glanbia Ingredients Virginia Ltd.)

FBD House, Fels Point, Tralee, Co.Kerry
p: 066 7128321 **f:** 066 7180061 **e:** info@oes.ie **w:** www.oes.ie

Glanbia Ingredients (Virginia) Ltd.
IPPCL Reg. No. P0405-02

Integrated Pollution Prevention and Control (IPPC)/Waste Licensing

Review Form and Guidance Note

for the purposes of

EC Environmental Objectives (Surface Waters) Regulations 2009

EPA Reg. Nº: *(Office use only)*	

Environmental Protection Agency
P.O. Box 3000, Johnstown Castle Estate, Co. Wexford
Lo Call: 1890 335599 Telephone: 053-9160600 Fax: 053-9160699
Web: www.epa.ie Email: info@epa.ie

INTRODUCTION

This Form is for the purposes of a review of an IPPC/Waste Licence in order to ensure that all authorisations under the *EPA Act 1992 to 2007* and the *Waste Management Acts 1996 to 2010* having discharges liable to cause water pollution are in compliance with the *EC Environmental Objectives (Surface Waters) Regulations 2009*.

While every effort has been made to ensure the accuracy of the material contained in the Review Form, the EPA assumes no responsibility and gives no guarantees, undertakings and warranties concerning the accuracy, completeness or up-to-date nature of the information provided herein and does not accept any liability whatsoever arising from any errors or omissions.

The Review Form and all supporting information shall be submitted to the Headquarters of the Agency in a format of a signed original, one hardcopy and two copies on CD-Rom. In cases where an Environmental Impact Statement (EIS) is required in support of the Review Form, a signed original, one hardcopy plus 16 copies (or 18 copies if the activity is within Energy sector) on CD-Rom shall be submitted.

All pages, including maps/drawings/plans, shall be no larger than A3 size. All files on CD-Rom shall be submitted in searchable PDF format and be no larger than 10MB each in size. All CD-Roms shall be labelled with the Licensee's name, Licence Register Number, address of the activity and name of the file (i.e. Review Form).

CONTENTS

SECTION A: GENERAL

A.1 Licensee

Name*:	Glanbia Ingredients (Virginia) Ltd.
Address:	Burrenrea,
	Kells Road,
	Virginia
	Co. Cavan
Tel:	049-8549000
Fax:	056-7750687
e-mail:	dmulryan@glanbia.ie

* This should be the name of the Licensee which is current on the date this IPPC/Waste Licence Review Form is lodged with the Agency. It should be the name of the legal entity (which can be a limited company or a sole trader). A trading/business name is not acceptable.

Name and Address for Correspondence

Only documentation submitted by the Licensee and by the nominated person will be deemed to have come from the Licensee.

Name:	Glanbia Ingredients (Virginia) Ltd.
Address:	Burrenrea,
	Kells Road,
	Virginia
	Co. Cavan
Tel:	049-8549000
Fax:	056-7750687
e-mail:	dmulryan@glanbia.ie

Address of registered or principal office of Body Corporate (if applicable)

Address:	Glanbia PLC,
	Glanbia House,
	Kilkenny, Ireland
Company Register No.	129933
Tel:	056-7772200
Fax:	056-7772303
e-mail:	info@glanbia.ie

A.2 Location of Activity

Name:	Glanbia Ingredients (Virginia) Ltd.
Address*:	Burrenrea,
	Kells Road,
	Virginia
	Co. Cavan
Tel:	049-8549000
Fax:	056-7750687
Contact Name:	Daniel Mulryan
Position:	Environmental Manager
e-mail:	dmulryan@glanbia.ie

* Include any townland.

National Grid Reference (12 digit 6E,6N)	Irish Grid: 262548E 285437N

Location maps (no larger than A3), appropriately scaled, with legible grid references are enclosed in **Attachment Nº A.2**. The site boundary is outlined on the map in red colour.

Geo-referenced digital drawing files (e.g. AutoCAD files) in Irish Grid projection of the site boundary and overall site plan, including labelled emission points to surface water and their monitoring and sampling locations, are also included.

SECTION B: EMISSIONS

B.1 Emissions to Surface Waters

Describe the nature of emissions from the activity to receiving surface waters. Specify which of these emissions are process discharges and storm/surface water discharges.

Tables B.1(i) and B.1(ii) are completed.

The applicant should address in particular any emission point where the substances listed in the Schedule of S.I. No. 394 of 2004 are emitted.

Please note that monitoring of the discharge(s) for the purposes of Table B.1(ii) shall be undertaken for the list of parameters listed in Table D.1(i) as appropriate. Where other relevant substances have been identified, during the Assessment of Impact on Receiving Surface Water requested under Section D.1 of this Review Form, monitoring of the discharge upstream and downstream for the relevant parameters shall also be included.

A summary list of the emission points, together with maps/drawings (no larger than A3) and supporting documentation are included as **Attachment Nº B.1**.

B.2 Tabular Data on Emission Points to surface water

Licensees should submit the following information for each emission point to surface water:

Point Code	Easting	Northing	Verified	Emission
Provide label ID's (e.g. SW1, SW2*)	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used	e.g. Ammonia (as N), Biochemical oxygen demand

* SW = Surface Water

An individual record (i.e. row) is required for each emission point. Acceptable file formats include Excel, Access or other upon agreement with the Agency.

SECTION C: CONTROL & MONITORING

Describe the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the installation/facility.

C.1 Treatment, Abatement and Control Systems

An overview/summary of treatment/abatement systems for effluent emissions is included.

For each Surface Water Emission Point identified Table C.1(i) is completed.

Supporting information forms **Attachment Nº C.1**.

Normal operation and variations for start-up and shutdown should be described. Anticipated malfunctions and known problems associated with the treatment should be highlighted.

Proposed monitoring to be undertaken for influent(s) to treatment plant, and in-treatment monitoring required for the management of the treatment plant should be detailed.

C.2 Monitoring and Sampling Points

Identify monitoring and sampling points and outline proposals for monitoring emissions to surface water bodies.

Table C.2(i) is completed (where relevant) for emissions to surface water.

Where ambient environment monitoring is carried out or proposed, Table C.2(ii) is completed as relevant for each environmental medium and at least 12 samples are taken at regular intervals.

Details of monitoring/sampling locations and methods are included.

Supporting information is included in **Attachment Nº C.2**

C.3 Tabular Data on Monitoring and Sampling Points

Licensees should submit the following information for each monitoring and sampling point:

Point Code	Point Type	Easting	Northing	Verified	Pollutant
Provide label ID's	M=Monitoring S=Sampling	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used	e.g. Ammonia (as N), Biochemical oxygen demand

An individual record (i.e. row) is required for each monitoring and sampling point. Acceptable file formats include Excel, Access or other upon agreement with the Agency.

Point source monitoring/sampling refers to monitoring from specific emission points (e.g. from a wastewater treatment plant). Ambient monitoring includes monitoring of river quality upstream/downstream of an effluent discharge.

SECTION D: EXISTING ENVIRONMENT & IMPACT OF THE ACTIVITY

D.1 Assessment of Impact on Receiving Surface Water

Describe the existing environment in terms of water quality with particular reference to environmental quality objectives and standards as specified in the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009*. Table D.1(i) should be completed as appropriate.

Indicate whether or not the activity complies with the requirements of the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009*.

The Licensee should conduct an assessment of impact of discharge(s) from the installation/facility on receiving surface water. In undertaking this assessment the Licensee shall have particular regard to substances used in the manufacturing processes likely to result in discharges. The licensee shall have regard for the environmental quality objectives and standards specified for protected areas and/or the standards specified in the Schedules of the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009*. When completing any assimilative capacity calculations have regard to the Water Services Training Group *'Guidance to Applicant – Discharge to Surface Waters'* available at http://www.wsntg.ie/publications/index.asp and other standard guidance.

If the process discharges are to coastal, transitional waters or lakes, the assessment may require a modelling study. The modelling study shall include estimates on what the resultant concentrations of the permitted substances in the receiving water body will be upon discharge at the current licence limits.

Regardless of the receiving water body type, determine the maximum allowable discharge concentrations to achieve compliance with the 95%ile good status limits. N.B. If the discharge is to a water body that is already achieving high status, or if the discharge is to waters draining to the surface water bodies identified under the First Schedule of the *EC Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009*, compliance must be with 95%ile **high** status limits.

State distance from the process discharges to a nearest downstream water dependent Protected Area. Include the name and code of this Protected Area.

Full details of the assessment, including a copy of an Environmental Impact Statement if it was required for the purposes of obtaining planning permission(s), are submitted as **Attachment Nº D.1.1**.

Where necessary, the Licensee has supplied detailed information on the proposals to comply with the requirements of the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009* including a detailed timeframe for any proposed works in **Attachment Nº D.1.2**.

D.2 Environmental Considerations and Best Available Techniques (BAT)

Describe, in outline, the main alternatives, if any, to the proposals contained in the Review Form.

Describe any environmental considerations which were made with respect to the use of cleaner technologies, waste minimisation and raw material substitution.

Describe the measures proposed or in place to ensure that:

(a) the best available techniques are or will be used to prevent or eliminate or, where that is not practicable, generally reduce an emission from the activity;

(b) no significant pollution is caused;

(c) waste production is avoided in accordance with *Council Directive 75/442/EEC of 15 July 1975 on waste*; where waste is produced, it is recovered or, where that is technically and economically impossible, it is disposed of while avoiding or reducing any impact on the environment;

(d) energy and other resources are used efficiently;

(e) the necessary measures are taken to prevent accidents and limit their consequences; and,

(f) the necessary measures are taken upon definitive cessation of activities to avoid any pollution risk and return the site of operation to a satisfactory state.

This section should present a statement on energy efficiency at the site to include, where appropriate, an energy audit with reference to the *EPA Guidance document on Energy Audits*. Licensees should have regard to Section 5 of the *EPA Acts 1992 and 2003* in selecting BAT and in particular the following:

- The use of low-waste technology;
- The use of less hazardous substances;
- The furthering of recovery and recycling of substances generated and used in the process and of waste where appropriate;
- Comparable processes, facilities or methods of operation, which have been tried with success on an industrial scale;
- Technological advances and changes in scientific knowledge and understanding;
- The nature, effects and volume of the emissions concerned;
- The commissioning dates for new or existing facilities;
- The length of time needed to introduce the BAT;
- The consumption and nature of raw materials, including water, used in the process and their energy efficiency;
- The need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it;
- The need to prevent accidents and to minimize the consequences for the Environment; and,
- The information published by the Agency in the form of sectoral BAT Guidance documents and the relevant BREF documents published by the EC (available for download at http://eippcb.jrc.es/ and at www.epa.ie).

SECTION E: STATUTORY REQUIREMENTS

E.1 Best Environmental Practices – Compliance with Legislation

Demonstrate if the best environmental practices are in place for control of diffuse emissions from the installation/facility as set out in the following legislation:

(a) a specification prepared by the Agency in accordance with Section 5 of the *Environmental Protection Agency Act 1992* as amended by Section 7 of the *Protection of the Environment Act 2003*;

(b) the *Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001)* as amended by the *Urban Waste Water Treatment (Amendment) Regulations 2004 (S.I. No. 440 of 2004)* or any future amendment thereof;

(c) the *European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2009 (S.I. No. 101 of 2009)* or any future amendment thereof;

(d) the *Local Government (Water Pollution) Act, 1977 (Control of Cadmium Discharges) Regulations 1985 (S.I. No. 294 of 1985)*;

(e) the *Local Government (Water Pollution) Act, 1977 (Control of Hexachlorocyclohexane and Mercury Discharges) Regulations 1986 (S.I. No. 55 of 1986)*;

(f) the *Local Government (Water Pollution) Acts, 1977 and 1990 (Control of Carbon Tetrachloride, DDT and Pentachlorophenol Discharges) Regulations 1994 (S.I. No. 43 of 1994)*; and,

(g) measures or controls identified in a pollution reduction plan for the river basin district prepared in accordance with Part V of the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009* for the reduction of pollution by priority substances or the ceasing or phasing out of emissions, discharges and losses of priority hazardous substances.

SECTION F: APPROVED ADJUSTMENTS & CONDITIONS

Where the Office of Environmental Enforcement (OEE) of the Agency has agreed any variations or adjustments to the conditions of the existing licence, the licensee must supply a schedule detailing these agreed variations and adjustments to the existing licence conditions. An updated, scaled drawing of the site layout (no larger than A3) providing visual information on such adjustments or variations where appropriate should be included.

In the case of once-off assessments/ reports required under conditions of the existing licence the licensee must supply a schedule detailing those assessments/ reports that have been completed and agreed with the Office of Environmental Enforcement (OEE) or as otherwise agreed.

Attachment Nº F1 includes the schedule of variations and/or adjustments together with the updated drawing.

Condition No.	Existing Condition	Proposed Wording (where appropriate)	OEE Agreement Reference	Description

SECTION G: DECLARATION

Declaration

I certify that the information given in this Review Form is truthful, accurate and complete.

I give consent to the EPA to copy this Review Form for its own use and to make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA and via the EPA's website. This consent relates to this Review Form itself and to any further information, submission, objection, or submission to an objection whether provided by me as Licensee, any person acting on the Licensee's behalf, or any other person.

Signed by: D. Mulryan **Date:** 20/01/2012
(on behalf of the organisation)

Print signature name: Daniel Mulryan.

Position in organisation: Environmental Manager

Company stamp or seal:

GLANBIA INGREDIENTS VIRGINIA LTD.
VIRGINIA, CO. CAVAN.

ANNEX 1: TABLES/ATTACHMENTS

TABLE B.1(i): EMISSIONS TO SURFACE WATERS (One page for each emission)

Emission Point:

Emission Point Ref. No.:	***EF7***
Source of Emission:	***WWTP***
Location :	***Adjacent to Clarifier (Ref: Attachment No. A.2, Drawing No. 4)***
Grid Ref. (12 digit, 6E,6N):	***Irish Grid: 262499E 285277N***
Name of receiving waters:	***Lough Ramor***
Flow rate in receiving waters:	**N/A - Receiving water body is a lake** ***N/A*** $m^3.sec^{-1}$ Dry Weather Flow ***N/A*** $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume to be emitted			
Normal/day	1000 m^3	Maximum/day	1400m^3
Maximum rate/hour	60m^3		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	***60*** min/hr ***24*** hr/day ***365*** day/yr

Emission Point:

Emission Point Ref. No.:	***EF6***
Source of Emission:	***Cooling Water, Surface Water and Condensate***
Location :	***Manhole on Storm Water Line d/s of ES1 (Ref: Attachment No. A.2, Drawing No. 4)***
Grid Ref. (12 digit, 6E,6N):	***Irish Grid: 262516E 285269N***
Name of receiving waters:	***Lough Ramor***
Flow rate in receiving waters:	**N/A - Receiving water body is a lake** ***N/A*** $m^3.sec^{-1}$ Dry Weather Flow ***N/A*** $m^3.sec^{-1}$ 95%ile flow

Emission Details:

(i) Volume to be emitted			
Normal/day	*1100 m^3	Maximum/day	*7750m^3
Maximum rate/hour	700m^3		

*Rainfall Dependant

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	**Overall Volume is Rainfall Dependant**	***60*** min/hr	***24*** hr/day	***365*** day/yr

TABLE B.1(ii): EMISSIONS TO SURFACE WATERS - Characteristics of the emission (One table per emission point)

Emission Point Reference Number: ***EF7***

Parameter	Prior to treatment				As discharged				% Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	
pH					6-9				
COD									
BOD					20	20	28	10220	
Suspended Solids					30	30	42	15330	
Nitrates (as N)									
Total Ammonia (as N)					1	1	1.4	511	
Total Phosphorous (as P)					1	1	1.4	511	
Orthophosphate									
Detergents									
Fats, Oils & Grease					10	10	14	5110	
Total Nitrogen (as N)					15	15	21	7665	

TABLE C.1(i): ABATEMENT/TREATMENT CONTROL

Emission Point Reference Number: ***EF7***

Control [1] parameter	Equipment [2]	Equipment maintenance	Equipment calibration	Equipment back-up	Monitoring to be carried out [3]	Monitoring equipment	Monitoring equipment calibration
Balancing: Flow	Forward feed pumps	Maintenance as manufacturer specification	Calibration as manufacturer specification	Spares / replacements			
Aeration Tanks: Dissolved Oxygen	Surface Aerators	Maintenance as manufacturer specification	Calibration as manufacturer specification	Spares / replacements			
Phosphorus Removal	Dosing Pumps	Maintenance as manufacturer specification	Calibration as manufacturer specification	Spares / replacements			

[1] List the operating parameters of the treatment/abatement system which control its function.
[2] List the equipment necessary for the proper function of the abatement/treatment system.
[3] List the monitoring of the control parameter to be carried out.

TABLE C.2(i): EMISSIONS MONITORING AND SAMPLING POINTS (One table per monitoring point)

Emission Point Reference Number: ***EF7***

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
Flow	Continuous	Designated Sampling Point	Flow Meter	On-Line flow meter with recorder
pH	Continuous	Designated Sampling Point	pH Probe	pH electrode/meter and recorder
Temperature	Continuous	Designated Sampling Point	Temperature Probe	Temperature probe with recorder
Biochemical Oxygen Demand	Weekly	Designated Sampling Point	Grab Sample	Standard Method
Suspended Solids	Weekly	Designated Sampling Point	Grab Sample	Standard Method
Total Nitrogen (as N)	Weekly	Designated Sampling Point	Grab Sample	Standard Method
Nitrates (as N)	Weekly	Designated Sampling Point	Grab Sample	Standard Method
Ammonia (as N)	Weekly	Designated Sampling Point	Grab Sample	Standard Method
Total Phosphorus (as P)	Weekly	Designated Sampling Point	Grab Sample	Standard Method
Oils, Fats & Grease	Weekly	Designated Sampling Point	Grab Sample	Standard Method

Emission Point Reference Number: ***EF6***

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
Flow	Continuous	Designated Sampling Point	Grab Sample	On-line flow meter with recorder
pH	Continuous	Designated Sampling Point	Grab Sample	pH electrode/meter and recorder
Temperature	Continuous	Designated Sampling Point	Grab Sample	Temperature probe with recorder
Biochemical Oxygen Demand	Weekly	Designated Sampling Point	Grab Sample	Standard Method
Suspended Solids	Weekly	Designated Sampling Point	Grab Sample	Standard Method
Ammonia	Weekly	Designated Sampling Point	Grab Sample	Standard Method
Total Phosphorus (as P)	Weekly	Designated Sampling Point	Grab Sample	Standard Method

TABLE C.2(ii): AMBIENT ENVIRONMENT MONITORING AND SAMPLING POINTS (One table per monitoring point)

Monitoring Point Reference Number: **Lough Ramor (Sample Point A - Upstream)**

IPPC Licence P0405-01 requires that Total Phosphorus monitoring of the lake is carried out.

Glanbia Ingredients (Virginia) Ltd. carry out weekly monitoring of the below parameters.

For the purposes of this review long term monitoring data collected by Glanbia Ingredients (Virginia) Ltd. is used.

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method/ technique
Total Phosphorus (as P) pH BOD Odour / Visual Inspection	Weekly	Access from River Bank	Grab	Standard Methods

Table D.1(i) RECEIVING WATER SURFACE WATER QUALITY

Monitoring Point/Grid Reference: **Lough Romor (Sample Point A – Upstream) (262287E 285346N)**

Parameter	Results [1] (mg/l)												Sampling method (grab, drift etc.)	Normal Analytical Range	Analysis method/ technique
	21/12/11	07/12/11	09/11/11	26/10/11	19/10/11	16/10/11	05/10/11	11/03/11	04/11/10	10/02/10	07/08/08	14/11/07			
pH	7.7	7.8	7.6	7.4	7.7	8.3	7.8	7.7	7.8	7.7	7.8	7.9	Grab		PH probe
Temperature													Grab		Thermometer
Total Ammonia	0.05	0.05	0.03	0.06	0.04	0.1	0.09						Grab		Standard Methods
Chemical oxygen demand	45	21	52	45	23	26	23						Grab		Standard Methods
Biochemical oxygen demand	<2	<2	<2	<2	<2		<2	<2	<2	<2	<2	<2	Grab		Standard Methods
Dissolved oxygen DO													Grab		Standard Methods
Total Nitrogen (as N)	<1	1	1.3	1.4	1.2	<1	<1	1.78	<1	2	1.3	<1	Grab		Standard Methods
Nitrite (as N)	<0.03	<0.03	<0.02	<0.02	<0.02	<0.02	<0.02						Grab		Standard Methods
Nitrate (as N)	1.2	1.11	0.87	0.87	0.46	<0.2	<0.2						Grab		Standard Methods
Total Phosphorous (as P)	<0.05	0.06	0.05	0.09	0.08	0.06	0.06	0.05	0.1	<0.05	0.1	0.08	Grab		Standard Methods
Orthophosphate (as P)			0.04	0.04	0.03	0.01	<0.01						Grab		Standard Methods
Suspended Solids								5	6	<5	<5	<5	Grab		Standard Methods

[1] At least 12 samples should be taken at regular intervals.

Note: Samples collected from November 2007 to March 2011 were not analysed for ammonia.

Provide summary of the monitoring results

Glanbia Ingredients (Virginia) Ltd.

IPPCL Reg. No. P0405-02

Integrated Pollution Prevention and Control (IPPC) Licence Review for the purposes of EC Environmental Objectives (Surface Waters) Regulations 2009

Attachments

Attachment N^{o} A.2

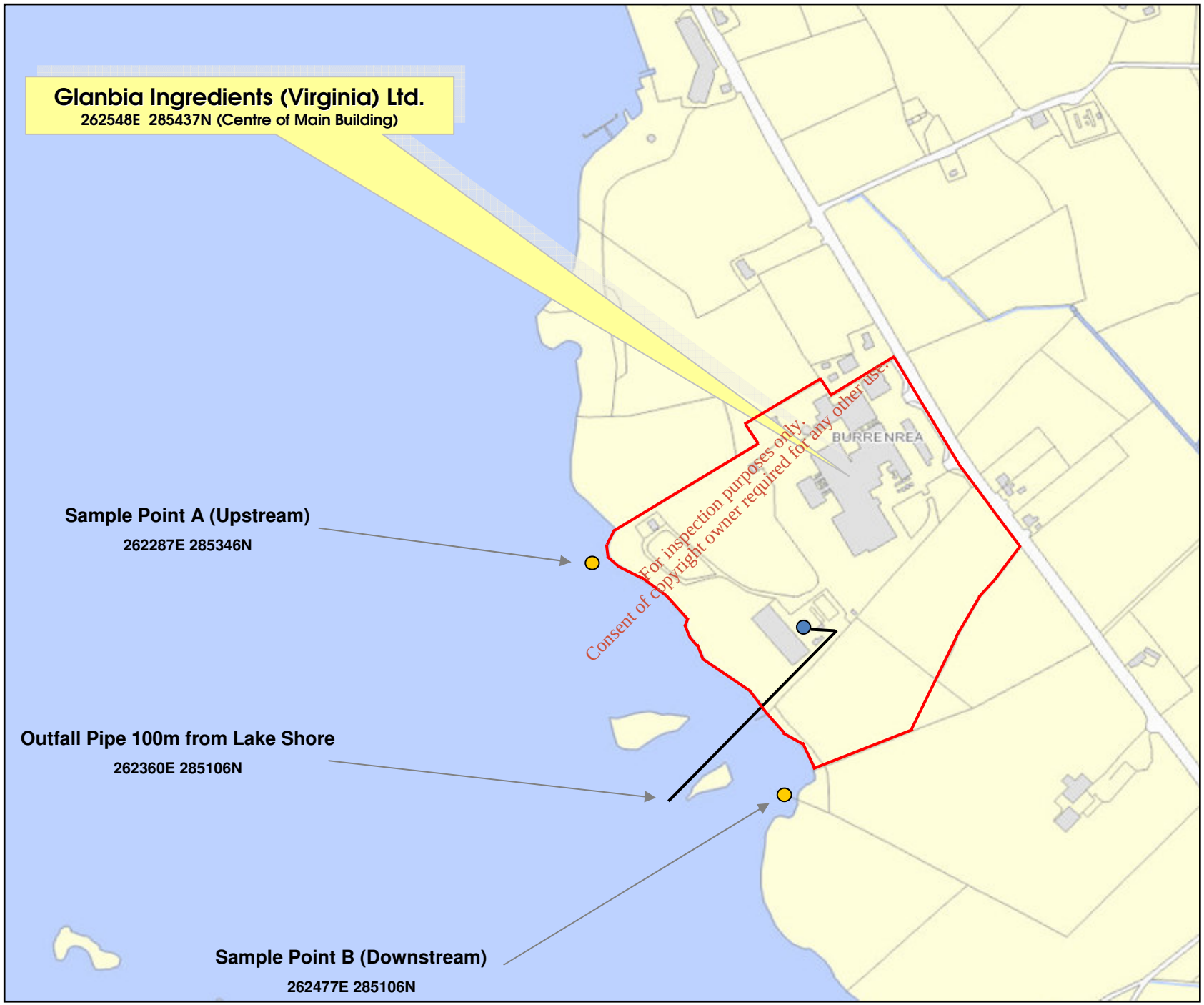
Drawings

Legend

Site Location

Client:	Glanbia Ingredients (Virginia) Ltd
Project:	IPPC Licence Review
Map Title:	Site Location Map 1
Scale:	1:50,000 @ A3 Paper Size
OES Ref:	1077_09
Revision:	01
Document Control:	Drawn By: TQ Checked By: RF Approved By: PO'L Date: 07/02/2012

OES Consulting
2nd Floor
FBD House
Fels Point
Tralee
Co Kerry



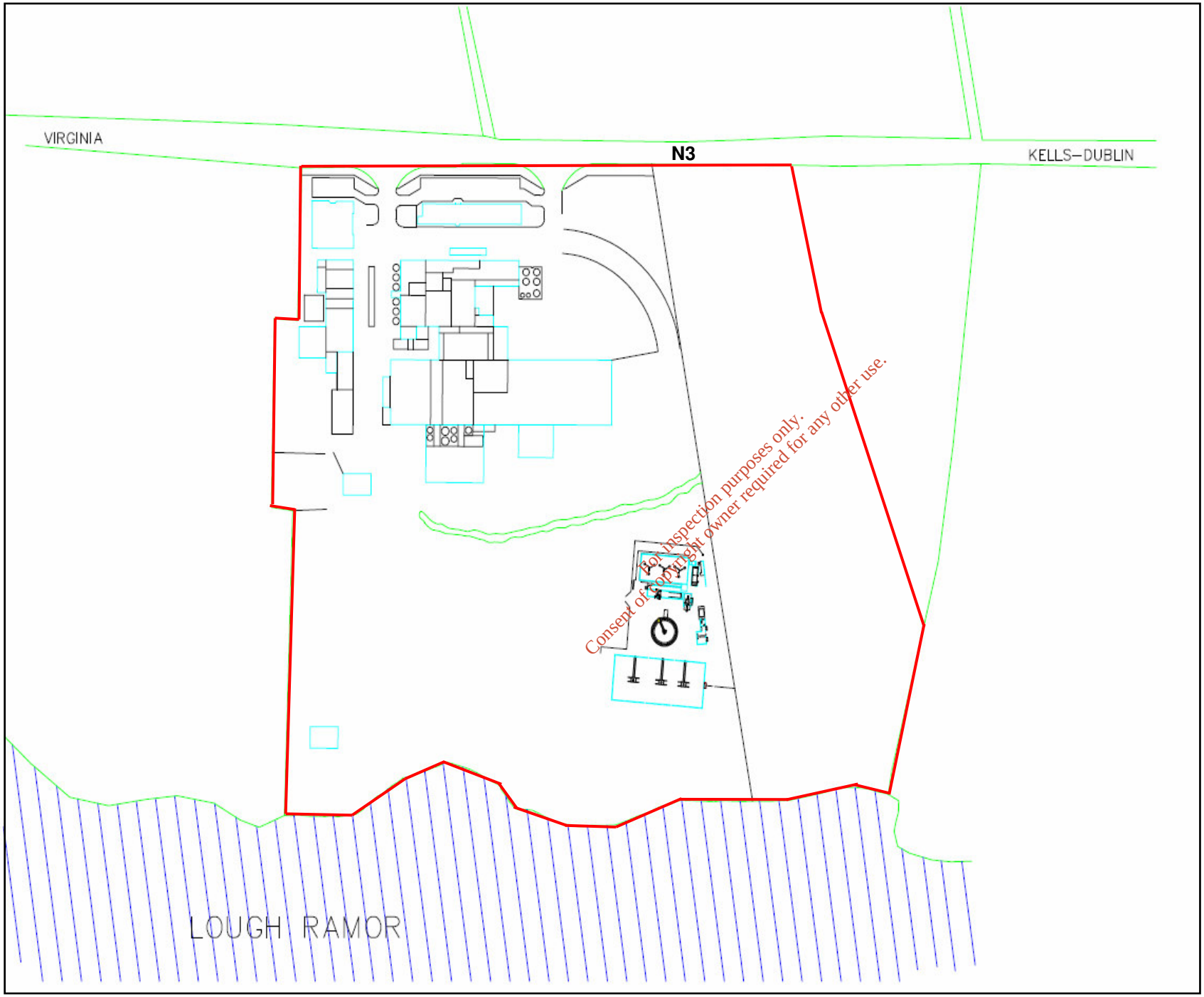
Legend

- Sample Locations
- WWTP Location
- Site Boundary

Client: Glanbia Virginia
Project Code: 1077_09
Title: Site Location & Boundary
Drawing No: 2
Issue Date:
Revision:1
Scale: Not to Scale

OES
FBD House, Fels Point,
Tralee, Co. Kerry Ireland
P: 066-712 83 21 W: oes.ie

Energy, Environment & Safety



Legend

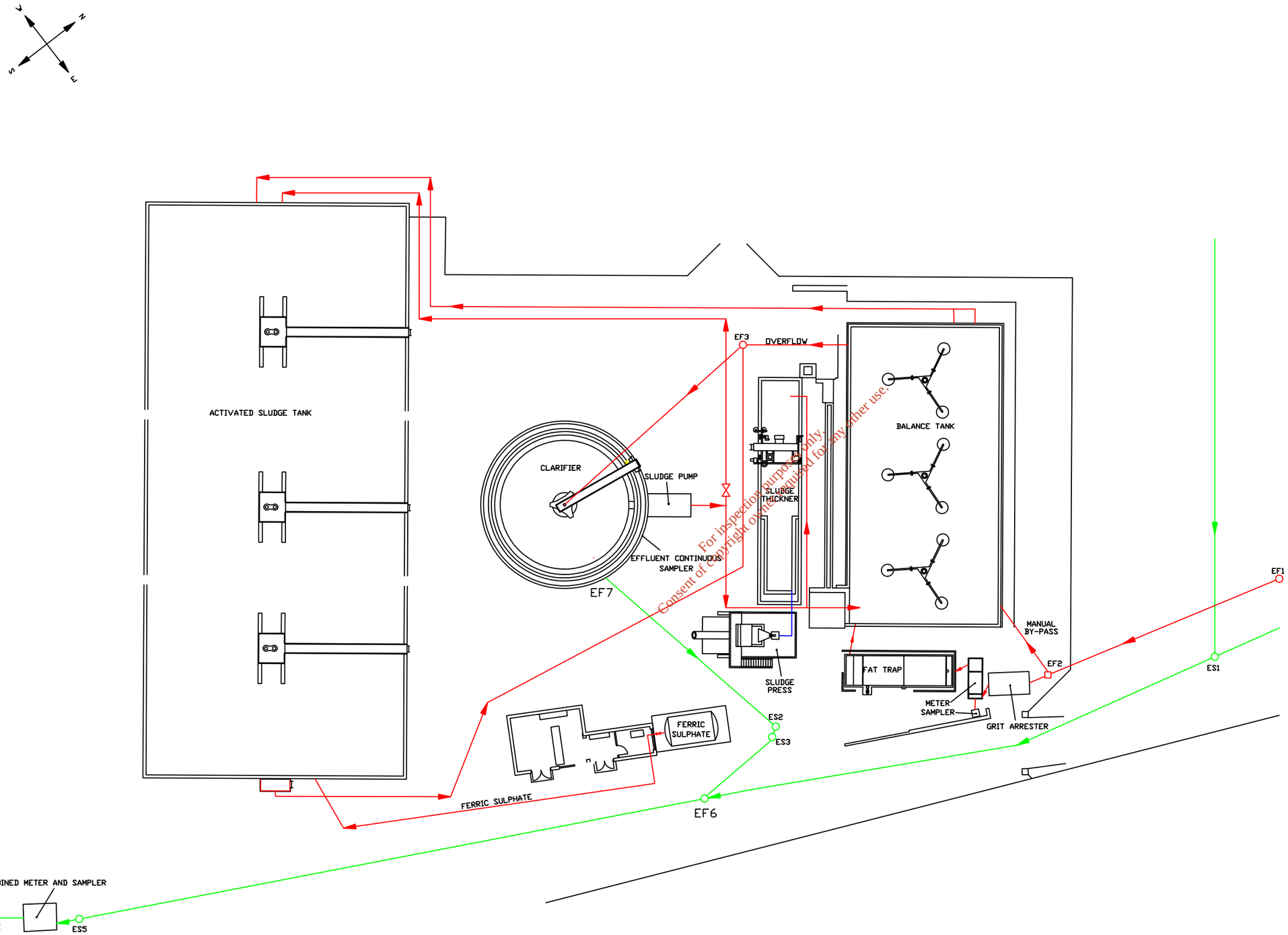
Site Boundary

Client: Glanbia Virginia
Project Code: 1077_09
Title: Site Plan & Boundary
Drawing No: 3
Issue Date:
Revision:1
Scale: Not to Scale

OES
FBD House, Fels Point,
Tralee, Co. Kerry Ireland
P: 066-712 83 21 W: oes.ie

Energy, Environment & Safety

Notes:



Rev.	Date	Description	by	ch'd	app
0	27/01/12	New Drawing	R.F	R.F	P.O'L

Project
1077_09 Glanbia Virginia

Title
WWTP Layout

Energy, Environment & Safety
environmental health and safety engineering project management

Tel.: 353 (0)667128321 Fax: 353 (0)667180061 Email: info@oes.ie

Scales Not to scale	Drg. No. 4	Rev. 0
Drawn By. R.F		
Ch'd (D.O.)		
Ch'd (Eng.)		
Approved		

Attachment N^{o} B.1

Emissions to Surface Waters

Attachment N^{o} B.1

Emissions to Surface Waters

INTRODUCTION

Glanbia Ingredients (Virginia) Ltd. (GV) uses approximately 1,050m^3 per day of treated lake water from Lough Ramor. GV also sources water from an onsite borehole for drinking water only. The treated waste water from the site is subsequently discharged at an average rate of 1000m^3/day via the effluent plant. The outfall pipe is located 100m from the lake shore.

SOURCES OF EFFLUENT

Process Waste Water (EF7)

Waste water on site is primarily generated through washdown activities of tanks, silos, bays, evaporators, pasteurizers, dryers, lines and yard areas throughout the plant.

At GV the effluent essentially consists of the following:

- Diluted Whole Milk
- Diluted Cream
- Diluted Skim Milk
- Diluted Caustic
- Diluted Acid
- Vegetable Oil

Also included would be diluted cleaning chemicals, diluted laboratory chemicals, grit form drains etc.

Process waste water is treated at the on-site Waste Water Treatment Plant prior to discharge via an outfall pipe 100m from the shore of the Lough Ramor.

Surface Water (EF6)

Surface (storm) water run-off from roof and yard areas, cooling water and condensate are diverted to storm water drains which join up with the WWTP effluent (post treatment) and discharge via an outfall pipe 100m from the shore of the Lough Ramor.

Locations of discharge points is Tabulated on Table B.2.

B.2 Tabular Data on Emission Points to surface water

Point Code	Easting	Northing	Verified	Emission
Outfall pipe 100m from lake shore	262360	285106	No	Treated Waste Water from WWTP combined with Surface Water, Cooling Water & Condensate.

Note: This refers to the actual location of the discharge in Lough Ramor (Ref: Attachment No.A.2, Drawing No.2)

Attachment N^{o} C.1

Treatment, Abatement and Control Systems

Attachment N^{o} C.1

Treatment, Abatement and Control Systems

Effluent arising from production activities at GV discharges to Lough Ramor, following treatment at an effluent treatment plant. The effluent treatment plant is situated in the South East corner of the site. It is 190m from the road and 50m from the lake shore.

Introduction to Effluent Treatment Plant:

At GV the effluent essentially consists of:

- Diluted Whole Milk
- Diluted Cream
- Diluted Skim Milk
- Diluted Caustic
- Diluted Acid
- Vegetable Oil

Also included would be diluted cleaning chemicals, diluted laboratory chemicals, grit from drains etc.

The plant is differentiated into 3 main zones:

1. Gilbey Cream Plant
2. Milk Intake
3. Driers

Effluent from each of these areas is monitored en route to the treatment plant by a flow proportional sampler.

The following is a brief description of the various stages in the process.

Grit Removal:

Any grit or sand particles are allowed to settle by gravity in the grit chamber, thus preventing damage to the pumps and accumulation further in the process.

Monitoring:

The de-gritted effluent passes through a flow meter with a flow related sampler. Thus the total volume of effluent per day and a representative composite sample can be taken. There is also a TOC meter which is primarily for losses control.

Balance Tank:

After grit removal the effluent flows to the balance tank. This ensures that the raw effluent is well mixed before it goes to the aeration tank and that any concentrated COD loadings or pH levels are diluted. In addition it balances the flow to the aeration tank.

Aerator and Clarifier:

The effluent is fed to a reactor (aeration tank) containing a completely mixed and well aerated, population of microbes in the form of an activated sludge. The organic matter in the raw

effluent is consumed by the micro-organisms which in turn generate more microbial mass. This mass is then separated from the treated effluent by gravity settlement in the clarifier. Treated effluent is discharged in accordance with emission limit values (ELV's) specified in Schedule 2 (i) of the site IPPC Licence as follows.

Emission Point Ref No.		EF7 (Treated effluent after clarifier)	EF6 (Cooling Water, Surface Water & Condensate)
Volume to be Emitted	Max in any one day Max rate per hour	1400m^3 60m^3	7750m^3 600m^3
Parameter		**EF7 Emission Limit Value**	**EF6 Emission Limit Value**
Temperature		25°C (max)	25°C (max)
pH		6-9	6-9
		mg/l	mg/l
BOD		20	3
Suspended Solids		30	5
Total Nitrogen (as N)		15	N/A
Ammonia (as N)		1	1
Total Phosphorous (as P)		1	0.2 above background level in lake
Oils, Fats and Grease		10	N/A

BAT Evaluation

Concentrations of the relevant parameters in emissions of treated process waste water to surface water from GV meet and exceed BAT, as specified in the Guidance Note for the Dairy Processing Sector (EPA, 2008).

Table C.1 Comparison of emissions against BAT

Parameter	BAT ELV (mg/l)	EF7 GV ELV (mg/l)	EF6 GV ELV (mg/l)	BAT Compliant
pH	6-9	6-9	6-9	Yes
BOD	20-40 (> 90% removal)	20	20	Yes
COD	125-250 (>75% removal)	-	-	N/A
Suspended Solids	60	30	5	Yes
Total Nitrogen (as N)	5-25 (>80% removal)	15	-	Yes
Total Ammonia (as N)	10	1	1	Yes
Total Phosphorous (as P)	2-5 (>80% removal)	1	0.286	Yes
Oils, Fats and Grease	10-15	10	-	Yes

Discharges of treated wastewater form the site, and accordingly assessment of impact on surface waters is based on emissions which are at maximum flow and at ELV throughout the year (i.e maximum mass emissions over 24/7/365).

A review of the sites AER shows that actual emissions are significantly lower as shown below.

Table C.2(i) EF7 (Treated Effluent) Comparison of Annual Emissions against Licence

Parameter	Mass Emissions (Kg) 2009	Mass Emissions (Kg) 2010	Licensed Mass Emissions (Kg)
BOD	2,736	2,585	10,220
SS	3,706	3,526	15,330
Total Nitrogen	1,356	755	7,665
Ammonia	116	110	511
Total Phosphorus	200	195	511
OFG	1,392	1,170	5,110
Volume (m^3)	234,138 (m^3)	222,334 (m^3)	511,000 (m^3)

Source: 2010 AER

Table C.2(ii) EF6 (Cooling Water, Surface Water & Condensate) Comparison of Annual Emissions against Licence

Parameter	Mass Emissions (Kg) 2009	Mass Emissions (Kg) 2010	Licensed Mass Emissions (Kg)
BOD	867	891	8,486
SS	1,109	1,253	14,143
Ammonia	160	181	2,828
Total Phosphorus	108	85	1,171[Note1]
Volume (m^3)	342,790 (m^3)	384,981 (m^3)	2,829,000 (m^3)

Note1: Based upon licence requirement to be 0.2 mg/l above background level in lake
Source: 2010 AER

Attachment Nº C.2

Monitoring and Sampling Points

Attachment Nº C.2

Monitoring and Sampling Points

Information on Monitoring and Sampling Points is tabulated below:

Point Code	Easting	Northing	Verified	Emission
EF7	262499	285277	No	(EF7) Temperature, pH, BOD, SS, Total Nitrogen (as N), Ammonia, Total Phosphorous (as P), OFG.
ES2	262515	285274	No	(EF7) Temperature, pH, BOD, SS, Total Nitrogen (as N), Ammonia, Total Phosphorous (as P), OFG.
ES3	262515	285274	No	Flow (EF7)
EF6	262516	285269	No	(EF6) Temperature, pH, BOD, SS, Ammonia, Total Phosphorous (as P).
ES5	262484	285231	No	Flow (Combined EF6 & EF7)

Note: Treated effluent can be sampled at either point EF7 or ES2.

Attachment N^{o} D.1.1

Assessment of Impact on Receiving Surface Water

Attachment N^{o} D.1.1

Assessment of Impact on Receiving Surface Water

RECEIVING WATERS – GENERAL INFORMATION

Discharges of treated process wastewater, cooling water, surface water and condensate are made to Lough Ramor from an outfall pipe located 100m from the lake shore.

Lough Ramor consists of two narrow basins connected by a narrower stretch of water and has a surface area of 7.37km. Overall the lake is a relatively shallow water body with a maximum depth of 15m (north of Crane Island) and an average depth of 3.56m.

The lake is fed by 14 inflow streams the largest of which is the Upper-Kells Blackwater. It drains almost 50% of the catchment area. The Blackwater flows through the town of Virginia before entering the lake at the narrow stretch of water between its two basins.

RECEIVING WATERS – WATER QUALITY

Physiochemical data collected by GV has been used to determine the mean upstream (Sample Point A), (Ref: Attachment No.A.2, Drawing No.2) water quality values for the parameters as follows:

Parameter	Long Term Upstream Value (Mean)(mg/l)
pH	7.965
BOD	2.208
Ammonia (as N)	0.053
Total Phosphorous	0.086
Suspended Solids	7.679
Total Nitrogen	1.079

Current Water Quality Status in Lough Ramor is Bad. Target Good Status is to be achieved by 2027. (Eastern River Basin District – River Basin Management Plan 2009 - 2015)

ASSIMILATIVE CAPACITY & IMPACT ASSESSMENT

The assimilative capacity of Lough Ramor to accept discharges of treated waste water from the plant has been calculated based on an Assimilative Capacity Model for Lakes and Costal Waters (EPA, 2011)

The model used to determine the assimilative capacity is done by determining two values. The flow of available dilution water (D), which is then used to determine the concentration (C) of a given discharge substance in the receiving waters. This concentration is then used to establish if these parameters are within the limits set out in S.I No. 272 of 2009.

The following model is done for the combined discharges of EF6 & EF7 which discharge from the same outfall pipe 100m from the shore of Lough Ramor.

INPUT DATA:

The following input data is used in the model below:

Parameter	Description		Units	Combined (EF6 & EF7)
b	Average Depth in Lake		m	3.56
F	Max Hourly Flow Rate of Discharge		m^3/hr	760
C_b	Background Concentration (Upstream – Sample Point A)	BOD	mg/l	2.208
		Suspended Solids	mg/l	7.679
		Total Nitrogen	mg/l	1.079
		Ammonia	mg/l	0.053
		Total Phosphorus	mg/l	0.086
		Oils, Fats & Grease	mg/l	N/A
C_e	Effluent Discharge Concentration (ELV in Licence)	BOD	mg/l	4.342
		Suspended Solids	mg/l	6.974
		Total Nitrogen	mg/l	-
		Ammonia	mg/l	1
		Total Phosphorus	mg/l	0.342
		Oils, Fats & Grease	mg/l	-

Note: ELV is based on combined EF6 & EF7. This was established using a mass balance calculation.

MODEL:

Firstly the flow of available dilution water (D) is calculated using the following formula:

D = (8930*b) /F

B - is the average depth of the receiving water (m)
F - is the maximum hourly flow rate of discharge allowable under the licence (m^3/h)

D = (8930 x 3.56) / 760

D = 41.83 dilutions available in Lough Ramor

Parameter: Ammonia

Once the value for D is established it can be substituted into the following formula to calculate the concentration (C) of a given discharged substance in the receiving water:

$C = C_b + (C_e - C_b)/ (1 + D)$

C_b - is the background concentration.
C_e - is the effluent discharge concentration (ELV in licence).

C = 0.053 + (1 – 0.053) / (1 + 41.83)

C = 0.075 mg/l

The Ammonia limit for lakes set out in S.I No. 272 of 2009 is: Good Status ≤ 0.065 (mean) or ≤ 0.140 (95%ile).

As it can be seen from above, the concentration of Ammonia in Lough Ramor is 0.075mg/l which is well within the Good status (95%ile) limit of ≤ 0.140mg/l

When the above is carried out on the remaining parameters the values for the concentration of a given substance in the receiving water (C) are calculated and tabulated below:

Parameter	Description		Units	Combined (EF6 & EF7)
C	Concentration of a given discharge substance in the receiving water	BOD	mg/l	2.258
		Suspended Solids	mg/l	7.663
		Ammonia	mg/l	0.075
		Total Phosphorus	mg/l	0.092

These values can be compared against the background concentration in Lough Ramor prior to discharge to reveal an increase in concentration:

Parameter	Description	BOD	SS	Ammonia	Phosphorus
Cb	Background Concentration (Upstream – Sample Point A) (mg/l)	2.208	7.679	0.053	0.086
C	Concentration of a given discharge substance in the receiving water (mg/l)	2.258	7.663	0.075	0.092
Actual Increase	Increase in receiving waters (mg/l)	0.05	-0.016	0.022	0.006

As it can be seen from the above, the increase in concentrations in Lough Ramor after discharge are very low resulting in a negligible effect on the lake.

Please see below for detailed results and calculations:

Assimilative Capacity Model For Lakes: Data Input & Summary Sheet:

Data Input:

Parameter	Description		Units	Emission Point		
				EF6	EF7	EF6 & EF7
b	Average Depth of the Receiving Water		m	3.56	3.56	3.56
F	Maximum Hourly Flow Rate of the Discharge		m^3/hr	700	60	760
C_b	Background Concentration (Upstream - Sample Point A)	BOD	mg/l	2.208	2.208	2.208
		Suspended Solids	mg/l	7.679	7.679	7.679
		Total Nitrogen	mg/l	N/A	1.079	1.079
		Ammonia	mg/l	0.053	0.053	0.053
		Total Phosphorus	mg/l	0.086	0.086	0.086
		Oils, Fats & Grease	mg/l	N/A	-	N/A
C_e	Effluent Discharge Concentration (ELV in Licence)	BOD	mg/l	3	20	4.342
		Suspended Solids	mg/l	5	30	6.974
		Total Nitrogen	mg/l	N/A	15	N/A
		Ammonia	mg/l	1	1	1
		Total Phosphorus	mg/l	0.286	1	0.342
		Oils, Fats & Grease	mg/l	N/A	10	N/A

Results:

Parameter	Description		Units	Emission Point		
				EF6	EF7	EF6 & EF7
D	Flow of Available Dilution Water	BOD	N/A	45	530	41.83
		Suspended Solids	N/A	45	530	41.83
		Total Nitrogen	N/A	45	530	41.83
		Ammonia	N/A	45	530	41.83
		Total Phosphorus	N/A	45	530	41.83
		Oils, Fats & Grease	N/A	45	530	41.83
C	Concentration of a given discharge substance in the receiving water	BOD	mg/l	2.225	2.242	2.258
		Suspended Solids	mg/l	7.621	7.721	7.663
		Total Nitrogen	mg/l	N/A	1.105	N/A
		Ammonia	mg/l	0.073	0.055	0.075
		Total Phosphorus	mg/l	0.090	0.088	0.092
		Oils, Fats & Grease	mg/l	N/A	N/A	N/A

Limits:	Ammonia	Good Status ≤ 0.065 (mean) or ≤ 0.14 (95%ile)

Note:

The above calculations have been completed for Emission Point EF6, Emission Point EF7, and both EF6 & EF7 Combined. The calculations have been based on using ELV's set out in the licence.

For the Combined EF6 & EF7 discharge, a mass balance calculation was used to establish ELV's.

Attachment N^{o} D.1.2

Proposals to Comply with the Requirements of SI 272

Attachment N^{o} D.1.2

Proposals to comply with the requirements of SI 272

Discharges from the site currently comply with the requirements of SI 272.

Attachment N^{o} D2

Environmental Considerations and Best Available Techniques (BAT)

Attachment N^{o} D2

Environmental Considerations and Best Available Techniques (BAT)

Describe, in outline, the main alternatives, if any, to the proposals contained in the Review Form.

Not Applicable

Describe any environmental considerations which were made with respect to the use of cleaner technologies, waste minimisation and raw material substitution.

Glanbia Ingredients (Virginia) Ltd. (GV) is a subsidiary of Glanbia plc. Glanbia plc is an Irish based international food company, servicing markets in the EU, USA, Asia, Latin America and Africa. GV is situated on a 23 acre site on the shores of Lough Ramor, 2 miles east of Virginia in County Cavan. Using whole milk as its basic raw material GV produces 2 main products:

1) *Cream Base & Cream for Baileys Original Cream Liqueur.*
2) *Milk Powders*

The Virginia facility, founded in 1966 as Ambrosia (Ireland) Limited has grown substantially over the past 45 years.

There are presently 83 employees at the GV site.

The on-site Waste Water Treatment Plant is situated in the South East corner of the plant. It is 190m from the road and 50m from the lakeshore.

GV uses approximately 1050m3 of treated lake water from Lough Ramor, and also sources water from an onsite borehole.

The energy supply for the plant is derived from electricity and natural gas.

Production activities are on-going on a continuous basis, 24 hours a day 7 days a week.

Administration Staff work between 08:00 and 17:00, Monday to Friday.

Glanbia Ingredients is committed to environmental excellence by utilising the best environmental practices in all of its processes and contributing to the sustainability of the natural environment in which they operate.

Accordingly Glanbia Ingredients aims are to:

1) *Comply with relevant statutory obligations and any other requirements to which the organisation subscribes the ensure continual improvement in environmental performance.*
2) *Minimize the impact of their milk processing operations on the environment by minimizing emissions, consumption of raw materials and energy and availing of opportunities for re-use and recycling.*
3) *Provide the resources necessary for the achievement of a high standard of environmental performance.*

Describe the measures proposed or in place to ensure that:

(a) the best available techniques are or will be used to prevent or eliminate or, where that is not practicable, generally reduce an emission from the activity;

Best Available Techniques (BAT) are adopted throughout the processing plant and at the WWTP.

The treatment plant has a high compliance rate and overall emissions are well within the Emission Limit Values (ELV's) specified in the IPPC Licence.

All discharges are below the relevant BAT ELV as specified in the Guidance Note for the Slaughtering Sector, both as actual values and in terms of treatment plant performance (as % removal efficiency).

(b) no significant pollution is caused;

All wastewater treatment plant emissions are below the emission limit values set out in IPPC Licence Reg. No. P0405-01.

(c) waste production is avoided in accordance with *Council Directive 75/442/EEC of 15 July 1975 on waste*; where waste is produced, it is recovered or, where that is technically and economically impossible, it is disposed of while avoiding or reducing any impact on the environment;

The principles of Prevention are applied to all resource use at the site in order to improve efficiency and reduce wastes at sources where practicable. Where waste generation is unavoidable, the site environmental management system sets out registers, procedures and recording systems to ensure that wastes are collected, transported and recycled or disposed of in accordance with waste legislation and the site IPPC Licence.

(d) energy and other resources are used efficiently;

The facility has undertaken an energy audit for the facility.

(e) the necessary measures are taken to prevent accidents and limit their consequences; and,

GV have a Business Continuity Plan which contains a robust Crisis Management Plan and details an Accident Prevention and Emergency Response Plan. This addresses risk reduction at the facility and describes the measures which will be taken to reduce the consequences of a loss of control incident at the site.

(f) the necessary measures are taken upon definitive cessation of activities to avoid any pollution risk and return to site of operation to satisfactory state

GV has prepared a Decommissioning and Closure Plan for the site which describes the measures which will be taken in the event of closure of part or all of the facility.

This section should present a statement on energy efficiency at the site to include, where appropriate, an energy audit with reference to the *EPA Guidance document on Energy Audits*. Licensees should have regard to Section 5 of the *EPA Acts 1992 and 2003* in selecting BAT and in particular the following:

- The use of low-waste technology;
- The use of less hazardous substances;
- The furthering of recovery and recycling of substances generated and used in the process and of waste where appropriate;
- Comparable processes, facilities or methods of operation, which have been tried with success on an industrial scale;
- Technological advances and changes in scientific knowledge and understanding;
- The nature, effects and volume of the emissions concerned;
- The commissioning dates for new or existing facilities;
- The length of time needed to introduce the BAT;
- The consumption and nature of raw materials, including water, used in the process and their energy efficiency;
- The need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it;
- The need to prevent accidents and to minimize the consequences for the Environment; and,
- The information published by the Agency in the form of sectoral BAT Guidance documents and the relevant BREF documents published by the EC (available for download at http://eippcb.jrc.es/ and at www.epa.ie).

Attachment N^{o} E1

Statutory Requirements

Attachment N^{o} E1

Statutory Requirements

GV operate best environmental practices to ensure that control of diffuse emissions from the installation eliminated or controlled in such a way as to prevent environmental impact. Compliance with the range of relevant legislation is detailed below.

Ref.	*Legislation*	*Compliance*
(a)A	A specification prepared by the Agency in accordance with Section 5 of the *Environmental Protection Agency Act 1992* as amended by Section 7 of the *Protection of the Environment Act 2003*	GV have applied BAT to the management of their processing operations at the Virginia facility as follows: The site operates an Environmental Management System (EMS) which applies management control, through documented procedures over all aspects of site activities which may potentially interact with the environment. Specific projects for improvement are addressed through the Schedule of Objectives and Targets in the Environmental Management Programme. Progress in meeting targets is reported to the Agency on an annual basis in the AER. The EMS addresses BAT issues of training, process control to minimize waste and reduce water and energy consumption throughout the process. Specifically with respect to wastewater treatment, BAT is applied at the site as follows: • Implement an environmental management system (BREF Section 5.1.1). • Primary treatment (Flow and load equalisation, pH correction/neutralisation (BREF Section 4.5 • Screening (BREF Section 4.5.2.1) • Sedimentation (BREF Section 4.5.2.5) • Flotation (BREF Section 4.5.2.6) • Centrifugation (BREF Section 4.5.2.8) • Aerobic suspended growth processes, such as activated sludge (BREF Sections 4.5.3.1.1 & 4.5.3.1.1) • Aerobic treatment with nitrification and denitrification (to reduce ammonia) (BREF Section 4.5.4.1) • Anaerobic processes (BREF Section 4.5.3.2) • Trickling Filter
(b)	*Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001)* as amended by the *Urban Waste Water Treatment (Amendment) Regulations 2004 (S.I. No. 440 of 2004)* or any future amendment thereof;	The Lough Ramor is not designated a Sensitive Area under the Urban Wastewater Treatment Regulations 2001 (S.I. 254 of 2001).
(c)	*European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2009 (S.I. No. 101*	The requirements of SI 101 of 2009 are addressed through the land spreading of activated sludge in accordance with the specifications of a Nutrient Management Plan (NMP).

Ref.	Legislation	Compliance
	of 2009) or any future amendment thereof	The NMP is updated on an annual basis and specifies the locations, rates of application (based on land soil values and nutrient content of the wastes) and defines all buffer zones and exclusion periods required for the protection of surface and ground water bodies during application of wastes.
(d)	*Local Government (Water Pollution) Act, 1977 (Control of Cadmium Discharges) Regulations 1985 (S.I. No. 294 of 1985)*;	Cadmium is not used at the installation; therefore, there is no potential for discharges containing cadmium from the site.
(e)	*Local Government (Water Pollution) Act, 1977 (Control of Hexachlorocyclohexane and Mercury Discharges) Regulations 1986 (S.I. No. 55 of 1986)*;	Hexachlorocyclohexane and mercury are not used at the GV installation.
(f)	*Local Government (Water Pollution) Acts, 1977 and 1990 (Control of Carbon Tetrachloride, DDT and Pentachlorophenol Discharges) Regulations 1994 (S.I. No. 43 of 1994)*	These substances are not used and accordingly, would not form part of any discharge to the receiving watercourse.
(g)	Measures or controls identified in a pollution reduction plan for the river basin district prepared in accordance with Part V of the *EC Environmental Objectives (Surface Waters) Regulations 2009 S.I. No. 272 of 2009* for the reduction of pollution by priority substances or the ceasing or phasing out of emissions, discharges and losses of priority hazardous substances.	Management of WWTP to ensure that current emission limit values are not exceeded. Commitment to reducing water consumption at the facility which in turn reduces the process waste water generated at the facility.

There are no direct emissions to groundwater and inadvertent indirect emissions will be prevented by bulk tanks, segregation, bunding and correct material handling protocols. These measures will ensure compliance with S.I. No. 271 of 1992.

Bunding of bulk storage tanks, of liquid material storage areas and procedures to ensure that bunding is adequate and of good integrity are in place at the site. Integrity testing of bunding structures is carried out on a 3-year cycle. Tank integrity testing is also carried out.

There is adequate designated space within the plant for storage of waste awaiting disposal off-site in areas that are suitably constructed to prevent a risk of surface and groundwater pollution.

Attachment N^{o} F1

Approved Adjustments & Conditions

Attachment N^{o} F1

Approved Adjustments & Conditions

The EPA issued an update to the site IPPC Licence in the form of a Technical Amendment A which was issued on 11th July 2006. Technical Amendment A deals with Resource Use and Energy Efficiency, Accident Prevention and Emergency Response, Decommissioning and Residuals Management, and Emissions to Atmosphere.

There are no other approved Adjustments or Conditions to this Licence.