awnconsulting

Unit 5, ATS Building,
Carrigaline Industrial Estate, Carrigaline,
Co. Cork, Ireland

T: + 353 21 438 7400
F: + 353 21 483 4606
E: info@awnconsulting.com
W: www.awnconsulting.com

MM/10/5356L06
28th April 2011

Ms Lorretta Joyce,
Inspector,
Environmental Licensing Programme,
EPA,
P.O. Box 3000
Johnstown Castle Estate.
Co. Wexford

Dear Ms Joyce,

RE: Submission of Application for IPPC Licence Review P0687-01 (Abbott Ireland)

AWN Consulting are acting on behalf of Abbott Ireland. Abbott wish to apply for a review of their IPPC Licence P0687-01 for their facility at Dromore West, Cootehill, Co. Cavan due to an increase in capacity of the facility.

Enclosed is the applicable fee of €21,585 (includes €8,888 for a large Class 7 activity and €12,697 for a large Class 2 activity. Also enclosed is the application form and relevant accompanying information as attachments to the application.

A site notice has been erected, a notice has been published in the Irish Times (21/04/11) and Monaghan and Cavan County Councils have been informed of the intention to apply.

Should you require any further information please do not hesitate to contact me or Ms Petrina Ashford (Abbott).

Yours sincerely,

Mairead Morrissey

MAIREAD MORRISSEY
Principal Environmental Consultant

Dublin Office
The Tecpro Building,
Clonshaugh Business & Technology Park,
Dublin 17, Ireland.
T: + 353 1 847 4220
F: + 353 1 847 4257

AWN Consulting Limited
Registered in Ireland No. 319812
Directors: F Callaghan, C Dilworth,
T Donnelly, E Porter
Associate Director: D Kelly

Integrated Pollution Prevention and Control (IPPC) Licensing

Application Form

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

CONTENTS

ABOUT THIS APPLICATION FORM

This form is for the purpose of making an application for an Integrated Pollution Prevention and Control (IPPC) Licence under the Environmental Protection Agency Acts, 1992 and 2003. There is a separate application form for applicants who wish to apply for the Pig & Poultry sector.

The Application Form **must** be completed in accordance with the instructions provided in the *IPPC Licensing Application Guidance Note.* The Guidance Note gives an overview of IPPC Licensing, outlines the licence application process (including number of copies required) and specifies the information to be submitted in the application. The Guidance Note and application forms are available to download from the IPPC Licensing pages of the EPA's website at www.epa.ie. A valid application for an IPPC licence must contain the information prescribed in the Environmental Protection Agency (Licensing) Regulations, 1994 to 2004. Article 10 of the Regulations sets out the statutory requirements for information to accompany a licence application. The application form is designed in such a way as to set out these questions in a structured manner and not necessarily in the order presented in Article 10. In order to ensure a legally valid application in respect of Article 10 requirements, please complete the Article 10 Checklist provided in Annex 2.

This Application Form does not purport to be and should not be considered a legal interpretation of the provisions and requirements of the Environmental Protection Agency Acts, 1992 and 2003 and the Environmental Protection Agency (Licensing) Regulations 1994 to 2004. While every effort has been made to ensure the accuracy of the material contained in the Application 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.

Should there be any contradiction between the information requirements set out in the Application Form and any clarifying explanation contained in the accompanying Guidance Note then the requirements in this Application Form shall take precedence.

SECTION A: NON-TECHNICAL SUMMARY

A non-technical summary of the application is to be included here. The summary should identify all environmental impacts of significance associated with the carrying on of the activity/activities, and describe mitigation measures proposed or existing to address these impacts. This description should also indicate the normal operating hours and days per week of the activity.

The following information must be included in the non-technical summary:

A description of:

- the installation and its activities,
- the raw and auxiliary materials, other substances and the energy used in or generated by the installation,
- the sources of emissions from the installation,
- the environmental conditions of the site of the installation (e.g. soil and groundwater, air, noise, surface water),
- the nature and quantities of foreseeable emissions from the installation into each medium as well as identification of significant effects of the emissions on the environment,
- the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the installation,
- where necessary, measures for the prevention and recovery of waste generated by the installation,
- further measures planned to comply with the general principles of the basic obligations of the operator i.e.

  (a) all the appropriate preventive measures are taken against pollution, in particular through application of the Best Available Techniques (BAT);
  (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;
  (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.

- measures planned to monitor emissions into the environment.

Supporting information should form **Attachment Nº A.1**

Response: The Non-Technical Summary is included as Attachment A.1.

SECTION B: GENERAL

B.1. Owner/Operator

Name*:	Abbott Ireland
Address:	Dromore West
	Cootehill
	Co. Cavan
Tel:	049 5559200
Fax:	049 5559201
e-mail:	petrina.ashford@abbott.com

* This should be the name of the applicant which is current on the date this IPPC Licence Application 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 application documentation submitted by the applicant and by the nominated person will be deemed to have come from the applicant.

Name:	Abbott Ireland
Address:	Dromore West
	Cootehill
	Co. Cavan
Tel:	049 5559200
Fax:	049 5559201
e-mail:	petrina.ashford@abbott.com

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

Address:	15 Clarendon House,
	Church Street,
	Hamilton,
	Bermuda
Tel:	N/A
Fax:	N/A
e-mail:	N/A

If the applicant is a body corporate, the following information must be attached as **Attachment B1**:

a) a Certified Copy of the Certificate of Incorporation.
b) the Company's Registration Number from the Companies Registry Office.
c) Particulars of Registered Office of the Company.

Response: Attachment B.1 includes a letter regarding the Certificate of Incorporation and Registration Details for the company.

Name and address of the proprietor(s) of the Land on which the Activity is situated (if different from applicant named above):

Proprietor's Name:	As Above
Address:	As Above
Tel:	
Fax:	
e-mail:	

Name and address of the owner(s) of the building and ancillary plant in which the activity is situated (if different from applicant named above):

Name:	As Above
Address:	As Above
Tel:	
Fax:	
e-mail:	

B.2. Location of Activity

Name:	Abbott Ireland
Address*:	Dromore West,
	Cootehill
	Co. Cavan
Tel:	049 5559200
Fax:	049 5559201
Contact Name:	Ms Petrina Ashford
Position:	EHS Coordinator
e-mail:	Petrina.ashford@abbott.com

* Include any townland.

National Grid Reference (12 digit 6E,6N)	E 259759.3 N 315206.8

Location maps (≤A3), appropriately scaled, with legible grid references should be enclosed in **Attachment B.2.** The site boundary must be outlined on the map in colour.

Response: Attachment B.2 is included and shows the location of the facility, the site boundary and site layout.

Geo-referenced digital drawing files (e.g. AutoCAD files) in Irish Grid projection of the site boundary and overall site plan, including labelled emission, monitoring and sampling points, are also required. This data should be provided to the Agency on a separate CD-Rom containing sections B.2, E.6 and F.3.

Name of geo-referenced digital drawing files	Drawing 001: No. 21029/CD/001 – Overall Masterplan Drawing 002: No. 21029/CD/002 – Master Site Plan –

	Sector 1 Drawing 003: No. 21029/CD/003 – Master Site Plan Sector 2 Drawing 003a: No. 21029/CD/003a – Master Site Plan Utilities Area Drawing 004: No. 21029/CD/004 – Main Emission Points Drawing 005: No. 21029/CD/005 – Monitoring/Sampling Points Drawing 006: No. 21029/CD/006 – Air Emission Points Drawing 007: No. 21029/CD/007 – Noise Emissions Drawing 008: No. 21029/CD/008 – Abatement Measures
Name of CD-Rom with digital drawing files	AbbottIPPCL

B.3. Class of Activity

Identify the relevant activities in the First, Third or Fourth Schedule of the PoE Act 2004 to which the activity relates:

Schedule	**Class**	**Description**[Note 1]
First	7.2.2 (Principal)	The manufacture of dairy products where the processing capacity exceeds 50 million gallons of milk equivalent per year, not included in paragraph 7.2.1
First	2.1	The operation of combustion installations with a rated thermal input equal to or greater than 50MW

Note 1: In order to give a precise identification **select only those words** from the description of the class or classes that best describes the nature of the activity for which the licence is being applied for.

B.4. Employees/ Capital Cost

Give-

(i) In the case of an established activity, the number of employees and other persons working or engaged in connection with the activity on the date after which a licence is required and during normal levels of operation, or

(ii) In any other case, the gross capital cost of the activity to which the application relates.

Number of Employees (existing facilities):	333 (includes 53 employees for Project ICE)
Gross Capital Cost (new proposals) €	9 million

B.5. Relevant Planning Authority

Give the name of the planning authority in whose functional area the activity is or will be carried out.

Name:	Monaghan County Council
Address:	The Glen
	Monaghan
	Co. Monaghan

Tel:	047 30500
Fax:	047 82739

Planning Permission relating to this application:

has been obtained	X	***is being processed***	
is not yet applied for		***is not required***	

Local Authority Planning File Reference Nº:	10/173, 10/580

Attachment B.5 should contain all planning permissions, including a copy of ***all*** conditions, and the required copies of any EIS should also be enclosed. For existing activities, **Attachment Nº B.5** should also contain all licences and permits past and present in force at the time of submission.

Response: A copy of the existing IPPC Licence is included as Attachment B.5.1.

Attachment B.5.2 contains a copy of all planning permissions granted by Monaghan County Council since the previous IPPC Licence application (2005). The most recent planning permissions (Ref: 10/173 and 10/580) includes proposed works for elements of Project ICE and for the upgrade of the existing wastewater treatment plant. Planning permission 10/173 includes for an office expansion and a car park expansion; however it is not absolutely certain that these will proceed.

B.6. Relevant Sanitary Authority.

In the case of a discharge of any trade effluent or other matter to a sewer of a sanitary authority, give the name of the sanitary authority in which the sewer is vested or by which it is controlled.

Name:	N/A
Address:	N/A
Tel:	
Fax:	

In the case of a discharge of any trade effluent or other matter to a sewer not vested by a sanitary authority, the applicant must supply as **Attachment Nº B.6**; (a) the name and address of the owner(s) of the sewer and the waste water treatment plant to which the sewer discharges and who are responsible for the quality of the treated effluent discharging to waters and (b) a copy of the effluent regulations and the agreement between the applicant and the aforementioned.

Name:	N/A
Address:	N/A
Tel:	
Fax:	

B.7. Relevant Health Board Region

The applicant should indicate the Health Board Region where the activity is or will be located.

Name:	HSE Dublin Northeast
Address:	Kells Business Park,
	Dublin Road
	Kells,
	Co. Meath
Tel:	046 9282500
Fax:	

B.8 Site Notice, Newspaper Advertisement and Planning Authority Notice.

Attachment Nº B.8 should contain a copy of the text of the site notice, a map (no larger than A3) showing its location on site (in accordance with Article 7 of the Regulations) and a copy of the newspaper advertisement. A copy of the notice given to the Planning Authority should also be included.

Response: Attachment 8 includes a copy of the newspaper advertisement and site notice. The site is located within the administrative area of Monaghan Co.Co.; however the site is on the border of County Cavan and there are aspects of the facility that may affect Cavan County, i.e. the final treated discharge is to the Dromore River, which runs through Co. Cavan.

The Site Notice has been erected in accordance with Sections 5 and 7 of the Environmental Protection Agency (Licensing) Regulations, 1994 (S.I. No. 85 of 1994). The location of the site notice is shown in Attachment B.8.

A notice has been published in the Irish Times newspaper, which is a national newspaper, also available locally. This is in accordance with Sections 5 and 6 of the Environmental Protection Agency (Licensing) Regulations, 1994 (S.I. No. 85 of 1994).

Copies of the letters issued to both Monaghan County Council and Cavan County Council to inform them of the applicant's intention to apply for a review of the existing IPPC Licence are included in Attachment B.8.

B.9 Seveso II Regulations

State whether the activity is an establishment to which the EC (Control of Major Accident Hazards involving Dangerous Substances) Regulations (S.I. No. 74 of 2006) apply.

If yes, outline how the process comes under these regulations.

Supporting information should be included in **Attachment Nº B.9**.

Response: The EC (Control of Major Accident Hazards involving Dangerous Substances) Regulations (S.I. No. 74 of 2006) do not apply to the Abbott Cootehill facility.

B.10 IPPC Directive

Specify whether the activity is a category of industrial activity referred to in Annex I of the IPPC Directive (2008/1/EC) and if yes specify the category.

Supporting information should be included in **Attachment Nº B.10**.

Response: The activity is a category of industrial activity referred to in Annex I of the IPPC Directive (2008/1/EC). The facility falls under the following Category:

6.4 (c) Treatment and processing of milk, the quantity of milk received being greater than 200 tonnes per day (average value on an annual basis)

And

1.1 Combustion installations with a rated thermal input exceeding 50MW.

SECTION C: MANAGEMENT OF THE INSTALLATION

C.1 Site Management & Control

Details should be provided on the management structures for the activity. Organisational charts and all relevant environmental management policy statements, including provisions for on-going assessment of environmental performance, are required.

Response: Attachment C.1.1 includes the organisational chart for the facility, including management structures. Attachment L.1 includes the training and qualifications for the person responsible for overall environmental management at the facility, i.e. the Environmental Coordinator.

In addition to ISO14001 (detailed in Section C.2) the facility also has the following certifications: Energy Management Standard I.S EN 16001:2009, Quality and Food Management Standards ISO 9001, ISO 22000 standards and PAS 220.

An outline of the Quality Management System (QMS) that is in place at the site, along with the ISO9001 certification, is included as Attachment C.1.2.

C.2 Environmental Management System (EMS)

Indicate whether an Environmental Management System has been developed for the installation. If yes, specify which standard and include a copy of the accreditation certificate.

Response: There is an EMS in place at the facility. Abbott Ireland, Cootehill are certified to Environmental Management Standard ISO 14001:2004. The facility gained accreditation in 1997. Prior to ISO14001 Abbott Cootehill had certification to BS7750, an EMS specification standard. Through ISO14001, Abbott operates a formal structure for environmental management, ongoing assessment of environmental performance and continual improvement at the site. Abbott Ireland Cootehill currently uses SGS as their certification company. An independent assessment of the standard occurs every 6 months with recertification every 3 years.

A copy of the ISO14001 certification and Key Environmental Standard Operating Procedures (SOPs) that have been designed for the facility as part of the EMS and are in place, are included as Attachment C.2.1, along with the EN16001 certification. The Environmental Objectives and Targets for the facility for 2011 are included as Attachment C.2.2. The targets for 2010 are also included, showing the completion status of each target for the past year.

C.3 Hours of Operation

Provide details of the hours of operation for the installation, including:
(a) Proposed hours of operation.
(b) Proposed hours of construction and development works and timeframes.
(c) Any other relevant hours of operation expected.

Response: Attachment C.3 provides details on (a) the hours of operation. Hours of construction when required will be typically Monday – Saturday 08.00 – 20.00. C.3 (c) is not applicable.

This information should form **Attachment Nº C**.

SECTION D: INFRASTRUCTURE & OPERATION

D.1. Operational Information Requirements

Describe the plant, methods, processes, ancillary processes, abatement, recovery and treatment systems, and operating procedures for the activity, to include a copy of such plans, drawings or maps, (site plans and location maps, process flow diagrams), and such other particulars, reports and supporting documentation as are necessary to describe all aspects of the activity. Maps and drawings must be no larger than A3 size.

A development and operational history of the site should be included here.

Response:

Background to Abbott Ireland
Abbott Ireland is a subsidiary of Abbott. Abbott is a global, broad-based health care company. The company employs nearly 90,000 people worldwide and markets its products in more than 130 countries.

Abbott Ireland manufactures and markets a broad range of health care products including medical devices, and pharmaceutical, diagnostic and nutritional products. Abbott has eight manufacturing facilities in Ireland, one of which is the facility at Cootehill. Abbott has been operating in Ireland since 1946.

Development and Operational History
The Cootehill facility was established in 1974 and began manufacturing in 1975. It manufactures a range of nutritional infant formulae and currently directly employs approximately 280 people.

In 2005, a decision was made by Abbott Laboratories at corporate level to expand world-wide infant nutritional processing capacity, primarily as a result of the growing market for such products.

The investment consisted of an expansion of the existing facility to include additional storage capacity for incoming bulk liquids, additional blending and drying facilities and additional canning and warehousing facilities. In order to accommodate the increased production, the site utilities were also upgraded.

Under the First Schedule of the EPA Act, 1992, the proposed expansion required an Integrated Pollution Control (IPC) licence under Class 7.2, 'the manufacture of dairy products where the processing capacity exceeds 50 million gallons of milk equivalent per year' and Class 2.2, 'the burning of coal or oil in a boiler or furnace with a nominal heat output exceeding 50 MW'. The expansion also came under the requirements of the EC

Directive 96/61/EC Concerning Integrated Pollution Prevention and Control, for an Integrated Pollution Prevention and Control (IPPC) licence. An IPPC Licence was granted in 2005, which is the current Licence: Reg. No. 687. Following the expansion, capacity doubled. Abbott Cootehill was capable of processing in excess of 50 million gallons of milk equivalent per year.

Project ICE
Project ICE (International Capacity Expansion) commenced in 2010. This is currently being rolled out at the facility and is the reason for the requirement for an IPPC Licence review.

The project overview is as follows:

- Increase Plant Capacity by 40% by early 2012
- The same products and ingredients as currently
- The same wastes types as currently
- Existing processing systems to be optimised to reduce downtime and increase efficiency
- Fuel consumption will increase by 25% of current fuel use
- Headcount will increase to approximately 333 (from 280)
- No additional boilers

Project ICE includes the following:

- Upgrade to the Refrigeration Plant (Completed July 2010)
- Upgrade to the Water Treatment Plant (In progress)
- Upgrade to the Wastewater Treatment System/Plant (In progress)
- Installation of Bag-Off in Packing Area to allow for Bulk Bagging (Not Complete)
- Installation of 3rd Oil Blend System for increased processing speed (Completed July 2010)
- Installation of Parallel CIP and Drier Feed Circuits. Second Feedline on Dryer 2 (Completed July 2010)
- Upgrade to Internal and External Facilities to accommodate changes/upgrades (Ongoing)
- Installation of 3rd Evaporator (planning permission granted but this has not yet been approved internally)
- A third packing line will be added in the future

Drawing No. 001 – Ref: 21029/CD/001 shows the overall site layout and site boundary, with Drawing No. 002 – Ref. 21029/CD/001, 003 – Ref. 21029/CD/001 and 004 – Ref. 21029/CD/001 showing more detail of the facility and ancillary items on the site.

Attachment Nº D should contain a list of all unit operations (processes) to be carried out, including flow diagrams of each with any relevant additional information.

Response: Attachment D.1 is included. This includes a list of the unit operations and summary details of the operations/processes that take place on site. An overview of each of the processes is provided, including flow diagrams.

SECTION E: EMISSIONS

E.1. Emissions to Atmosphere

E.1.A. Details of all point emissions to atmosphere

Details of all point emissions to atmosphere should be supplied. Complete Table E.1(i) for Boiler Emissions and Table E.1(ii) and E.1(iii) for all other main emission points. Complete Table E.1(iv) for minor emission points.

A summary list of the emission points, together with maps and/or drawings (no larger than A3), and supporting documentation should be included as **Attachment Nº E**. Plans of emission elevations, relevant roof heights, etc., should also be included, as should detailed descriptions and schematics of all abatement systems.

The applicant should address in particular any emission point where the substances listed in the Schedule of S.I. 394 of 2004 are emitted.

For emissions outside the BAT guidance limit, a full evaluation of the existing abatement/treatment system must be provided. A planned programme of improvement towards meeting upgraded standards is required. This should highlight specific goals and a time scale, together with options for modification, upgrading or replacement as required to bring the emissions within the limits as set out in the BAT guidance note(s). These notes can be found on the EPA website at www.epa.ie.

Response: Attachment E.1.A includes details of point source emissions to atmosphere. The emission points to air are shown on Drawing No. 006 – Ref. 21029/CD/006.

E.1.B. Fugitive and Potential emissions

Give summary details of fugitive and potential emissions in Table E.1(v).

In relation to activities listed in the Schedule of Council Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations;

- specify the relevant category of activity in the Schedule
- specify how the requirements in relation to fugitive emissions will be met.

Full details and any supporting information should form **Attachment E.1.B**

Response: Attachment E.1.B includes details of fugitive emissions to atmosphere. There are no additional potential emissions to atmosphere as part of Project ICE.

The activities of the facility do not fall under any of the categories listed in Annex I of Council 1999/13/EC and therefore this is not applicable to this Licence application.

E.2 Emissions to Surface Waters

Tables E.2(i) and E.2(ii) should be completed.

A summary list of the emission points, together with maps/drawings (no larger than A3) and supporting documentation should be included as **Attachment Nº E.2**.

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.

Details of all List I and List II substances listed in the Annex to EU Directive 76/464/EEC (as amended), contained in any emission must be presented. All surface water runoff and storm water drains discharging to surface water bodies must be included. A National Grid References (12 digit, 6E, 6N) must be given for all discharge points. The identity and type of receiving water (river, ditch, estuary, lake, etc.) must be stated.

For emissions outside the BAT guidance limit, a full evaluation of the existing abatement/treatment system must be provided. A planned programme of improvement towards meeting upgraded standards is required. This should highlight specific goals and a time scale, together with options for modification, upgrading or replacement as required to bring the emissions within the limits as set out in the BAT guidance note(s).

Response*:* See Attachment E.2 in relation to Emissions to Surface Waters. There are no changes from the current licence in relation to the emission points to surface water. The emission points to water are shown on Drawing No. 004 – Ref. 21029/CD/004.

No List I substances are contained in the discharge to surface water from the facility. The List II substances are phosphorus, ammonia and nitrates.

E.3 Emissions to Sewer

Tables E.3(i) and E.3(ii) should be completed.

A summary list of the emission points, together with maps and/or drawings (no larger than A3) and supporting documentation should be included as **Attachment Nº E.3**. Details of all List I and List II substances listed in the Annex to EU Directive 76/464/EEC (as amended), contained in any emission must be presented. All relevant information on the receiving sewer**,** including any effluent treatment/abatement systems, not already described, with schematics as appropriate should also be included in **Attachment Nº E.3**.

For emissions outside BAT guidance limit (where given), a full evaluation of the existing abatement/treatment system must be provided. A planned programme of improvement towards meeting upgraded standards is required. This should highlight specific goals and a time scale, together with options for modification, upgrading or replacement as required to bring the emissions within any limits set out in the BAT guidance note(s).

Response: There are no Emissions to Sewer from the facility. The treated effluent from the on site WWTP is discharged to surface water, as detailed in Section E.2.

E.4. Emissions to Ground

Describe the existing or proposed arrangements necessary to give effect to Articles 3,4,5,6, and 7 of Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution by certain dangerous substances.

The applicant should supply details of the nature and quality of the substance (agricultural and non-agricultural waste) to be landspread (slurry, effluent, sludges etc) as well as the proposed application rates, periods of application and mode of application (e.g., pipe discharge, tanker).

For emissions outside the BAT guidance limit, a full evaluation of the existing abatement/treatment system must be provided. A planned programme of improvement towards meeting upgraded standards is required. This should highlight specific goals and a time scale, together with options for modification, upgrading or replacement as required to bring the emissions within the limits as set out in the BAT guidance note(s).

Response: There are no emissions to ground at the Abbott Cootehill site. Various containment measures (bunding of materials stored on site etc.) have been incorporated into the design of the plant to prevent / contain any accidental releases which could potentially impact on ground or groundwater quality.

Sludge is produced at the WWTP and will increase by approximately 60% once Project ICE has been completed. Sludge is currently sent off site to a permitted composting facility (See Section H). However, the applicant has previously sent sludge off site for landspreading and may do this again in the future. Therefore there may be emissions to ground off-site.

Attachment E.4 includes details on the emissions to ground. Attachment E.4.1 contains the most recent sludge recycling report, 2010. The Nutrient Management Plan (NMP) for receiving lands and supporting documentation is included in Section I.4 of this application as part of the assessment of potential impacts on the environment.

E.5 Noise Emissions

Give particulars of the source, location, nature, level, and the period or periods during which the noise emissions are made or are to be made.

Table E.5(i) should be completed, as relevant, for each source.

Supporting information should form **Attachment Nº E.5**

For emissions outside the EPA Guidance Note for Noise in elation to Scheduled Activities 2nd Edition (2006), a full evaluation of the existing abatement/treatment system must be provided. A planned programme of improvement towards meeting upgraded standards is required. This should highlight specific goals and a time scale, together with options for modification, upgrading or replacement as required to bring the emissions within the limits as set out in the Guidance Note.

Response: See Attachment E.5 in relation to Noise Emissions. The noise emission points are shown on Drawing No. 007 – Ref. 21029/CD/006.

E.6 Tabular Data on Emission Points

Applicants should submit the following information for each emission point:

Point Code	Point Type	Easting	Northing	Verified	Emission
Provide label ID's assigned in section E	A=Atmospheric SW=Surface Water SE = Sewer GW=Groundwater N = Noise SL=Soil/Ground WS=Waste	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used	e.g. SO_2, HCl, NH_3

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. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.2, E.6 and F.3.

Response: Please see Attachment E.6 for full table of emission points.

SECTION F: CONTROL & MONITORING

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

F.1: Treatment, Abatement and Control Systems

Details of treatment/abatement systems (air and effluent emissions) should be included, together with schematics as appropriate.

For each Emission Point identified complete Table F.1(i) and include detailed descriptions and schematics of all abatement systems.

Attachment Nº F.1 should contain any supporting information.

Response: Attachment F.1 includes information on the treatment, abatement and control systems in place for air and effluent emissions from the facility. The proposed abatement technologies or control systems as part of Project ICE are as follows:

- Upgraded WWTP. The wastewater treatment plant will be upgraded to accommodate the increase in volumetric flow and mass loadings of the effluent.

- Currently the condensate (produced from the Simlac production process) is being diverted to the WWTP due to TOC (Total Organic Carbon) spikes that have been recorded in the condensate discharge. A TOC monitor and divert system is proposed for the condensate stream, which would shut off discharge to the river and divert the discharge to the WWTP automatically should high TOC be detected.

Drawing No. 008 – Ref. 21029/CD/008 shows the current and proposed abatement and control systems for the facility.

F.2: Emissions Monitoring and Sampling Points

Identify monitoring and sampling points and outline proposals for monitoring **emissions**. Table F.2(i) should be completed (where relevant) for air emissions, for emissions to surface waters, for emissions to sewers, for emissions to ground, and for waste emissions. Where **ambient** environment monitoring is carried out or proposed, Table F.2(ii) should be completed as relevant for each environmental medium.

Include details of monitoring/sampling locations and methods.

Attachment Nº F.2 should contain any supporting information.

Response: Attachment F.2 includes a drawing showing existing monitoring locations – Drawing No. 005 – Ref. 21029/CD/005. The attachment also includes details of monitoring and sampling methods, and analysis and proposals for altering monitoring points and current limits.

F.3: Tabular Data on Monitoring and Sampling Points

Applicants 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	6N-digit GPS Irish	Y = GPS used N = GPS not	e.g. SO_2, HCl, NH_3

assigned in section F3		National Grid Reference	National Grid Reference	used	

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. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.2, E.6 and F.3.

Point source monitoring/sampling refers to monitoring from specific emission points (e.g. from a boiler stack or outlet from a wastewater treatment plant). Examples of ambient monitoring includes monitoring of ambient air quality (e.g. boundary or off-site) or monitoring of river quality upstream/downstream of an effluent discharge.

Response: Attachment F.3 includes the tabular data for the monitoring and sampling points at the facility.

SECTION G: RESOURCE USE AND ENERGY EFFICIENCY

G.1 Give a list of the raw and ancillary materials, substances, preparations, fuels and energy which will be produced by or utilised in the activity.

The list(s) given should be very comprehensive, all materials used, fuels, intermediates, laboratory chemicals and product should be included.

Particular attention should be paid to materials and product consisting of, or containing, dangerous substances as described in the EC (Classification, Packaging, Labelling and Notification of Dangerous Substances) Regulations 1994 [SI 77/94]. The list must classify these materials in accordance with Article 2 of these Regulations, and must specify the designated Risk Phrases (R-Phrases) of each substance in accordance with Schedule 2 of the Regulations.

Tables G.1(i) and G.1(ii) must be completed. Copy as required.

Supporting information should be given in **Attachment Nº G.**

Response: MSDS (Material Safety Data Sheets) for relevant/main materials and laboratory chemicals used on site are available on site as required. Tables G.1(i) and G.1(ii) are completed.

G.2 Energy Efficiency

A description of the energy used in or generated by the activity must be provided. Outline the measures taken to ensure that energy is used efficiently and where appropriate, an energy audit with reference to the EPA Guidance document on Energy Audits should be carried out.

Response: Attachment G.2.1 includes an overview of the energy saving measures for the facility and the effect of Project ICE on energy consumption. The energy consumption figures for 2009 and 2010 are shown below. Predicted fuel/energy consumption once ICE is fully in place and capacity at the facility has increased by 40%, is shown below. This will be an increase of approximately 25%.

Source	Year	Quantity	Units
Diesel/Gas Oil	2009	9,534,441	litres
	2010	10,389,825.1	litres
	incl. ICE	11,918,051	litres
LPG	2009	1.4	tonnes
	2010	2.5	tonnes
	incl. ICE	1.75	tonnes
Electricity	2009	21,240,382	kWH
	2010	19.091,712	kWH
	incl. ICE	26,550,478	kWH

Abbott has in place an Energy Management System, which was certified to IS 393 in June 2009 and to IS EN 16001 – Energy Management Systems in May 2010. This Standard sets out the requirements for an Energy Management System (EMS) and has been developed to assist organisations to improve their energy efficiency in a logical, controlled and systematic way. More details are included as Attachment G.2.1.

Abbott is continuously trying to reduce energy use and increase the efficiency of the facility. An energy performance review was carried out by the facility and the report was produced in April 2010. An excerpt of the energy performance statement for 2009 is included as Attachment G.2.2 (note: this is an edited version of the report as some information contained in the report is considered commercially sensitive).

Attachment G.2.3 includes the Standard Operating Procedure (SOP) for Energy Monitoring on site, which is part of the certified Energy Management System (IS EN 16001) for the site. These SOPs will continue to be implemented through the installation and operation of Project ICE.

Attachment G.2.4 includes the energy reduction objectives and targets, which are part of the EMS for the facility, for 2011 and also those for the previous year, 2010.

SECTION H: MATERIALS HANDLING

H.1 Raw Materials, Intermediates and Product Handling

All materials should be listed in Tables G.1(i) and G.(ii) of Section G.

Details of the storage conditions, location within the site, segregation system used and transport systems within the site should be outlined here. In addition, information relating to the integrity, impermeability and recent testing of pipes, tanks and bund areas should be outlined.

Response: All materials and products are listed in Tables G.1(i) and G.1(ii) of Section G of this application.

Storage conditions for materials, ingredients, and products are outlined below. The main storage areas on site are shown on Drawing No. 9: 21029/CD/009.

Packaging, Minor Ingredients and Materials

All incoming packaging materials (cans, cases, scoops, lids, etc.), dry ingredients and other minor ingredients are stored in the warehouse. This department has responsibility for the receipt of all materials from suppliers, together with the storage, recording and issuing of these materials to the appropriate production department. All materials are logged into a computerised system for inventory control purposes.

Storage of Hazardous Liquids and Gases

The **utilities bund** contains the following:

- 2 x gas oil tanks (150 m^3 each)
- 1 x separately bunded 10.6 m^3 polyaluminiumchloride tank
- 1 x separately bunded 30 tonne bulk caustic tank
- 1 x separately bunded 27 tonne m^3 bulk nitric acid tank

Process flow diagram AIC-00-050 shows caustic and acid storage on site.

The **utilities area** contains the following:

- 1 x 26.15 m^3 bulk nitrogen storage vessel
- 1 x 13.15 m^3 CO_2 bulk storage vessel
- 1 x 2.27m^3 propane gas vessel (for starting boilers)
- 1 x 200 litre argon vessel (for laboratory use)

Within the Utilities area, there are also the following storage areas:

- Storage area for various gas bottles containing argon, acetylene, helium, hydrogen, Carbon dioxide, nitrogen and oxygen
- A housed bunded area for a poly make up unit
- 2 no. housed areas for generation of oxygen/ozone
- A “chlorine” room containing gas bottles of chlorine
- 2 no. bunded cabinets containing NaOH, NaOCl and HCl
- 2 no. housed areas containing bunds for NaOH, NaOCl and HCL.

Ammonia is the main refrigerant used on site No storage of ammonia occurs on site, all ammonia used is contained within the refrigeration system.

The external **CIP Area** has a dedicated contained area (with drain to effluent treatment plant) contains the following:

- 1 x 30,000 litre Dilute Nitric acid tank
- 1 x 18,000 litre Dilute Nitric acid tank
- 1 x 30,000 litre Dilute Caustic tank
- 1 x 18,000 litre Dilute Caustic tank

These tanks are fed from bulk caustic and nitric tanks and made up to the required strength as required.

The **waste water treatment** area contains the following:

- 1 x Bulk Ferric-sulphate tank (11.9m^3) in dedicated bund
- 1 x Bulk caustic tank (11.9m^3) in dedicated bund
- 1 x Bulk Sulphuric acid tank (16.8 m^3) in dedicated bund

- 1 x Bunded IBC containing 1 m^3 molasses
- 1 x Bunded IBC containing 1 m^3 urea
- 2 x Bunded IBCs each containing 1 m^3 phosphoric acid
- Waste oil containers in bunded section of SBR blower room
- Powdered poly stored in racking in waste water treatment stores
- A housed bunded area for poly make up unit
- A 98 m^3 diesel tank is located in the emergency diesel generators area in the waste water treatment area.

Other:

There are two 1.665 m^3 diesel tanks located in a bund alongside the diesel pumps in the raw water intake building at the factory entrance to supply diesel to the emergency sprinkler pumps.

Containers of waste oil are held in a dedicated bunded area adjacent to the CIP area.

Various different lubricating oils are used on site in drummed quantities.

Liquid flavouring is stored in IBC's in a dedicated store. This store has a drainage system that drains to an underground sump with a high level alarm. Any leaks or spills are diverted to the waste water treatment plant under controlled conditions.

The site also contains local split HVAC units, refrigerators and a freezer for storage of temperature sensitive food oils.

Small containers of chemicals are stored in a separate room dedicated to laboratory chemicals.

Storage of Raw Ingredients
Vegetable oil, syrup and skim milk is supplied to the site in bulk tankers and stored in bulk storage silos. The storage provisions are as follows:

- Vegetable oil is – 10 x 36.5m^3 stainless steel bulk silos
- Syrup - 2 no. 137 m^3 stainless steel bulk silos
- Skim milk/processed milk - 14 no. 136 m^3 stainless steel bulk silos
- Dry ingredients - 9 no. silos (as well as on dedicated warehouse racking in various bag sizes)

The vegetable oil, syrup and milk silos have high-level alarms. In the event of a spill/leak vegetable oil, syrup or milk drains to foul drains which divert to the onsite wastewater treatment plant.

Attachment H.1.1 contains the most recent bund integrity test report from 2008. A number of issues arose from the bund assessment; Attachment H.1.1 also contains the bund management programme for 2009 – 2010 in order to deal with these issues – all of which have been resolved satisfactorily. An underground pipe assessment was carried out in 2009 and 2010; any issues arising from the assessment have been satisfactorily addressed.

Attachment H.1.2 includes the SOP for Spills which is part of the certified EMS to ISO14001 for the site.

Other than the bunding installed as part of the water treatment plant upgrade and an enclosed bunded area for a poly make-up unit in the WWTP, there will be no requirement for additional bunding for the installation and operation of Project ICE.

In relation to transport systems on site there are a number of SOPs which are part of the EMS for the facility that outline how transport of ingredients and raw materials are transported onto and around the site. There is also a specific SOP for the transport of hazardous materials on site. Attachment H.1.3 includes the SOPs for transport on site.

H.2 Describe the arrangements for the recovery or disposal of solid and liquid wastes accepted into or generated by the installation / facility.

For each waste material, give full particulars of:

(a) Name

(b) Description & nature of waste

(c) Source

(d) Where stored and integrity/impermeability of storage areas

(e) Amount (m^3) and tonnage

(f) Period or Periods of generation

(g) Analysis (include test methods and Q.C.)

(h) European Waste Catalogue Code

(i) Waste Category per EC Reg 1774/2002/EC where relevant

Where any waste would be classified as Hazardous Waste as defined in the Waste Management Acts, 1996 to 2003, this should be made clear in the information provided.

Summary Tables H.1(i) and H.1(ii) should also be completed, as appropriate, for each waste. The licence/permit register number of the waste collection agent or disposal/recovery operator should be supplied as well as the expiry date of the relevant permits.

Supporting information should form **Attachment Nº H.2**

Response: The waste generated at the site is presented in Tables H.1(i) and H(ii). No additional waste types will be generated as a result of the implementation of all elements of ICE Project other than screenings taken from the raw influent screening in the WWTP.

There will be a slight increase in the waste volumes generated at the facility, which is estimated to be approximately 10% (with the exception of packaging (20%) and sludge (a maximum of 60%)) of 2009 waste figures. This increase has been reflected in the Tables presented as H.1(i) and H.2(ii), which shows the predicted waste generation amounts. It should be noted that the list of waste contractors used by the facility to recycle/recover/recycle the wastes generated at the site is current.

Non Hazardous Waste Management
All recyclable wastes are segregated on site and collected for recycling by permitted waste contractors. General non-hazardous wastes are compacted on site and collected

for disposal by a licensed waste disposal contractor. Raw influent screening will take place at the inlet works of the upgraded WWTP once it has been completed, to catch any objects e.g. ear plugs, hairnets etc. (currently there is a macerator on site to deal with these objects – this will be removed). These will be captured in an industrial wheel bin and sealed in a plastic bag for disposal.

All documentation is retained on site in accordance with legislative requirements and the ISO 14001 certified Environmental Management System accredited to the site.

Hazardous Waste Management
All hazardous waste is labelled appropriately, covered where necessary and stored in contained areas on site before being collected by a permitted hazardous waste contractor and brought to a licensed facility for disposal, recovery or recycling. This includes laboratory wastes, empty hazardous containers and waste oils. All documentation is retained on site in accordance with legislative requirements and the ISO 14001 certified Environmental Management System accredited to the site.

Attachment H.2.1 includes the SOPs for the accredited EMS for hazardous and non-hazardous waste management on site. The following documents are included:
- SOP Hazardous Waste Management
- SOP Canteen Waste Management
- SOP Segregation and Storage of Drummed Waste Material
- SOP Laboratory Waste Testing
- SOP Waste Compactor

H.3 Waste disposal by on-site landfilling

For wastes to be disposed of by landfilling on-site, full details of the disposal site should be submitted (to include *inter alia,* site selection procedures, location maps, (no larger than A3) geology, hydrogeology, operational plan, containment, gas and leachate management, post-closure care).

Response: There is no landfilling on-site.

Supporting information should form **Attachment Nº H.3.** N/A

SECTION I: EXISTING ENVIRONMENT & IMPACT OF THE ACTIVITY

Describe the conditions of the site of the installation.

Provide an assessment of the effects of any emissions on the environment, including on an environmental medium other than that into which the emissions are made.

Describe, where appropriate, measures for minimising pollution over long distances or in the territory of other states.

I.1.Assessment of atmospheric emissions
Describe the existing environment in terms of air quality with particular reference to ambient air quality standards.

Provide a statement whether or not emissions of main polluting substances (as defined in the Schedule of S.I. 394 of 2004) to the atmosphere are likely to impair the environment.

Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

Attachment Nº I.1 should also contain full details of any dispersion modelling of atmospheric emissions from the activity, where required. When carrying out dispersion modelling, regard should be had to the "Guidelines for the Preparation of Dispersion Modelling Assessments for Compliance with Regulatory Requirements – an Update to Royal Meteorological Society Guidance" or similar guidelines from a recognised authority.

Response: Emissions of main polluting substances (as defined in the Schedule of S.I. 394 of 2004) to the atmosphere from the facility are not likely to impair the environment.

Attachment I.1 includes information on existing air quality, and an assessment of impacts of the facility on the environment. Attachment I.1.1 includes the air dispersion modelling report.

I.2. Assessment of Impact on Receiving Surface Water

Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Table I.2(i) should be completed.

Provide a statement whether or not emissions of main polluting substances (as defined in the Schedule of S.I. 394 of 2004) to water are likely to impair the environment.

Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

Full details of the assessment and any other relevant information on the receiving environment should be submitted as **Attachment Nº I.2.**

Response: Emissions of main polluting substances (as defined in the Schedule of S.I. 394 of 2004) to the receiving surface water body from the facility are not likely to impair the environment.

Attachment I.2 includes information on existing surface water quality, and an assessment of impacts of the facility on the environment. Attachment I.2.1 includes the assimilative capacity report, showing the predicted effect of the discharge of the treated effluent on the Dromore River. Attachment I.2.2 shows the predicted impact on the lake levels due to the increase in water consumption at the facility and includes submissions to the Fisheries Board in relation to flow in the Dromore River and the weir adjacent to the facility.

It should be noted that consultation with the Fisheries Board has been ongoing throughout the application preparation. Further details on this are included in Attachment I.2.

I.3. Assessment of Impact of Sewage Discharge.

Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

Full details of the assessment and any other supporting information should form **Attachment Nº I.3.**

Response: There will be no sewage discharge from the facility, as there is a WWTP on site. The discharge of the final treated effluent is dealt with in Section I.2 and the sludge waste management is dealt with in Section I.4.

I.4 Assessment of Impact of Ground/Groundwater Emissions

Describe the existing groundwater quality. Tables I.4(i) should be completed.
Give summary details and an assessment of the impacts of any existing or proposed emissions on the ground (aquifers, soils, sub-soils and rock environment), including any impact on environmental media other than those into which the emissions are to be made. This includes landspreading, land injection etc.

Land on which material may be landspread shall be identified on a suitable scaled map (1:10,560 and 1:50,000) and submitted as no greater than A3 size. All vulnerable (as a result of ground emissions) surface water bodies must be identified on these maps. Additional information should be included in **Attachment Nº I.4**.

Landspreading of Agricultural/Non Agricultural Wastes

Tables I.4(ii) and I.4.(iii) should be complete where applicable. Further information is available in the Application Guidance Document.

***Response*:** There are currently no landspreading activities being carried out; however this may change in the future and the applicant requests that landspreading is included in the reviewed Licence. Attachment I.4 includes details of the landspreading activities off-site. The most recent groundwater quality monitoring data is presented in Table I.4(i) and as Attachment I.4.1.

A history of the groundwater quality and previous remediation work is presented in Attachment I.5.

I.5 Ground and/or Groundwater Contamination

Summary details of known ground and/or groundwater contamination, historical or current, on, or under, the site must be given.

Full details including all relevant investigative studies, assessments, or reports, monitoring results, location and design of monitoring installations, plans, drawings, documentation, including containment engineering, remedial works, and any other supporting information should be included in **Attachment Nº I.5**.

Response: **Previous Groundwater Contamination**

In April 1997 a small leak was detected in an underground fuel diesel line feeding the generator after evidence of a small volume of oil was observed on the surface of the Dromore River. Monaghan County Council and the Northern Regional Fisheries Board were contacted. These bodies were involved in the deciding what correction/preventative action and monitoring was required. Upon further investigation by Abbott personnel it was discovered that fuel was leaking from an embankment on their property and making its way into the main storm drainage along the road which discharged into the river.

After a site walkover and full investigation, conducted by Alpha Environmental Ltd., an environmental consultancy, it was determined that the source of the leak was from an underground fuel pipe which led from oil storage tanks that fed the generator. Alpha supplied Abbott Ireland with emergency containment products to ensure that water pollution was minimised. Further investigation, treatment and analysis was carried out at

the time. The final report issued by Alpha concluded that the soil remediation had been successful.

Minerex Environmental Ltd. (MEL) was commissioned by PM in July 2002 to carry out a full hydrogeological investigation of the Abbott Ireland site to establish baseline conditions of soil and groundwater. Further details are included in Attachment I.5.

I.6 Assessment of the Environmental Impact of On-site Waste Recovery and/or Disposal.

Describe the arrangements for the prevention and recovery of waste generated by the activity.

Give details, and an assessment of the impact of any existing or proposed on-site waste recovery/disposal on the environment, including environmental media other than those into which the emissions are to be made.

This information should form **Attachment Nº I.6.**

Response: There are no existing or proposed on-site waste recovery/disposal activities.

As part of the EMS, waste reduction and prevention is one of the aims and specific objectives and targets are set for this purpose. A recent survey was carried out to establish baseline waste generation at the facility. From this baseline, a target has been set to reduce waste generation by 10% by 2015. Waste management objectives and targets are set as part of the EMS in place at the site.

Non Hazardous Waste Management
All recyclable wastes are segregated on site and collected for recycling by permitted waste contractors. General non-hazardous wastes are compacted on site and collected for disposal by a licensed waste disposal contractor. All documentation is retained on site in accordance with legislative requirements and the ISO 14001 certified Environmental Management System accredited to the site.

Hazardous Waste Management
All hazardous waste is labelled appropriately, covered where necessary and stored in contained areas on site before being collected by a permitted hazardous waste contractor and brought to a licensed facility for disposal, recovery or recycling. This includes laboratory wastes, empty hazardous containers and waste oils. All documentation is retained on site in accordance with legislative requirements and the ISO 14001 certified Environmental Management System accredited to the site.

See Attachment I.6.1 for the SOPs for hazardous and non-hazardous waste management on site. The following documents are included:
- SOP Hazardous Waste Management
- SOP Canteen Waste Management
- SOP Segregation and Storage of Drummed Waste Material
- SOP Laboratory Waste Testing
- SOP Waste Compactor

I.7 Noise Impact

Give details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

Ambient noise measurements
Complete Table I.7(i) in relation to the information required below:

(i) State the maximum Sound Pressure Levels which will be experienced at typical points on the boundary of the operation. (State sampling interval and duration)

(ii) State the maximum Sound Pressure Levels which will be experienced at typical noise sensitive locations, outside the boundary of the operation.

(iii) Give details of the background noise levels experienced at the site in the absence of noise from this operation.

Prediction models, maps (no larger than A3), diagrams and supporting documents, including details of noise attenuation and noise proposed control measures to be employed, should form **Attachment Nº I.7.**

Response: See Attachment I.7.

I.8 Environmental Considerations and BAT

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

Describe any environmental considerations which have been 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;
(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.

Supporting information should form **Attachment Nº I.8.**
No attachment required.

Response:
No alternatives to the proposed ICE Project could be considered as ICE is the expansion in production capacity of the existing Abbott Cootehill Manufacturing Facility.

Key criteria for the technology design and selection process were:

- Minimisation of energy consumption,
- Maximising resource utilisation
- Minimising environmental emissions.

For all new plant including the wastewater treatment plant and water treatment plant, a tender process was executed, whereby a number of potential suppliers were considered in relation to the above criteria, in addition to a number of non-environmental criteria.

The BREF Note for Food, Drink and Milk Processing Industries (EPA, August 2006) has been taken into account, with Best Available Techniques (BAT) considered for all aspects of the activities at the facility. According to the BREF Note, the most significant environmental issues associated with FDM installations are water consumption and contamination; energy consumption; and waste minimisation.

Section D.1 outlines the technologies used for water treatment and wastewater/effluent treatment. More detail on the upgrades to the existing plant, which apply best available technology are contained in Section D.1, with an overview given below. Of the applied processes and techniques outlined in the BREF, the relevant areas are outlined in this section. In addition, Sections F.1 and F.2 of the IPPC Licence review application show the abatement and monitoring systems in place at the facility.

Environmental considerations which have been made with respect to the use of cleaner technologies, waste minimisation and raw material substitution include the following:

Cleaner Technologies

Water Treatment

- UF (ultrafiltration) membrane technology for potable water treatment which eliminates the requirement for the use of a number of water treatment chemicals which are associated with sand filtration systems

Wastewater/Effluent Treatment

- Disc filter and Acti-Flow micro-sand filter technology will be installed on the effluent treatment plant rather than conventional sand filters, leading to lower chemical usage

- Replacement of batch SBR system with continuous activated sludge system to provide consistently higher wastewater quality

- Provision of clarifiers external to aeration chamber to enhance solids removal efficiency

Refrigeration Plant

- Reduction of ammonia usage in refrigeration plant by elimination of ice-box (this technology used a large volume of ammonia and was considered to be an inefficient method of providing chilling capacity)

Energy Efficiency Improvements

- The use of VSD (Variable Speed Drives) to minimize energy consumption and hence indirect carbon emissions

- Energy efficient motors were selected for key equipment to minimise the environmental impacts associated with energy consumption

- Design and installation of exhaust heat recovery systems for drier exhaust to reduce fossil fuel consumption; this is used to generate heat in the plant

- Design and installation of heat recovery system for condensate, to reduce fossil fuel consumption, this is used to generate heat in the plant

- Replacement of old refrigeration compressor with new higher efficiency compressor fitted with energy efficient variable speed drive

Waste Minimisation

- A target of 10% reduction in waste generation at the facility has been set to be achieved by 2015. A recent waste survey was completed to determine the waste types generated and to establish a baseline against which targets could be set

- Continuation of on-site waste reduction programme by returning containers and packaging for re-use where possible

Raw Material & Chemicals Substitution

- It is not possible for Abbott Cootehill to substitute raw materials; milk and milk powder are the primary raw materials used and there is no substitute for milk

- Roll out of new bulk bagging system leading to lower use of virgin packaging materials and lower generation of packaging

- Introduction of cleaner chemicals on site with an associated lower environmental footprint and reduction in the amount of certain chemicals used

(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;

As outlined above the best available techniques are already in place at the facility (for air emissions, odour control and water emissions), have been recently been or are due to be upgraded (e.g. WWTP, refrigeration plant and water treatment plant). Sections D.1 and F provide more information.

(b) no significant pollution is caused;

The facility has been operating under an IPPC Licence since 2005, and the controls and monitoring systems are in place to ensure that no significant pollution is caused by the activities at the site. Section E of the application provides information on recent environmental monitoring results. Abbott has a certified EMS in place, to ISO14001, with associated objectives and targets for all aspects of environmental protection

(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;

As outlined above, reduction of waste production measures are in place at the facility with an overall target to further reduce waste generation by 2015 by 10%.

(d) energy and other resources are used efficiently;

Energy efficiency is a prime consideration at the facility for both environmental and economic reasons. Section G.2 outlines all energy efficiency measures that have been employed at the site. Abbott has in place an Energy Management System, which was certified to IS EN 16001 – Energy Management Systems in May 2010.

There is also a commitment to conservation of other resources, such as virgin materials, chemicals, ingredients, packaging materials at the facility, with a number of Standard Operating Procedures (SOPs) in place to minimise wastage and to reduce consumption insofar as possible. These SOPs are included with Sections H.1 and C.2.1 of the application.

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

There are a wide number of controls and monitoring systems in place at the facility, along with SOPs, to ensure that accidents are prevented (from both an environmental and health and safety aspect). In addition, specific and comprehensive training is provided to employees and management as part of the overall operation of the facility.

There is an accident and emergency response plan in place for the facility. This plan is included with the application as Attachment J.1.

(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.

Abbott commit to providing required finances and sufficient resources to fully decommission the site in the event of closure, including to render safe, or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter container therein or thereon that may result in environmental pollution.

Abbott Cootehill will adhere to the EPA 'Guidance on Environmental Liability Risk Assessment, Residuals Management Plans and Financial Provision' 2006, in the event of closure or partial closure of site operations and will engage fully with the EPA on all aspects of decommissioning operations.

SECTION J: ACCIDENT PREVENTION & EMERGENCY RESPONSE

Describe the existing or proposed measures, including emergency procedures, to minimise the impact on the environment of an accidental emission or spillage.

Also outline what provisions have been made for response to emergency situations outside of normal working hours, i.e. during night-time, weekends and holiday periods.

Describe the arrangements for abnormal operating conditions including start-up, leaks, malfunctions or momentary stoppages.

Supporting information should form **Attachment Nº J.**

Response: There is an accident and emergency response plan in place for the facility. This plan was updated in March 2010 and the main text is included as Attachment J.1. In addition there is an SOP in place for accidents or incidents that may occur on site, as part of the accredited ISO14001 EMS. This SOP is included as Attachment J.2.

SECTION K: REMEDIATION, DECOMMISSIONING, RESTORATION & AFTERCARE

Describe the existing or proposed measures to minimise the impact on the environment after the activity or part of the activity ceases operation, including provision for post-closure care of any potentially polluting residuals.

Supporting information should be included as **Attachment No. K.**

Response: Abbott Cootehill commit to providing required finances and sufficient resources to fully decommission the site in the event of closure, including to render safe, or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter container therein or thereon that may result in environmental pollution.

Abbott Cootehill will adhere to the EPA 'Guidance on Environmental Liability Risk Assessment, Residuals Management Plans and Financial Provision' 2006, in the event of closure or partial closure of site operations and will engage fully with the EPA on all aspects of decommissioning operations.

A Residual Management Plan to fully detail the arrangements and costs for site decommissioning or closure or part thereof can be prepared, where requested by the EPA.

SECTION L: STATUTORY REQUIREMENTS

Indicate how the requirements of Section 83(5)(a)(i) to (v) and (vii) to (x) of the EPA Acts, 1992 and 2003 shall be met, having regard, where appropriate, to any relevant specification issued by the Agency under section 5 (3) of the Act and the reasons for the selection of the arrangements proposed.

Indicate whether or not the activity is carried out, or may be carried out, or is located such that it is liable to have an adverse effect on -

(a) a site placed on a list in accordance with Chapter 1 of SI 94 of 1997, or

(b) a site where consultation has been initiated in accordance with Article 5 of the EU Habitats Directive (92/43/EEC) or

Indicate whether or not the activity is liable to have an adverse effect on water quality in light of S.I. No. 258 of 1998 (Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorus) Regulations, 1998).

Indicate whether any of the substances specified in the Schedule of the EPA (Licensing)(Amendment) 2004, S.I. 394 of 2004, are discharged by the activity to the relevant medium.

Fit and Proper Person

The PoE Act in Section 83(5)(xi) specifies that the Agency shall not grant a licence unless it is satisfied that the applicant or licensee or transferee as the case may be is a fit and proper person. Section 84(4) of the PoE Act specifies the information required to enable a determination to be made by the Agency.

- Indicate whether the applicant or other relevant person has been convicted under the PoE Act, the Waste Management Act 1996, the Local Government (Water pollution) Acts 1977 and 1990 or the Air Pollution Act 1987.

- Provide details of the applicant's technical knowledge and/or qualifications, along with that of other relevant employees.

- Provide information to show that the person is likely to be in a position to meet any financial commitments or liabilities that may have been or will be entered into or incurred in carrying on the activity to which the application relates or in consequence of ceasing to carry out that activity.

Supporting information should be included as **Attachment Nº L** with reference to where the information can be found in the application.

Response: The operator has not changed and therefore the applicant's technical knowledge and/or qualifications have not altered for the most part.

The role of EHS and Operations Manager has recently been taken over by Mr John Rohan from Mr Sean Curtin, who has retired. The EHS and Operations Manager has overall responsibility for the environment at the facility. The current EHS coordinator (Ms Petrina Ashford) is responsible for the day to day environmental aspects of the facility, aided by Mr John Rohan. The EHS and Operations Manager and the Environmental Co-ordinator's qualifications are included as Attachment L.1.

Evidence of the applicant's ability to meet any financial commitments or liabilities is included as Attachment L.2 – Insurance Certificate. This is the Employer's Liability insurance cert.

SECTION M: DECLARATION

Declaration

I hereby make application for a licence / revised licence, pursuant to the provisions of the Environmental Protection Agency Acts, 1992 and 2003 and Regulations made thereunder.

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

I give consent to the EPA to copy this application 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 local authority offices, and via the EPA's website. This consent relates to this application itself and to any further information, submission, objection, or submission to an objection whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

Signed by: _____ **Date:** 26/04/11
(on behalf of the organisation)

Print signature name: JOHN KILCOYNE

Position in organisation: PLANT MANAGER.

Company stamp or seal:

[illegible] IRELAND
Dromore West,
Cootehill, Co. Cavan,

ANNEX 1: TABLES / ATTACHMENTS

Table E.1 (i) BOILER EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point: Boiler No. 1 (A1-1)

Emission Point Ref. Nº:	A1-1	
Location:	Boiler House	
Grid Ref. (12 digit, 6E,6N):	259801E, 315380N	
Vent Details	Diameter: 1 m	Height above Ground(m): 40 m
Date of commencement of emission:	February 2004	

Characteristics of Emission:

Boiler rating Steam Output: Thermal Input:			26,000 kg/hr 22 MW
Boiler fuel Type: Maximum rate at which fuel is burned % sulphur content:			Gas Oil 1,475 kg/hr <0.1%
NOx			225 mg/Nm^3 0ºC. 3% O_2(Liquid or Gas), 6% O_2(Solid Fuel)
Maximum volume* of emission			43,632 m^3/hr 0ºC, 3 % O_2 (liquid or gas), 6 % O_2 (solid fuel)
Temperature	265 ºC(max)	160 ºC(min)	165 ºC(avg)

* Volume flow limits for emissions to atmosphere shall be based on Normal conditions of temperature and pressure, (i.e. 0ºC,101.3kPa), dry gas; 3% oxygen for liquid and gas fuels; 6% oxygen for solid fuels.

(i) 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	350 day/yr	

Emission Point: Boiler No.2 (A1-2)

Emission Point Ref. Nº:	A1-2	
Location:	Boiler House	
Grid Ref. (12 digit, 6E,6N):	259801E, 315380N	
Vent Details	Diameter: 1 m	Height above Ground(m): 40 m
Date of commencement of emission:	February 2004	

Characteristics of Emission:

Boiler rating Steam Output: Thermal Input:		 26,000 kg/hr 22 MW
Boiler fuel Type: Maximum rate at which fuel is burned % sulphur content:		 Gas Oil 1,475 kg/hr <0.1%
NOx		225 mg/Nm^3 0ºC. 3% O_2(Liquid or Gas), 6% O_2(Solid Fuel)
Maximum volume* of emission		43,632 m^3/hr 0ºC, 3 % O_2 (liquid or gas), 6 % O_2 (solid fuel)
Temperature	265 ºC(max) 160 ºC(min)	178 ºC(avg)

* Volume flow limits for emissions to atmosphere shall be based on Normal conditions of temperature and pressure, (i.e. 0ºC,101.3kPa), dry gas; 3% oxygen for liquid and gas fuels; 6% oxygen for solid fuels.

(i) 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	350	day/yr

Emission Point: Boiler No. 3 (A1-3)

Emission Point Ref. Nº:	A1-3	
Location:	Boiler House	
Grid Ref. (12 digit, 6E,6N):	259801E, 315380N	
Vent Details	Diameter: 1 m	Height above Ground(m): 40 m
Date of commencement of emission:	February 2004	

Characteristics of Emission:

Boiler rating Steam Output: Thermal Input:			26,000 kg/hr 22 MW
Boiler fuel Type: Maximum rate at which fuel is burned % sulphur content:			Gas Oil 1,475 kg/hr <0.1%
NOx			225 mg/Nm^3 0ºC. 3% O_2(Liquid or Gas), 6% O_2(Solid Fuel)
Maximum volume* of emission			43,632 m^3/hr 0ºC, 3 % O_2 (liquid or gas), 6 % O_2 (solid fuel)
Temperature	265 ºC(max)	160 ºC(min)	160 - 228 ºC(avg)

* Volume flow limits for emissions to atmosphere shall be based on Normal conditions of temperature and pressure, (i.e. 0ºC,101.3kPa), dry gas; 3% oxygen for liquid and gas fuels; 6% oxygen for solid fuels.

(i) 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	350 day/yr	

TABLE E.1(ii) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point: Dryer Tower No. 1 (A2-1)

Emission Point Ref. Nº:	A2-1
Source of Emission:	Dryer Tower No. 1
Location:	Dryer Tower Roof
Grid Ref. (12 digit, 6E,6N):	259793E, 315341N
Vent Details Diameter: Height above Ground(m):	1.59 m 37.06 m
Date of commencement:	Already in operation

Characteristics of Emission:

(i) Volume to be emitted:			
Average/day	3,451,416 m^3/d	Maximum/day	3,620,160 m^3/d
Maximum rate/hour	150,840 m^3/h	Min efflux velocity	20.25 $m.sec^{-1}$
(ii) Other factors			
Temperature	90 °C(max) 50 °C(min)		70 °C(avg)
For Combustion Sources: Volume terms expressed as : ☐ wet. ☐ dry. _____3___ $\%O_2$			

(iii) 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 350 day/yr

TABLE E.1(iii): MAIN EMISSIONS TO ATMOSPHERE - Chemical characteristics of the emission (1 table per emission point)

Emission Point Reference Number: A2-1_____

Parameter	Prior to treatment[1]				Brief description of treatment	As discharged[1]					
	mg/Nm^3		kg/h			mg/Nm^3		kg/h.		kg/year	
	Avg	Max	Avg	Max		Avg	Max	Avg	Max	Avg	Max
Particulates	NM[2]	NM[2]	NM[2]	NM[2]	Cyclone & Bag filter	4.4	20	3.02	3.1	25,368	26,040

1. Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0^{o}C,101.3kPa). Wet/dry should be the same as given in Table E.1(ii) unless clearly stated otherwise.

Emission Point: Dryer Tower No. 2 (A2-2)

Emission Point Ref. Nº:	A2-2
Source of Emission:	Dryer Tower No.2
Location:	Dryer Tower Roof
Grid Ref. (12 digit, 6E,6N):	259774E, 315386N
Vent Details Diameter: Height above Ground(m):	1.59 m 36.15 m
Date of commencement:	December 2004

Characteristics of Emission:

(i) Volume to be emitted:

Average/day	4,264,056 m^3/d	Maximum/day	4,300,000 m^3/d
Maximum rate/hour	154,166 m^3/h	Min efflux velocity	21.6 $m.sec^{-1}$

(ii) Other factors

Temperature	90 °C (max)	50 °C (min)	70 °C (avg)

For Combustion Sources:
Volume terms expressed as : ☐ wet. ☐ dry. ____3____ $\%O_2$

(iii) 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 350 day/yr

TABLE E.1(iii): MAIN EMISSIONS TO ATMOSPHERE - Chemical characteristics of the emission (1 table per emission point)

Emission Point Reference Number: A2-2_____

Parameter	Prior to treatment[1]				Brief description of treatment	As discharged[1]					
	mg/Nm^3		kg/h			mg/Nm^3		kg/h.		kg/year	
	Avg	Max	Avg	Max		Avg	Max	Avg	Max	Avg	Max
Particulates	NM [2]	NM [2]	NM [2]	NM [2]	Cyclone, Bag Filter	5.0	20	3.08	3.1	25,872	26,040

1. Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0^{o}C,101.3kPa). Wet/dry should be the same as given in Table E.1(ii) unless clearly stated otherwise.

TABLE E.1(iv): EMISSIONS TO ATMOSPHERE - Minor atmospheric emissions

Emission point Reference Numbers	Description	Emission details[1]				Abatement system employed
		material	mg/Nm^3[2]	kg/h.	kg/year	
A3-1	Plant Laboratory Fume Hood Exhaust 1	Organic and inorganic solvent vapours	N/M [3]	N/M	N/M	None
A3-2	Plant Laboratory Fume Hood Exhaust 2	Organic and inorganic solvent vapours	N/M	N/M	N/M	None
A3-3	Plant Laboratory Fume Hood Exhaust 3	Organic and inorganic solvent vapours	N/M	N/M	N/M	None
A3-4	Lactose Dump Extraction	Particulates	N/M	N/M	N/M	Polyester filter
A3-5	Vitamins & Minerals Room Extraction	Particulates	N/M	N/M	N/M	Glass fibre filter
A3-6	Odour Removal Building	Particulates	N/M	N/M	N/M	Filter
A3-7	Bulk Sugar Silo	Particulates	N/M	N/M	N/M	Polyester filter
A3-8	Vanilla Dispensing Room	Organic vapours	N/M	N/M	N/M	None
A3-9	Vanilla Storage Room	Organic vapours	N/M	N/M	N/M	None
A3-10	Canning Area Exhaust P1	Particulate	N/M	N/M	N/M	None
A3-11	Canning Area Exhaust P2	Particulates	N/M	N/M	N/M	None
A3-12	WWTP Laboratory Exhaust	Organic and inorganic solvent	N/M	N/M	N/M	None

1 The maximum emission should be stated for each material emitted, the concentration should be based on the maximum 30 minute mean.
2 Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0^{o}C101.3kPa). Wet/dry should be clearly stated. Include reference oxygen conditions for combustion sources.

TABLE E.1(v): EMISSIONS TO ATMOSPHERE – Fugitive and Potential atmospheric emissions

Emission point ref. no. (as per flow diagram)	Description	Malfunction which could cause an emission	Emission details (Potential max. emissions)[1]		
			Material	mg/Nm^3	kg/hour
N/A	Emissions from the Wastewater Treatment Plant	Emissions during general operations	N/A	N/A	N/A
N/A	Equipment connections and valves etc.	Minor Leaks	N/A	N/A	N/A
N/A	Breathing and working losses from liquid storage tanks	Emissions from vents on the acid and caustic tanks. Organic breathing losses from organics may arise from vents in the oil storage tanks	N/A	N/A	N/A
N/A	Emissions during loading and unloading operations	Vapour losses may occur during the filling and emptying of the liquid storage tanks.	N/A	N/A	N/A
N/A	Ammonia storage	Vapour losses from ammonia storage receptacles (Note – there is no ammonia on site at present)	N/A	N/A	N/A
N/A	Laboratory Room Vent	Minor emissions from lab vent	N/A	N/A	N/A

[1] Estimate the potential maximum emission for each malfunction identified.

TABLE E.2(i): EMISSIONS TO SURFACE WATERS (One page for each emission)

Emission Point: SW1

Emission Point Ref. Nº:	SW-1
Source of Emission:	Surface Water Runoff (roads, roofs and pathways) & Similac Condensate
Location :	Dromore River, to the west of the facility, at site boundary
Grid Ref. (12 digit, 6E,6N):	259730E, 315195N
Name of receiving waters:	Dromore River
Flow rate in receiving waters:	0.168 $m^3.sec^{-1}$ Dry Weather Flow 0.168 $m^3.sec^{-1}$ 95%ile flow
Available waste assimilative capacity:	Not Applicable kg/day

Emission Details:

(i) Volume to be emitted			
Normal/day	915 m^3	Maximum/day	3,568 m^3
Maximum rate/hour	138 m^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)	Intermittent N/A min/hr N/A hr/day N/A day/yr

TABLE E.2(ii): EMISSIONS TO SURFACE WATERS - Characteristics of the emission (1 table per emission point)

Emission point reference number : SW1

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	N/A	N/A	N/A	N/A	Range 6 - 9	Range 6 - 9	N/A	N/A	N/A
Temperature	N/A	N/A	N/A	N/A	22	22	N/A	N/A	N/A
Conductivity	N/A	N/A	N/A	N/A	1500 uS/cm	1500 uS/cm	N/A	N/A	N/A
COD	N/A	N/A	N/A	N/A	80	80	N/A	N/A	N/A

Emission Point: SW-2

Emission Point Ref. Nº:	SW-2
Source of Emission:	Final Treated Effluent
Location :	Dromore River, to the west of the facility, at site boundary
Grid Ref. (12 digit, 6E,6N):	259801E, 315380N
Name of receiving waters:	Dromore River
Flow rate in receiving waters:	0.168 $m^3.sec^{-1}$ Dry Weather Flow 0.168 $m^3.sec^{-1}$ 95%ile flow
Available waste assimilative capacity:	64 kg/day BOD

Emission Details:

(i) Volume to be emitted			
Normal/day	2500 m^3	Maximum/day	3200 m^3
Maximum rate/hour	134 m^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

TABLE E.2(ii): EMISSIONS TO SURFACE WATERS - Characteristics of the emission (1 table per emission point)

Emission point reference number : SW2- Final Treated Effluent

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	
BOD	N/A	888.7	2844	995,400	20	20	64	23040	N/A
Suspended Solids	N/A	600	1920	672000	30	30	96	34560	N/A
Orthophosphate (as P)	N/A	N/A	N/A	N/A	0.2	0.2	0.64	230.4	N/A
Total Phosphorus	N/A	15	48	16800	0.7	0.7	2.2	806.4	N/A
Total Nitrogen	N/A	75	240	84000	25	25	80.0	0.64	N/A
Ammonia	N/A	10	32	11200	1.5	1.5	4.8	1728	N/A
Oils,Fats,Greases (OFG)	N/A	100	320	112000	10	10	32	11520	N/A
pH	3-11	3-11	N/A	N/A	6-9	6-9	N/A	N/A	N/A

TABLE E.3(i): EMISSIONS TO SEWER (One page for each emission)

Emission Point: N/A

Emission Point Ref. Nº:	N/A
Location of connection to sewer:	
Grid Ref. (12 digit, 6E,6N):	
Name of sewage undertaker:	

Emission Details:

(i) Volume to be emitted			
Normal/day	N/A m^3	Maximum/day	N/A m^3
Maximum rate/hour	N/A m^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)	N/A min/hr N/A hr/day N/A day/yr

TABLE E.3(ii): EMISSIONS TO SEWER - Characteristics of the emission (1 table per emission point)

Emission point reference number : **N/A**

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	
BOD									
COD									
Suspended Solids									
Nitrates (as N)									
Ammonia (as N)									
Sulphates									
Fluoride									
Fats, Oils, Greases (FOG)									
Detergents (MBAS)									
Total Heavy Metals									

TABLE E.4(i): EMISSIONS TO GROUND (1 Page for each emission point)

There are no discharges/emissions to ground on site.

Emission Point or Area:

Emission Point/Area Ref. Nº:	Not Applicable (Off Site Landspreading)
Emission Pathway: (borehole, well, percolation area, soakaway, landspreading, etc.)	
Location :	
Grid Ref. (12 digit, 6E,6N):	
Elevation of discharge: (relative to Ordnance Datum)	
Aquifer classification for receiving groundwater body:	
Groundwater vulnerability assessment (including vulnerability rating):	
Identity and proximity of groundwater sources at risk (wells, springs, etc):	
Identity and proximity of surface water bodies at risk:	

Emission Details: N/A

(i) Volume to be emitted			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^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)	_____min/hr _____hr/day _____day/yr

TABLE E.4(ii): EMISSIONS TO GROUND - Characteristics of the emission (1 table per emission point)

Emission point/area reference number: Not Applicable

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	
N/A									

Table E.5(i): NOISE EMISSIONS - Noise sources summary sheet

Source	Emission point Ref. No	Equip. Ref. No	Sound Pressure[1] dBA at reference distance	Octave bands (Hz) Sound Pressure[1] Levels dB (unweighted) per band									Impulsive or tonal qualities	Periods of Emission
				31.5	63	125	250	500	1K	2K	4K	8K		
Refrigeration Room/Main Compressor	N-1	N/A	67	65	64	65	64	63	60	61	56	51	No	Cont.
Refrig. Room with main & 2nd Compressor	N-2	N/A	73	64	70	67	68	73	67	65	56	51	No	Cont.
Utilities Area	N-3	N/A	70	69	71	71	73	66	63	64	58	47	No	Cont.
Southern Boundary of Utilities Area	N-4	N/A	69	65	69	67	74	65	62	59	51	42	No	Cont.
Intake tanker Bay with milk intake pump	N-5	N/A	69	63	71	61	63	63	64	62	56	47	No	Cont.
NW boundary of Utilities Area – gas bottle storage	N-6	N/A	68	66	68	64	73	60	58	60	55	44	No	Cont.
Backwash Pump	N-7*	N/A	79	67	77	67	70	68	66	65	64	60	No	Cont.
Utilities Compound with Blower	N-8	N/A	85	79	73	76	92	74	73	76	70	60	No	Cont.
Utilities Area with Blower & refrigeration compressor	N-9*	N/A	94	73	74	79	100	83	80	86	76	67	No	Cont.
Syrup circulation pump	N-10	N/A	63	57	57	58	58	59	55	60	46	44	No	Cont.
Syrup circulation pump	N-11	N/A	61	59	58	55	56	54	50	58	43	39	No	Cont.
Blowers at Production Pump Tank	N-12*	N/A	91	65	75	91	89	89	79	83	68	58	No	Cont.
CIP Area	N-13	N/A	68	60	63	65	65	65	62	61	55	45	No	Cont.
HVAC Area	N-14	N/A	74	64	69	75	73	73	70	64	59	44	No	Cont.

Internal compressor room	N-15	N/A	83	71	71	76	78	78	75	78	73	64	No	Cont.
WWTP blowers (2)	N-16*	N/A	86	64	68	71	70	79	75	76	70	54	No	Cont.
WWTP blowers plus compressor	N-17	N/A	83	64	70	73	72	79	77	76	71	54	No	Cont.
WWTP air compressors (3)	N-18	N/A	71	60	71	68	60	66	68	61	61	48	No	Cont.
WWTP air compressor (southern façade)	N-19	N/A	75	63	67	63	68	71	72	62	64	51	No	Cont.
WWTP air compressor room	N-20*	N/A	91	56	92	85	79	86	88	79	80	68	No	Cont.
WWTP blower at outlet effluent buffer tank	N-21*	N/A	83	74	75	66	69	69	67	63	65	52	No	Cont.
Standby generator No. 1	N-22	N/A	67	76	82	79	70	60	57	54	46	38	No	Cont.
Standby generator No. 2	N-23	N/A	71	75	81	80	78	64	57	51	43	39	No	Cont.
Sprinkler Standby Pump Exhaust	N-24	N/A	85	77	77	86	75	77	75	79	78	63	No	Cont.
Sprinkler Standby Pump House	N-25	N/A	92	78	75	89	83	85	85	87	79	69	No	Cont.
Upgraded WWTP	N-26*	N/A	87	Not Available									No	Cont.

*Note: Expected noise levels of future Project ICE equipment (based on manufacturer data) have been combined with the measured noise levels of these sources.

1. For items of plant sound power levels may be used.

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

Emission point reference number **:A2-1 (Dryer No.1)**_____

Control[1] parameter	Equipment [2]	Equipment maintenance	Equipment calibration	Equipment back-up
Bag Filter Pressure Drop	Manometer	Annual & as required	Annual	Spare
Filter Bag Physical Inspection	None	Replace as required	None	Spare bags
Fines Blower Fan Pressure	Fines Blower Fan	Annual & as required	Annual	Spare
Cyclone Physical Inspection	Manual (hammer)	None	None	Spares
Air sweep	Dryer wall blower fan	Annual & as required	Annual	Spares
Fluidised bed inspection	Camera	Annual & as required	Annual	Spares

Control[1] parameter	Monitoring to be carried out[3]	Monitoring equipment	Monitoring equipment calibration
Bag Filter Pressure Drop	Record manually (hourly)	Manometer	Annual
Bag Filter Physical Inspection	Physical Inspection (Daily)	None	None
Fines Blower Fan Pressure	Record manually (hourly)	Ammeter	Annual
Cyclone Physical Inspection	Physical Inspection (hourly)	Hammer	None
Dryer Tower internal wall air sweep	Physical Inspection	None	None
Fluidised bed inspection	Visual inspection (continuous)	Camera	Annual

[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.

Emission point reference number **:A2-2 (Dryer No.2)**_____

Control[1] parameter	Equipment [2]	Equipment maintenance	Equipment calibration	Equipment back-up
Bag Filter Pressure Drop	Manometer	Annual & as required	Annual	Spare
Filter Bag Physical Inspection	None	Replace as required	None	Spare bags
Fines Blower Fan Pressure	Fines Blower Fan	Annual & as required	Annual	Spare
Cyclone Physical Inspection	Manual (hammer)	None	None	Spares
Air sweep	Dryer wall blower fan	Annual & as required	Annual	Spares
Fluidised bed inspection	Camera	Annual & as required	Annual	Spares

Control[1] parameter	Monitoring to be carried out[3]	Monitoring equipment	Monitoring equipment calibration
Bag Filter Pressure Drop	Record manually (hourly)	Manometer	Annual
Bag Filter Physical Inspection	Physical Inspection (Daily)	None	None
Fines Blower Fan Current	Record manually (hourly)	Ammeter	Annual
Cyclone Physical Inspection	Physical Inspection (hourly)	Hammer	None
Dryer Tower internal wall air sweep	Physical Inspection	None	None
Fluidised bed inspection	Visual inspection (continuous)	Camera	Annual

[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.

Emission point reference number **:SW-1 (Surface Water Runoff & Similac Condensate)___**

Control[1] parameter	Equipment [2]	Equipment maintenance	Equipment calibration	Equipment back-up
pH	pH Meter	As required	As required	None
Temperature	Thermometer	As required	As required	None
Conductivity	Conductivity Meter	As required	As required	None
COD	Grab Sample	As required	As required	None
Visual Inspection	N/A	N/A	N/A	N/A

Control[1] parameter	Monitoring to be carried out[3]	Monitoring equipment	Monitoring equipment calibration
pH	Weekly	pH Meter	Annual or as per manufacturer guidance
Temperature	Weekly	Thermometer	Annual or as per manufacturer guidance
Conductivity	Weekly	Conductivity Meter	Annual or as per manufacturer guidance
COD	Quarterly	Standard Method	N/A
Visual Inspection	Daily	N/A	N/A

[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.

Emission point reference number **:SW-2 (Effluent)**_____

Control[1] parameter	Equipment [2]	Equipment maintenance	Equipment calibration	Equipment back-up
Influent to WWTP:				
Flow	Electro Magnetic Flow meter	As required	As required	None
COD	COD Analyser	As required	As required	None
Balancing Tank				
Dissolved Oxygen	DO Meter	As required	As required	Use meter from 2nd tank
pH	pH Meter	As required	As required	In House Lab Analysis
Aeration Plant:				
Dissolved Oxygen	DO meter	As required	As required	As required
Mixed Liquor Suspended Solids	Standard Methods	As required	As required	None
Sludge microscopic exam	Microscope	As required	As required	None
F/M ratio	Standard Methods	As required	As required	None
Sludge settlement test (30 min)	Standard Methods	As required	As required	None
Sludge volume index	Not Applicable	Not Applicable	Not Applicable	None required
Clarifiers:				
Floating matter	Visual	None required	None required	None required
Sludge Dewatering:				
% Dry Solids	Standard Methods	As required	As required	None
Suspended Solids (picket fence thickener and mechanical dewatering)	Standard Methods	As required	As required	None

Control[1] parameter	Monitoring to be carried out[3]	Monitoring equipment	Monitoring equipment calibration
Influent to WWTP:			
Flow	Continuous	Electro Magnetic Flow meter	As required
COD	Continuous	COD Analyser	As required
Balancing Tank			
Dissolved Oxygen	Continuous	DO Meter	As required
pH	Continuous	pH Meter	As required
Aeration Plant:			
Dissolved Oxygen	Continuous	DO meter	As required
Mixed Liquor Suspended Solids	Daily (as required)	Standard Method	Not Applicable
Sludge microscopic exam	Daily (as required)	Microscope	As required
F/M ratio	Weekly	Standard Method	Not Applicable
Sludge settlement test (30 min)	Daily (as required)	Standard Method	Not Applicable
Sludge volume index	Daily (as required)	Standard Method	Not Applicable
Clarifiers:			
Floating matter	Daily (as required)	Visual	Not Applicable
Sludge Dewatering:			
% Dry Solids	Bi-Annually	Standard Methods	Not Applicable

[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 F.2(i) : EMISSIONS MONITORING AND SAMPLING POINTS (1 table per monitoring point)

Emission Point Reference No. : A1-1

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
Oxides of sulphur	Biannually	Accessible	Grab Sample (stack monitoring)	Flue Gas analyser
Nitrogen oxides (as NO2)	Biannually	Accessible	Grab Sample (stack monitoring)	Flue Gas analyser
Particulates	Biannually	Accessible	Grab Sample (stack monitoring)	Isokinetic/Gravimetric
Carbon Monoxide (CO)	Biannually	Accessible	Grab Sample (stack monitoring)	Flue Gas analyser

Emission Point Reference No. : A1-2

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
Oxides of sulphur	Biannually	Accessible	Grab Sample (stack monitoring)	Flue Gas analyser
Nitrogen oxides (as NO2)	Biannually	Accessible	Grab Sample (stack monitoring)	Flue Gas analyser
Particulates	Biannually	Accessible	Grab Sample (stack monitoring)	Isokinetic/Gravimetric
Carbon Monoxide (CO)	Biannually	Accessible	Grab Sample (stack monitoring)	Flue Gas analyser

Emission Point Reference No. : A1-3

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
Oxides of sulphur	Biannually	Accessible	Grab Sample (stack monitoring)	Flue Gas analyser
Nitrogen oxides (as NO2)	Biannually	Accessible	Grab Sample (stack monitoring)	Flue Gas analyser
Particulates	Biannually	Accessible	Grab Sample (stack monitoring)	Isokinetic/Gravimetric
Carbon Monoxide (CO)	Biannually	Accessible	Grab Sample (stack monitoring)	Flue Gas analyser

Emission Point Reference No. : A2-1

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
Particulates	Quarterly	Accessible	Grab Sample (stack monitoring)	Isokinetic/Gravimetric

Emission Point Reference No. : A2-2

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
Particulates	Quarterly	Accessible	Grab Sample (stack monitoring)	Isokinetic/Gravimetric

Emission Point Reference No. : SW-1

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
pH	Weekly	Accessible	pH Meter	N/A
Temperature	Weekly	Accessible	Temperature Probe	N/A
Conductivity	Weekly	Accessible	Conductivity Meter	N/A
COD	Quarterly	Accessible	Grab Sample	Standard Lab Method
Visual Inspection	Daily	Accessible	N/A	N/A

Emission Point Reference No. : SW-2

Parameter	Monitoring frequency	Accessibility of Sampling Points	Sampling method	Analysis method/ technique
Flow	Continuous	Accessible	On-line flow meter with recorder	N/A
pH	Weekly	Accessible	pH Probe/meter	N/A
Residual Chlorine	Weekly	Accessible	24 Hour composite flow sample	Standard Lab Method
BOD	Weekly	Accessible	24 Hour composite flow sample	Standard Lab Method
Suspended Solids	Weekly	Accessible	24 Hour composite flow sample	Standard Lab Method
Total Nitrogen	Weekly	Accessible	24 Hour composite flow sample	Standard Lab Method
Total Ammonia (as N)	Weekly	Accessible	24 Hour composite flow sample	Standard Lab Method
Total Phosphorus	Weekly	Accessible	24 Hour composite flow sample	Standard Lab Method
MRP (OrthoP)	Weekly	Accessible	24 Hour composite flow sample	Standard Lab Method
Temperature	Continuous	Accessible	Temperature probe	N/A
Oils, Fats & Greases	Monthly	Accessible	24 Hour composite flow sample	Standard Lab Method

TABLE F.2(ii): AMBIENT ENVIRONMENT MONITORING AND SAMPLING POINTS (1 table per monitoring point)

Monitoring Point Reference No : ASW-1 (Dromore River Upstream)

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method / technique
COD	Monthly	Accessible	Grab Sample	Standard Lab. Method
BOD	Monthly	Accessible	Grab Sample	Standard Lab. Method
Suspended Solids	Monthly	Accessible	Grab Sample	Standard Lab. Method
pH	Monthly	Accessible	Grab Sample	Standard Lab. Method
Orthophosphate (as P)	Monthly	Accessible	Grab Sample	Standard Lab. Method
Total Phosphorus	Monthly	Accessible	Grab Sample	Standard Lab. Method
Ammonia	Monthly	Accessible	Grab Sample	Standard Lab. Method
Total Nitrogen	Monthly	Accessible	Grab Sample	Standard Lab. Method
Nitrate	Monthly	Accessible	Grab Sample	Standard Lab. Method
OFG	Monthly	Accessible	Grab Sample	Standard Lab. Method

Monitoring Point Reference No : ASW-2 (Dromore River Downstream)

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method / technique
COD	Monthly	Accessible	Grab Sample	Standard Lab. Method
BOD	Monthly	Accessible	Grab Sample	Standard Lab. Method
Suspended Solids	Monthly	Accessible	Grab Sample	Standard Lab. Method
pH	Monthly	Accessible	Grab Sample	Standard Lab. Method
Orthophosphate (as P)	Monthly	Accessible	Grab Sample	Standard Lab. Method
Total Phosphorus	Monthly	Accessible	Grab Sample	Standard Lab. Method
Ammonia	Monthly	Accessible	Grab Sample	Standard Lab. Method
Total Nitrogen	Monthly	Accessible	Grab Sample	Standard Lab. Method
Nitrate	Monthly	Accessible	Grab Sample	Standard Lab. Method
OFG	Monthly	Accessible	Grab Sample	Standard Lab. Method

Monitoring Point Reference No : GW-1_____

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method / technique
pH	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
COD	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Major cations	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Major anions	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Total Coliforms	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Faecal Coliforms	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Total Petroleum Hydrocarbons	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method

Monitoring Point Reference No : GW-2_____

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method / technique
pH	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
COD	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Major cations	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Major anions	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Total Coliforms	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Faecal Coliforms	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Total Petroleum Hydrocarbons	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method

Monitoring Point Reference No : GW-3_____

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method / technique
pH	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
COD	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Major cations	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Major anions	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Total Coliforms	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Faecal Coliforms	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method
Total Petroleum Hydrocarbons	Annually	Accessible	Grab Sample (Bailer)	Standard Lab Method

Monitoring Point Reference No : NSL-1 (Kearns Residence)_____

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method / technique
L_{Aeq} (15 Minutes)	Annually	Accessible	Standard Method	Not Applicable

Monitoring Point Reference No : NSL-2 (O'Brien's Residence)_____

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method / technique
L_{Aeq} (15 Minutes)	Annually	Accessible	Standard Method	Not Applicable

Monitoring Point Reference No : NSL-3 (Bellamont House)_____

Parameter	Monitoring frequency	Accessibility of	Sampling method	Analysis method /

		Sampling point		technique
L_{Aeq} (15 Minutes)	Annually	Only Intermittent Access possible	Standard Method	Not Applicable

Monitoring Point Reference No : NSL-4 (Amenity Park)_____

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method / technique
L_{Aeq} (15 Minutes)	Annually	Accessible	Standard Method	Not Applicable

Monitoring Point Reference No : NSL-5 (Margaret's Lane)_____

Parameter	Monitoring frequency	Accessibility of Sampling point	Sampling method	Analysis method / technique
L_{Aeq} (15 Minutes)	Annually	Accessible	Standard Method	Not Applicable

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
001	Skim Milk Liquid	No data	No data	828	216,221	Raw Material	No data	No data
002	Skim Milk Powder	No data	No data	100	371	Raw Material	No data	No data
003	Lactose	63-42-3	No data	140	15935	Raw Material	No data	No data
004	Artificial Vanilla Flavour	No data	Flammable	15	300	Raw Material	10	No data
005	Sucrose	57-50-1	No data	3,415	42	Raw Material	No data	No data
006	Pro-biotic LACTIC ACID BIFIDOBACTERIUM	No data	No data	2,000	28905	Raw Material	No data	No data
007	Whey Protein	No data	Non Hazardous	50	1212	Raw Material	No data	No data
008	Maltodextrin	9050-36-6	No data	3	32	Raw Material	No data	No data
009	Mixed Tocopherols	68855-54-9	Hazard	0.5	6.93	Raw Material	68/20	22
010	Ascorbic Acid	50-81-7	Non hazardous	7	99	Raw Material	No data	No data
011	Ascorbyl Palmitate	137-66-6	Harmful to the aquatic environment	3	16.548	Raw Material	52/53	61
012	Taurine	107-35-7	No data	0.05	0.014	Raw Material	No data	No data
013	Vitamin Premix Vit. Acetate Vit. A Palmitate Vit. D3 Cholecalciferol	 127-47-9 79-81-2 67-97-0	Non Hazardous	0.8	3.822	Raw Material	25,38,51,53,63	3,36/37/39,22,45,53,61

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials

Ref. Nº or Code	Material/ Substance[1]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
001	Skim Milk Liquid	N/A	No			Not classified	Not classified	Not classified	Not classified
002	Skim Milk Powder	N/A	Yes	Characteristic	No data	Not classified	Not classified	Not classified	Not classified
003	Lactose	N/A	No			Not classified	Not classified	Not classified	Not classified
004	Artificial Vanilla Flavour	N/A	Yes	Characteristic	No data	Not classified	Not classified	Not classified	Not classified
005	Sucrose	N/A	No			Not classified	Not classified	Not classified	Not classified
006	Pro-biotic LACTIC ACID BIFIDOBACTERIUM	N/A	No			Not classified	Not classified	Not classified	Not classified
007	Whey Protein	N/A	No			Not classified	Not classified	Not classified	Not classified
008	Maltodextrin	N/A	No			Not classified	Not classified	Not classified	Not classified
009	Mixed Tocopherols	N/A	Yes	Mild	No data	Not classified	Not classified	Not classified	Not classified
010	Ascorbic Acid	N/A	No			Not classified	Not classified	Not classified	Not classified
011	Ascorbyl Palmitate	N/A	Faint	Characteristic	No data	Not classified	Not classified	Not classified	Not classified
012	Taurine	N/A	Yes	Characteristic/Colour-less	No data	Not classified	Not classified	Not classified	Not classified
013	Vitamin Premix Vit. Acetate Vit. A Palmitate Vit. D3 Cholecalciferol	N/A	No		No data	Not classified	Not classified	Not classified	Not classified

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials

Ref. Nº or Code	Material / Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
014	Calcium Carbonate	471-34-1	Non hazardous	10	234	Raw Material	99	No data
015	Calcium Hydroxide	1305-62-0	Corrosive	2	15	Raw Material	41	22-24-26-39
016	Ferrous Sulphate	7782-63-0	Harmful	1	5.6	Raw Material	22	24/25
017	Magnesium Chloride	7791-18-6	Non hazardous	3	34.3	Raw Material	No data	No data
018	Potassium Chloride	7447-40-7	Irritant, Harmful	2.878	11.2	Raw Material	20/21/22/36/37/38	26/37/39
019	Potassium Citrate	6100-05-6	Non Hazardous	25	265.1	Raw Material	No data	No data
020	Potassium Hydroxide	1310-58-3	Corrosive	7	109.5	Raw Material	22-35	26-36/37/39-45
021	Potassium Iodide	7681-11-0	Non Hazardous	3.5	52.75	Raw Material	No data	No data
022	Sodium Chloride	7647-14-5	Non Hazardous	5	55.9	Raw Material	No data	No data
023	Tricalcium Phosphate	7758-87-4	Non Hazardous	3	35.72	Raw Material	No data	No data
024	Choline Chloride	67-48-1	Non Hazardous	0.077	0.56	Raw Material	No data	No data
025	Vit/Mineral/Taurine Premix.	No data	Non Hazardous	0.03	0.0924	Raw Material	No data	No data
026	Vitamin A, D, RRR-E, K Premix	No data	Non Hazardous	0.8	3.8	Raw Material	No data	No data

Notes:
1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials

Ref. Nº or Code	Material/ Substance[1]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
014	Calcium Carbonate	N/A	No			Not classified	Not classified	Not classified	Not classified
015	Calcium Hydroxide	N/A	No			Not classified	Not classified	Not classified	Not classified
016	Ferrous Sulphate	N/A	Yes	Slightly Metallic		Not classified	Not classified	Not classified	Not classified
017	Magnesium Chloride	N/A	No			Not classified	Not classified	Not classified	Not classified
018	Potassium Chloride	N/A	No			Not classified	Not classified	Not classified	Not classified
019	Potassium Citrate	N/A	No			Not classified	Not classified	Not classified	Not classified
020	Potassium Hydroxide	N/A	No			Not classified	Not classified	Not classified	Not classified
021	Potassium Iodide	N/A	No			Not classified	Not classified	Not classified	Not classified
022	Sodium Chloride	N/A	No			Not classified	Not classified	Not classified	Not classified
023	Tricalcium Phosphate	N/A	No			No	3 Phos. Compound	No	3 Phos. Compound
024	Choline Chloride	N/A	No			Not classified	Not classified	Not classified	Not classified
025	Vitamin/Mineral/Taurine Premix.	N/A	No data			Not classified	Not classified	Not classified	Not classified
026	Vitamin/Trace Mineral Premix	N/A	No data			Not classified	Not classified	Not classified	Not classified

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
027	Beta Carotene	7235-40-7	Non Hazardous	215.98	70	Raw Material	No data	No data
028	Vitamin A, D3, E, K1	No data	Non Hazardous	2.19	0.84	Raw Material	No data	No data
029	Galacto Oligo Saccharide			330	2629.03	Raw Material		
030	Meso Inositol	No data	No data	0.25	2.18	Raw Material	No data	No data
031	L'Carnitine	No data	No data	0.05	0.52	Raw Material	No data	No data
032	Choline Bitartrate	No data	No data	1	0.04	Raw Material	No data	No data
033	NUCLEOTIDE/CHOLINE Premix	No data	No data	10	125.06	Raw Material	No data	No data
034	BIFIDOBACTERIUM BI-07 300B Pro-biotic	No data	No data	50	340.71	Raw Material	No data	No data
035	Pro-biotics	No data	No data	70	964.97	Raw Material	No data	No data
036	Lutein	No data	No data	None	None	Raw Material	No data	No data

Notes:
1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials

Ref. Nº or Code	Material/ Substance(1)	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
027	Beta Carotene	N/A	No			No	No	No	No
028	Vitamin A, D3, E, K1	N/A	No			No	No	No	No
029	Galacto Oligo Saccharide					No	No	No	No
030	Meso Inositol	N/A	No data			No	No	No	No
031	L'Carnitine	N/A	No data			No	No	No	No
032	Choline Bitartrate		No data			No	No	No	No
033	NUCLEOTIDE/CHOLINE Premix		No data			No	No	No	No
034	BIFIDOBACTERIUM BI-07 300B Pro-biotic		No data			No	No	No	No
035	Pro-biotics		No data			No	No	No	No
036	Lutein		No data			No	No	No	No

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
037	Oligofructose	N/A	N/A	12	68.57	Raw Material	No data	No data
038	Lecithin	N/A	N/A	8	64.70	Raw Material	No data	No data
039	AA Oil	N/A	N/A	6	90.62	Raw Material	No data	No data
040	DHA Oil	N/A	N/A	6	94.60	Raw Material	No data	No data
041	Mixed Carotenoids	N/A	N/A	2	25.41	Raw Material	No data	No data
042	L-Trypophan	N/A	N/A	0.5	2.93	Raw Material	No data	No data
043	Whey protein Hydrolysate	N/A	N/A	16	62.48	Raw Material	No data	No data

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials

Ref. Nº or Code	Material/ Substance(1)	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m³	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
037	Oligofructose	N/A	No			No	No	No	No
038	Lecithin	N/A	No			No	No	No	No
039	AA Oil	N/A	No			No	No	No	No
040	DHA Oil	N/A	No data			No	No	No	No
041	Mixed Carotenoids	N/A	No data			No	No	No	No
042	L-Trypophan	N/A	No			No	No	No	No
043	Whey protein Hydrolysate	N/A	No			No	No	No	No

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials (Oils)

Ref. Nº or Code	Material / Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
044	Corn Oil	No Data	Non hazardous	20	15936.2	Raw Material	No Data	No Data
045	Soya Oil	No Data	Non hazardous	50	81.2	Raw Material	No Data	No Data
046	Coconut Oil	No Data	Non hazardous	50	3404.8	Raw Material	No Data	No Data
047	Sunflower Oil	No Data	Non hazardous	50	4690	Raw Material	No Data	No Data

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Raw Materials

Ref. Nº or Code	Material/ Substance(1)	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
044	Corn Oil	3	Yes	Slight	No data	No	No	No	No
045	Soya Oil	3	Yes	Slight	No data	No	No	No	No
046	Coconut Oil	3	Yes	Slight	No data	No	No	No	No
047	Sunflower Oil	3	Yes	Slight	No data	No	No	No	No

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
048	Argon Liquid	7440-37-1	N/A	0.3	1.82		N/A	N/A
049	Boric Acid (4%)	10043-35-3	N/A	0.15	0.42		N/A	N/A
050	Bulk CO2	124-38-9	N/A	10	138.32	Gas flushing in conjunction with Nitrogen Gas (20%CO2 : 80% N)	N/A	N/A
051	Bulk Nitric Acid (55%)	7697-37-2	N/A	27.5	317.85	CIP solution	N/A	N/A
052	Bulk Nitrogen	7727-37-9	N/A	20	513.34	(Part of ingredients; used in product preservation) Blanketing of storage tanks, purging of process equip. Inerting product containers.	N/A	N/A
053	Bulk Sulphuric Acid (98%)	7664-93-9	Irritant	25	218.90	Water Treatment	36, 38	26

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
048	Argon Liquid		No						
049	Boric Acid (4%)		No						
050	Bulk CO2		No						
051	Bulk Nitric Acid (55%)		Yes	Suffocating, Accrid					
052	Bulk Nitrogen		No						
053	Bulk Sulphuric Acid (98%)		No						

Notes (cont.): 4. The European Commission priority candidate list.

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
054	Cassida Oil	No data	No data	0.15	1.82	Careful blend of synthetic fluids to meet requirements of the food industry	No Data	No Data
055	Caustic (25%)	1310-73-2	Corrosive	30	842.24	Cleaning	35	26-36/37/39-45
056	Chlorine	7782-50-5	Toxic, dangerous for the environment, irritating, very toxic to aquatic orgs	0.27	1.4	Water treatment	23,36/37/38,50	9,45,61
057	Ferric Sulphate	10028-22-5	Irritating to eyes, respiratory system and skin	16	56	Wastewater treatment chemical	36/37/38	24/25, 26,60
058	Gas Oil (Diesel)	68476-30-2	Flammable	12.5	13750	Fuel	40, 51/53, 65	2,24,36/37, 43,62
059	Granular salt Sodium Chloride (NaCl)	7647-14-5	Irritating to respiratory system	2.2	3.43	Boiler Water Softner	-	-
060	Hydrochloric Acid - 28%	007647-01-0	Corrosive/Irritant	0.21	0.14	Laboratory - WTP	34, 37	2, 26, 45
061	Mobil Gargoyle Arctic Oil 300	N/A	Low level Toxic/Irritant		5.712	Refrigeration Compressor Oil	-	-
062	Hypochloran			1.0	1.98	Sanitizer. Plant-wide including product contact areas.		

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
054	Cassida Oil	-	Yes	Slight		No	No	No	No
055	Caustic (25%)		No	Odourless		Not listed	Not listed	Not listed	Not listed
056	Chlorine	2	No data	No Data		Not listed	Not listed	Not listed	Not listed
057	Ferric Sulphate	No data	No data			No data		No data	
058	Gas Oil (Diesel)	3	Yes	Characteristic	-	-	3 Mineral Oil/Hydrocarbon	-	3 Mineral Oil/Hydrocarbon
059	Granular salt Sodium Chloride (NaCl)								
060	Hydrochloric Acid - 28%		Yes	Pungent, characteristic		No	No	No	No
061	Mobil Gargoyle Arctic Oil 300	No Data	No Data	-		No	No	No	No
062	Hypochloran								

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material / Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
063	Polyaluminium Chloride (PAC - Alum)	1327-41-9	Irritant	10	126	Flocculant for WWTP	-	S26
064	Polymer (WTP) - Magnafloc LT22S-DWI. Contains adipic-acid (2-6%)	69418-26-4 124-04-9	Flammable	0.30	0.49	Flocculant for WWTP	-	
065	Propane (LPG)	0074-98-6	Highly Flammable	1.2	3.5		No data	No data
066	Sodium Hypochlorite (C-chlorous)	007681-52-9	Corrosive	0.1	4.9	Disinfectant	31, 34, 36/38	1/2, 28, 45, 50
067	Zetag 8180 - Contains adipic-acid (2-6%)	000124-04-9	N/A	1.0	2.8	Flocculant	36	
068	Tar & Glue Remover	1330-20-7, 75-09-2	Flammable, Mild Irritant	0.02	0.224	Grease remover	10-20/21-28, 40	-
069	Can coding Videojet Ink 16-8530Q – 1) 65–80% 2-Butanone 2) 1-3% Organosilane Compound 3) 3-7% Colorant, organometallic Compound, Chromium 111, (6% Cr) 4) 1-3% Ethanol 5) 1-3% Ethyl acetate 6) 1-3% Isopropyl alcohol	78-93-3, 64-17-5, 141-78-6, 67-63-0	Highly flammable, Irritant	0.02	0.062	Use in continuous ink jet processor	11, 36, 66, 67, 52/53	

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94

3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
063	Polyaluminium Chloride (PAC - Alum)	N/A	No	-	-	No	No	No	No
064	Polymer (WTP) - Magnafloc LT22S-DWI. Contains adipic-acid (2-6%)	N/A	No	-	-	No	No	No	No
065	Propane (LPG)	N/A	No	Odourless/colourless		Not listed	Not listed	Not listed	Not listed
066	Sodium Hypochlorite (C-chlorous)		Yes	Characteristic	-				
067	Zetag 8180 - Contains adipic-acid (2-6%)	N/A	No	-	-	No	No	No	No
068	Tar & Glue Remover	N/A	Yes	Solvent	-	No	No	No	No
069	Can coding Videojet Ink 16-8530Q		Yes	Solvent		No	No	No	No

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
070	Chloroform	67-66-3	Harmful, Carcinogenic	0.15	0.42	General solvent	40, 22, 48/20/22, 38	36/37
071	Dyma Phos Phosphoric Acid Citric Acid	7664-78-2 77-92-9	Irritant, may cause burns	0.12	0.336	Disinfectant	34, 36/38	-
072	Foamex (sodium hydroxide)	1310-73-2	Corrosive	0.5	3.36	Alkaline Foam Cleaner	35	-
073	Green (sodium metasilicate)	6834-92-0		0.5	3.92	Degreaser and Cleaner	36/38	
074	Hand Guard	67-63-0		0.006	0.0084	Disinfectant		
075	HM5002 adhesive, part ref: 0-900-29-724-5	-		2.0	3.36	Adhesive for labels		
076	Ink for Marsh Coder Series 200, Part no. 29728	-		0.002	0.0056	Packaging Ink		
077	Instapak 2000 Hot Melt Glue.	-	Mild Irritant	1.0	16.128	Adhesive for Labelling	-	-
078	Kjeldahl solution Sodium Hydroxide Sodium Thiosulphate	1310-73-2 10102-17-1	Causes burns	0.15	0.42	Lab analysis	35	26-36/37/39-45
079	Make Up fluid 16-8535Q 1) 2-Butanone 90-100% 2) Ethanol 3-7%	78-93-3 64-17-5	Highly Flammable, Irritant	0.15	0.45	Ink Jet Printing	-	-

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
070	Chloroform		Yes	Sweet	-	No data	No data	No data	No data
071	Dyma Phos (20ltr drums) Phosphoris Acid Citric Acid		Yes	Faint, characteristic					
072									
073	Foamex (20 litres per drum)		Yes	Faint, characteristic					
074	Green		Yes	Faint, characteristic					
075	Hand Guard								
076	HM5002 adhesive, part ref: 0-900-29-724-5								
077	Ink for Marsh Coder Series 200, Part no. 29728								
078	Instapak 2000 Hot Melt Glue.	_	Yes	Pine		No	No	No	No
079	Kjeldahl solution	-	No	-		No	No	No	No
	Make Up fluid 16-8535Q		Yes	Solvent		No data	No data	No data	No data
	3) 2-Butanone 90-100%								
	4) Ethanol 3-7%								

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
080	Nalco 2854 Sodium Hydroxide Potassium Hydroxide	1310-73-2 1310-58-3	Corrosive	0.7	1.82	Water Treatment Chemical	-	-
081	Nalco 3DT149 (replaces Nalco 20210)			1.0	1.4	Cooling Tower Chemical		
082	Nalco 77214	7631-90-5		0.7	2.94	Oxygen Scavenger	No Data	No Data
083	Nalco 73500			1.0	0.84	Cooling Tower Chemical		
084	Nalco Nexguard 22310 (replaces Nalco 2800)			0.7	0.7	Boiler Water Treatment Chemical		
085	Quatron (Dicedyl dimethyl ammoniumchloride	7173-51-5	Irritant	1.0	3.5		36/38	
086	Steri-Dri (Blend containing 80% denatured ethanol)	10-42-5 778-42-5 7631-86-9	Flammable	1.0	4.2	Implement sanitiser	10	16, 51, 9
087	Videojet Marsh Ink M512			0.002	0.0056	Ink for packaging		

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
080	Nalco 2854								
081	Nalco 3DT149 (replaces Nalco 20210)			1.0	1.0	Cooling Tower Chemical			
082	Nalco 77214	7631-90-5		0.7	2.1	Oxygen Scavenger	No Data	No Data	
083	Nalco 73500			1.0	0.6	Cooling Tower Chemical			
084	Nalco Nexguard 22310 (replaces Nalco 2800)			0.7	0.5	Boiler Water Treatment Chemical			
085	Quatron		Yes	Faint characteristic					
086	Steri-Dri (Blend containing 80% denatured ethanol, distilled water)		Yes	Slight	-				
087	Videojet Marsh Ink M512								

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Laboratory Chemicals

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
088	Ethanol	64-17-5	Highly Flammable	0.040	0.014	Lab Chemical	11	7 - 16
089		64-18-6	Causes Burns			Lab Chemical	35	23B-26-36/37/39-45
	Formic Acid			0.0025	0.0035			
090	Glycerol	26536-12-9	N/A	0.0025	0.0105	Lab Chemical	-	-
091	Hydranol-5-Composite	67-56-1	Flammable, toxic			Lab Chemical	11-23/24/25-39/23/24/25	7-16-36/37-45
	Methanol	7553-56-2						
	Iodine			0.036	0.036		20/21-50	
092	HCL 0.1 mol	90-43-7	Irritant	0.005	0.014	Lab Chemical	34, 37	
093	35% HCL analar	7647-01-0	Irritant	0.0025	0.007	Lab Chemical	34, 37	
094	HPLC Grade Water			0.25	0.035	Lab Chemical		
095		67-56-1	Flammable, toxic			Lab Chemical	11, 23/24/25	7, 16, 36/37, 45
	Methanol			0.25	0.42		39/23/24/25	
096	Octan-2-ol	123-96-6	Irritant	0.010	0.0175	Lab Chemical	36/38	26-36

Notes:
1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Laboratory Chemicals

Ref. Nº or Code	Material/ Substance[(1)]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
088	Ethanol		Yes	Characteristic					
089	Formic Acid		Yes	Pungent					
090	Glycerol		No						
091	Hydranol-5-Composite		No						
092	HCL 0.1 mol		Yes	Pungent					
093	35% HCL analar		Yes	Strong, Pungent					
094	HPLC Grade Water		No						
095	Methanol		Yes	Alcoholic					
097	Octan-2-ol		Yes	Unpleasant					

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
097	Petroleum Spirit 40-60	64742-49-0	Flammable	0.25	0.182	Lab Chemical	11-51/53-65-66-67	9-16-23b-24-33-61-62
098	Propan-2-ol	67-63-0	Flammable, Irritant	0.010	0.035	Lab Chemical	11, 36, 67	7, 16, 24/25
099	Silver Nitrate 0.1 mol	*7761-88-8*	Toxic	0.0025	0.007	Lab Chemical	52, 53	61
100	Sodium Thiosulphate 0.1 mol	10102-17-7	N/A	0.005	0.0014	Lab Chemical	-	-
101	Sulphuric Acid	7664-93-9	Irritant	0.002	0.0035	Lab Chemical	36, 38	26
102	Triethylamine	121-44-8	Flammable, Causes burns	0.0005	0.007	Lab Chemical	11 20/21/22 35	3, 16, 26, 29, 36/37/39, 45
103	2,2,4 Trimethylpentane	540-84-1	Flammable, toxic	0.50	0.84	Lab Chemical	11, 65, 67 38, 50/53	9, 16, 29, 33, 60
104	Diethyl Ether	60-29-7	Flammable	0.25	0.182	Lab Chemical	12-19-22-66-67	9-16-29-33
105	Boric Acid 2%	10043-35-3	N/A	0.15	0.42	Lab Chemical	N/A	N/A

Notes:
1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site - Chemicals

Ref. Nº or Code	Material/ Substance[1]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
097	Petroleum Spirit 40-60		Yes	Characteristic					
098	Propan-2-ol		Yes	Alcoholic					
099	Silver Nitrate 0.1 mol		No						
100	Sodium Thiosulphate 0.1 mol		No						
101	Sulphuric Acid		No						
102	Triethylamine		Yes	strong odor - fishy ammonia					
103	2,2,4 Trimethylpentane		Yes	Very faint					
104	Diethyl Ether		Yes	Characteristic					
105	Boric Acid 2%		No						

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Laboratory Chemicals

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
106	Ascorbic Acid	50-81-7	N/A	3	5.6	Lab Chemical	N/A	N/A
107	Caesium Chloride	7647-17-8	Irritant	2	5.6	Lab Chemical	68	N/A
108	Dichlorophenolindophenol	620-45-1	N/A	3	5.6	Lab Chemical	N/A	N/A
109	EDTA	6381-92-6	N/A	3	5.6	Lab Chemical	N/A	N/A
110	Kjeltabs MT			4	16.8	Lab Chemical		
111	Metaphosphoric Acid	37267-86-0	Corrosive, Causes burns	8	16.8	Lab Chemical	34	26-36/37/39-45
112	Orthophosphoric Acid	7664-38-2	Corrosive, Causes burns	4	8.4	Lab Chemical	34	26-36/37/39-45
113	Sodium Chloride	7647-14-5	N/A	4	4.2	Lab Chemical	N/A	N/A
114	Trichloroacetic Acid	76-03-9	Causes burns, toxic	4	8.4	Lab Chemical	35-50/53	26-36/37/39-45-60-61
115	Ysi 2357 Buffer Concentrate	N/A	N/A	0.096	0.56	Lab Chemical	N/A	N/A
116	Ysi 2772 Choline Std.	N/A	N/A	2.5	7.0	Lab Chemical	N/A	N/A
117	Ysi 2392 Sodium Chloride	7647-14-5	N/A	0.006	0.014	Lab Chemical	N/A	N/A
118	Ammonia Gas	7664-41-7	Toxic, Dangerous, Corrosive	1.5	1.5	Refrigeration System	R10 R23 R24 R34 R50	S9,S16,S26,S33,S36,S37,S39,S45,S61
119	Polymer	N/A	N/A	3.0	7.0	Effluent Plant Treatment	N/A	N/A
120	Phosphoric Acid (H_3PO_4) 75%	7664-38-2	Harmful, Corrosive	2	2	Effluent Plant Treatment	21, 22, 34	S26 S36 S37 S39 S45

Notes:
1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Laboratory Chemicals

Ref. Nº or Code	Material / Substance[1]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group / Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
106	Ascorbic Acid		No						
107	Caesium Chloride		No						
108	Dichlorophenolindophenol		No						
109	EDTA		No						
110	Kjeltabs MT		No						
111	Metaphosphoric Acid		No						
112	Orthophosphoric Acid		No						
113	Sodium Chloride		No						
114	Trichloroacetic Acid		Yes	Pungent					
115	Ysi 2357 Buffer Concentrate		No						
116	Ysi 2772 Choline Std.		No						
117	Ysi 2392 Sodium Chloride		No						
118	Ammonia Gas		Yes	Ammonia					
119	Polymer		No						
120	Phosphoric Acid (H_3PO_4) 75%		No						

Notes (cont.): 4. The European Commission priority candidate list

Table G.1(i) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Finished Products

Ref. Nº or Code	Material / Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
121	Infant Formulae - Similac Products range: G784, G819, M712, M745, M746, M366, M367, M407, M417	N/A	Food Products	450	21,590	Infant Formula	N/A	
122	Follow-on Formulae - Gain Products range: M388, L802, M386, M526	N/A	Food Products	450	32,386	Follow-on Formula for Infants 4 months +	N/A	

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 9 and 10 of SI No 62/2004

Table G.1(ii) Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site – Finished Products

Ref. Nº or Code	Material/ Substance[(1)]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[4]	List I	List II
121	Infant Formulae - Similac Products range: G784, G819, M712, M745, M746, M366, M367, M407, M417	No Data	Yes	Milky	No Data	N/A	N/A	N/A	N/A
122	Follow-on Formulae - Gain Products range: M388, L802, M386, M526	No Data	Yes	Vanilla	No Data	N/A	N/A	N/A	N/A

Notes (cont.): 4. The European Commission priority candidate list

TABLE H.1(i): WASTE - Hazardous Waste Recovery/Disposal

Waste material	EWC Code	Main source[1]	Quantity		On-site Recovery/Disposal	Off-site Recovery, reuse or recycling	Off-site Disposal
			Tonnes / month	m^3 / month	(Method & Location)	(Method, Location & Undertaker)	(Method, Location & Undertaker)
Fluorescent Tubes	16 02 13	Lighting from all parts of facility	0.11	N/A	None	Recycled offsite by Irish Lamp Recycling Co. Ltd. Waste Facility Permit No. 02/2000A issued by Kildare Co. Co.	
Waste Oil (Oil/Water Mix with a high volume of water as rain water in bunds)	13 02 05	Production Areas	0.17	N/A	None	Recovered offsite by Enva, Portlaoise - IPPC Licence No.472	
Waste Electrical & Electronic Equipment	20 01 21	All parts of facility	0.15	N/A	None	Recycled offsite by Irish Lamp Recycling Co. Ltd. Waste Facility Permit No. 02/2000A issued by Kildare Co. Co.	
Lab Waste - Acid	06 01 01	Main Lab and WWTP Lab	0.552	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station	Incineration, AGV, Hamburg

						(EPA Licence 36-1), then to AVG, Hamburg, Germany	
Lab Waste – Nitric Acid	06 01 05	Main Lab and WWTP Lab	0.0143	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	Incineration, AGV, Hamburg
Lab Waste – Packaging	06 02 05	Main Lab and WWTP Lab	0.0066	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	Incineration, AGV, Hamburg
Organic Solvents	07 05 03	Main Lab and WWTP Lab	0.555	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	Incineration, AGV, Hamburg
Lab Waste – Ether & Methanol	07 05 04	Main Lab and WWTP Lab	0.858	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	Incineration, AGV, Hamburg
Lab Waste - Syringe Sharps	07 05 13	Main Lab and WWTP Lab	0.475	N/A	None	Transported by Indaver (WCP	Incineration, AGV, Hamburg

						MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	
Ink Waste	08 03 12	Main Lab and WWTP Lab	0.099	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	Incineration, AGV, Hamburg
Dipotassium phosphate	16 03 03	Main Lab and WWTP Lab	0.0286	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	Incineration, AGV, Hamburg
Organic Wastes	16 03 05	Main Lab and WWTP Lab	1.409	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	Incineration, AGV, Hamburg
Mixed Chemicals	16 05 06	Main Lab and WWTP Lab	0.111	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	Incineration, AGV, Hamburg

Nitrogen Hydroxide	16 05 07	Main Lab and WWTP Lab	0.5522	N/A	None	Transported by Indaver (WCP MH2001/39D) to Transfer Station (EPA Licence 36-1), then to AVG, Hamburg, Germany	Incineration, AGV, Hamburg
Medical waste	18 01 03	Medical Station	0.0037	N/A	None	SRCL Ltd., 430 Beech Road, Western Industrial Estate, Naas Road, Dublin 12 – W0055-2	

[1] A reference should be made to the main activity / process for each waste.

TABLE H.1(ii) WASTE - Other Waste Recovery/Disposal

Waste material	EWC Code	Main source[1]	Quantity		On-site recovery/disposal[2] (Method & Location)	Off-site Recovery, reuse or recycling (Method, Location & Undertaker)	Off-site Disposal (Method, Location & Undertaker)
			Tonnes / month	m^3 / month			
Cardboard but contains approx. 1% office paper	15 01 01	Offices, Canteen, Warehousing/ Storage	15.36	N/A	Compacted & Baled on-site by AIC	Transported by Cavan Waste Disposal Ltd (Waste Collection permit MH/2001/37D) to Oxigen Ballymount in Dublin for recovery (EPA Waste Licence 207-1)	
Ink Cartridges Waste	20 01 28		0.004	N/A	None	Transtported by Hyland Transport (WCP- WCP MH2002/23D) to Folamh (Jack & Jill Foundation), Fingal, Co. Dublin (WFP 656-4)	
Plastic	15 01 02	Offices, Canteen, Warehousing/ Storage	8.37	N/A	Compacted & Baled on-site by AIC	Mixed plastic is transported by Cavan Waste Disposal Ltd to a plastic processing plant in Cootehill - Retech Processing - WFP-CN-10-0004-	

						01	
Empty cans	15 01 04	Production Areas	9.36		Compacted & Baled on-site by AIC	Transported by Cavan Waste Disposal Ltd (Waste Collection permit MH/2001/37D) to Clearway Disposal Ltd in Portadown, Co. Armagh for recovery.	
General waste (Canteen, Skips & Compactor)	02 05 99	Canteen, Offices, Production Areas and Facilities	8.69	N/A	Compacted on-site by AIC	Transported by Cavan Waste Disposal Ltd (Waste Collection permit MH/2001/37D) for disposal to Corranure Landfill, Cootehill, Cavan – Licence No. W0077-04	
Total Waste Veg Oil	20 01 26	Canteen, Production Areas	0.284	N/A	None	Transported by Agri-Energy (WCP: DC-10-1297-01) to Sanders Facility, Foster St, Liverpool, UK (Licence No. WML 50352	
Process Waste/ Tailings	02 05 01	Process	86.09	N/A	None	Reused off-site by Dan Dennehy, Rathdrinagh, Beauparc, Navan, Co Meath	
Waste Sludge	02 05 02	WWTP	100.8	N/A	None	Transported by Clearpower Ltd	

						(McElveney Waste) (WCP-MH2005/89C) to Strains Composting Facility, Clones, Co. Monaghan (WFP-MN-08-0025-01)	
Wooden Pallets	20 01 38	Packaging/Deliveries	5.04	N/A		Collected by and transported to McCabe Pallet Supplies, Cootehill, Co. Cavan (WP06-29)	
Screenings	19 08 01	WWTP	0.1	N/A		Transported by Cavan Waste Disposal Ltd (Waste Collection permit MH/2001/37D) for disposal to Corranure Landfill, Cootehill, Cavan – Licence No. W0077-04	

1 A reference should be made to the main activity/ process for each waste.
2 The method of disposal or recovery should be clearly described and referenced to Attachment H.1

Table I.2(i) SURFACE WATER QUALITY

(Sheet 1 of 2) Monitoring Point/ Grid Reference: __ASW1__(E 259740 N 315173)_____

Parameter	Results (mg/l)				Sampling method[2] (grab, drift etc.)	Normal Analytical Range[2]	Analysis method / technique
	24.02.10	19.05.10	30.08.10	15.12.10			
pH	7.34	7.78	7.95	7.51	Grab	0 - 14	Standard Lab Method
Temperature	NM	NM	NM	NM		NM	
Electrical conductivity EC	NM	NM	NM	NM		NM	
Ammonia	0.03	0.07	0.08	0.11	Grab	N/A	Spectrophotometry : Internal Method EN094
Chemical oxygen demand	19	29	23	17	Grab	N/A	Spectrophotometry : Internal Method EN091
Biochemical oxygen demand	1.4	1.2	1.4	0.5	Grab	N/A	Standard Lab Method
Dissolved oxygen DO	NM	NM	NM	NM			
Calcium Ca	NM	NM	NM	NM			
Cadmium Cd	NM	NM	NM	NM			
Chromium Cr	NM	NM	NM	NM			
Chloride Cl	NM	NM	NM	NM			
Copper Cu	NM	NM	NM	NM			
Iron Fe	NM	NM	NM	NM			
Lead Pb	NM	NM	NM	NM			
Magnesium Mg	NM	NM	NM	NM			
Manganese Mn	NM	NM	NM	NM			
Mercury Hg	NM	NM	NM	NM			

Surface Water Quality (Sheet 2 of 2)

Parameter	Results (mg/l)				Sampling method (grab, drift etc.)	Normal Analytical Range	Analysis method / technique
	24.02.10	19.05.10	30.08.10	15.12.10			
Nickel Ni	NM	NM	NM	NM			
Potassium K	NM	NM	NM	NM			
Sodium Na	NM	NM	NM	NM			
Sulphate SO_4	NM	NM	NM	NM			
Zinc Zn	NM	NM	NM	NM			
Total alkalinity (as $CaCO_3$)	NM	NM	NM	NM			
Total organic carbon TOC	NM	NM	NM	NM			
Total oxidised nitrogen TON	3.6	1.2	2.4	1.4	Grab	N/A	Spectrophotometry : Internal Method EN0096
Nitrite NO_2	NM	NM	NM	NM			
Nitrate NO_3	1.8	0.8	0.4	0.3	Grab	N/A	Spectrophotometry : Internal Method EN0095
Faecal coliforms (/100mls)	NM	NM	NM	NM			
Total coliforms (/100mls)	NM	NM	NM	NM			
Phosphate PO_4	0.03	0.05	0.03	0.13	Grab	0 – 2.5	Spectrophotometry : Internal Method EN098

(Sheet 1 of 2) Monitoring Point/ Grid Reference: __ ASW2__(E 259666 N 315219)_____

Parameter	Results (mg/l)				Sampling method[2] (grab, drift etc.)	Normal Analytical Range[2]	Analysis method / technique
	24.02.10	19.05.10	30.08.10	15.12.10			
pH	7.32	7.92	7.94	7.54	Grab	N/A	Standard Lab Method
Temperature	NM	NM	NM	NM			
Electrical conductivity EC	NM	NM	NM	NM			
Ammonia	0.01	0.1	0.09	0.12	Grab	N/A	Spectrophotometry : Internal Method EN094
Chemical oxygen demand	22	28	31	28	Grab	N/A	Spectrophotometry : Internal Method EN091
Biochemical oxygen demand	1.3	1.2	1.1	0.8	Grab	N/A	Standard Lab Method
Dissolved oxygen DO	NM	NM	NM	NM			
Calcium Ca	NM	NM	NM	NM			
Cadmium Cd	NM	NM	NM	NM			
Chromium Cr	NM	NM	NM	NM			
Chloride Cl	NM	NM	NM	NM			
Copper Cu	NM	NM	NM	NM			
Iron Fe	NM	NM	NM	NM			
Lead Pb	NM	NM	NM	NM			
Magnesium Mg	NM	NM	NM	NM			
Manganese Mn	NM	NM	NM	NM			
Mercury Hg	NM	NM	NM	NM			

Surface Water Quality (Sheet 2 of 2)

Parameter	Results (mg/l)				Sampling method (grab, drift etc.)	Normal Analytical Range	Analysis method / technique
	24.02.10	19.05.10	30.08.10	15.13.10			
Nickel Ni	NM	NM	NM	NM			
Potassium K	NM	NM	NM	NM			
Sodium Na	NM	NM	NM	NM			
Sulphate SO_4	NM	NM	NM	NM			
Zinc Zn	NM	NM	NM	NM			
Total alkalinity (as $CaCO_3$)	NM	NM	NM	NM			
Total organic carbon TOC	NM	NM	NM	NM			
Total oxidised nitrogen TON	6.2	1.6	2.1	1.9	Grab	N/A	Spectrophotometry : Internal Method EN0096
Nitrite NO_2	NM	NM	NM	NM			
Nitrate NO_3	1.3	0.9	0.6	0.5	Grab	N/A	Spectrophotometry : Internal Method EN0095
Faecal coliforms (/100mls)	NM	NM	NM	NM			
Total coliforms (/100mls)	NM	NM	NM	NM			
Phosphate PO_4	0.01	0.03	0.04	0.14	Grab	N/A	Spectrophotometry : Internal Method EN098

Table I.4(i) GROUNDWATER QUALITY
(Sheet 1 of 2) Monitoring Point/ Grid Reference: GW-1 (E259701 N315213), GW-2 (E259741 N315385), GW-3 (E259821 N315291)

Parameter	Results (mg/l)				Sampling method (composite etc.)	Normal Analytical Range	Analysis method / technique
	GW-1	GW-2	GW-3	N/A			
pH	7.17	7.59	7.45		Grab sample	0 - 14	DOE/SCA Standard Lab Method using auto pH electrode
Temperature	NM	NM	NM		Grab sample	N/A	
Electrical conductivity EC	NM	NM	NM		Grab sample	N/A	
Ammonia	NM	NM	NM		Grab sample	N/A	
Dissolved oxygen DO	NM	NM	NM		Grab sample	N/A	
Residue on evaporation (180°C)	NM	NM	NM		Grab sample	N/A	
Calcium Ca	191.0	84.7	115.0		Grab sample	N/A	
Cadmium Cd	NM	NM	NM		Grab sample	N/A	Standard Lab Method using ICP-MS
Chromium Cr	NM	NM	NM		Grab sample	N/A	
Chloride Cl	221.0	18.2	23.30		Grab sample	N/A	Standard Lab Method (by automated colorimetric analysis
Copper Cu	NM	NM	NM		Grab sample	N/A	
Cyanide Cn, total	NM	NM	NM		Grab sample	N/A	
Iron Fe	NM	NM	NM		Grab sample	N/A	
Lead Pb	NM	NM	NM		Grab sample	N/A	
Magnesium Mg	17.0	22.0	14.0		Grab sample	N/A	Standard Lab Method using ICP-MS
Manganese Mn	NM	NM	NM		Grab sample	N/A	
Mercury Hg	NM	NM	NM		Grab sample	N/A	
Nickel Ni	NM	NM	NM		Grab sample	N/A	
Potassium K	2.8	2.36	1.87		Grab sample	N/A	Standard Lab Method using ICP-MS
Sodium Na	79	46	25		Grab sample	N/A	Standard Lab Method using ICP-MS

Groundwater Quality (sheet 2 of 2)

Parameter	Results (mg/l)				Sampling method (composite, dipper etc.)	Normal Analytical Range	Analysis method / technique
	GW-1 15/07/09	GW-2 15/07/09	GW-3 15/07/09	Date			
Phosphate PO_4	NM	NM	NM				
Sulphate SO_4	122.2	6.58	6.14		Grab Sample		Standard Lab Method using ICP-MS
Zinc Zn	NM	NM	NM				
Total alkalinity (as $CaCO_3$)	NM	NM	NM				
Total organic carbon TOC	NM	NM	NM				
Total oxidised nitrogen TON	NM	NM	NM				
Arsenic As	NM	NM	NM				
Barium Ba	NM	NM	NM				
Boron B	NM	NM	NM				
Fluoride F	NM	NM	NM				
Phenol	NM	NM	NM				
Phosphorus P	NM	NM	NM				
Selenium Se	NM	NM	NM				
Silver Ag	NM	NM	NM				
Nitrite NO_2	NM	NM	NM				
Nitrate NO_3	NM	NM	NM				
Faecal coliforms (/100mls)	<1	<1	<1		Grab Sample		Standard Lab Method
Total coliforms (/100mls)	<1	8	<1		Grab Sample		Standard Lab Method
Water level (m OD)	NM	NM	NM				

TABLE I.4(ii): LIST OF OWNERS/FARMERS OF LAND

Land Owner	Townlands where landspreading	Map Reference	Fertiliser P requirement for each farm
Pat Callan	Philipstown, Dunleer	N/A	*NMP must take account of on-farm slurry

Total P requirement of the client List _2.6 kg P/m^3_____

TABLE I.4(ii): LANDSPREADING

Land Owner/Farmer_Pat Callan_____

Map Reference_N/A_____

Field ID	Total Area (ha)	(a) Usable Area (ha)	Soil P Test Mg/l	Date of P test	Crop	P Required (kg P/ha)	Volume of On-Farm Slurry Returned (m^3/ha)	Estimated P in On-Farm Slurry (kg P/ha)	(b) Volume to be Applied (m^3/ha)	P Applied (kg P/ha)	Total Volume of imported slurry per plot (m^3)
PC3465	10.29	7.93			Winter wheat	35	N/A	N/A	13.45		106.72
PC3470	8.52	7.99			Spring Barley	45	N/A	N/A	17.31		138.32
PC3471	8.79	7.83			Winter barley	45	N/A	N/A	17.31		135.55
PC3472	6.58	4.16			Spring barley	35	N/A	N/A	13.45		55.99
PC3473	5.62	5.62			Maize	50	N/A	N/A	19.22		108.02
PC3474	4.48	3.43			Spring wheat	35	N/A	N/A	13.44		46.12
PC3477	6.25	5.81			Spring wheat	25	N/A	N/A	9.61		55.88
PC3478	5.75	4.44			Spring wheat	25	N/A	N/A	9.6		42.64

TOTAL VOLUME THAT CAN BE IMPORTED ON TO THE FARM: 689.24 TONNES

Concentration of P in landspread material	2.6 - kg P/m^3
Concentration of N in landspread material	18.5 - kg N/m^3

Land Owner/Farmer_Pat Callan (Additional Lands)_____

Map Reference_N/A_____

Field ID	Total Area (ha)	(a) Usable Area (ha)	Soil P Test Mg/l	Date of P test	Crop	P Required (kg P/ha)	Volume of On-Farm Slurry Returned (m^3/ha)	Estimated P in On-Farm Slurry (kg P/ha)	(b) Volume to be Applied (m^3/ha)	P Applied (kg P/ha)	Total Volume of imported slurry per plot (m^3)
PC3466	2.5	2.1	2.5	25/06/10	Spring barley	45	22.8	18.3	10.3	26.7	21.1
PC3467	2,4	1.3	9.0		Spring barley	25	12.7	10.2	5.7	14.8	7.5
PC3468	4.3	3.8	15.8		Winter wheat	0	0	0	0	0	0
PC3469	5.5	5.0	2.5		Grassland	39	19.8	15.8	8.9	23.2	44.7
PC3475	5.2	5.2	1.8		Winter wheat	45	22.8	18.3	10.3	26.7	53.8
PC3475	10.3	10.3	1.9		Winter wheat	45	22.8	18.3	10.3	26.7	105.8
PC3479	3.3	2.6	3.7		Grassland	29	14.7	11.8	6.6	17.2	17.2
PC3480	5.7	5.3	3.7		Winter wheat	35	17.8	14.2	8.0	20.8	42.4
PC3481	22.9	17.1	3.1		Grassland	29	14.7	11.8	6.6	17.2	112.9
PC3482	4.5	3.2	30.0		Grassland	0	0.0	0	0	0	0

TOTAL VOLUME THAT CAN BE IMPORTED ON TO THE FARM: 405.4 TONNES

Concentration of P in landspread material	2.6 - kg P/m^3
Concentration of N in landspread material	18.5 - kg N/m^3

Table I.7(i): AMBIENT NOISE ASSESSMENT

Third Octave analysis for noise emissions should be used to determine tonal noises

	National Grid Reference	Sound Pressure Levels		
	(6N, 6E)	$L(A)_{eq}$	$L(A)_{10}$	$L(A)_{90}$
1. SITE BOUNDARY				
Location 1:	Not Measured			
Location 2:	Not Measured			
Location 3:	Not Measured			
Location 4:	Not Measured			
2. NOISE SENSITIVE LOCATIONS				
Location 1: NSL-1	E259006 N315243	47	50	38
Location 2: NSL-2	E259136 N314913	52	50	40
Location 3: NSL-3	E260922 N315705	41	40	32
Location 4: NSL-4	E259751 N315098	54	58	45
Location 5: NSL-5	E259463 N315591	53	44	35

Note: Monitoring results are from 2010 annual noise survey (Daytime) with facility in operation
NOTE: All locations should be identified on accompanying drawings.

ANNEX 2: CHECKLIST FOR ARTICLE 10 COMPLIANCE

Article 10 of the Environmental Protection Agency (Licensing) Regulations, 1994 to 2004 sets out the statutory requirements for information to accompany a licence application. The Application Form is designed in such a way as to set out these questions in a structured manner and not necessarily in the order presented in Article 10. In order to ensure a legally valid application in respect of Article 10 requirements, all Applicants should complete the following checklist and submit it with the completed Application Form.

Article 10(2)		**Section in Application**	**Checked by Applicant ✓**
(a)	give the name, address and telephone number of the applicant and, if different, any address to which correspondence relating to the application should be sent and, if the applicant is a body corporate, the address of its registered or principal office,	*B.1*	√
(b)	give - (i) in the case of an established activity, the number of employees and other persons working or engaged in connection with the activity on the date after which a licence is required and during normal levels of operation, or (ii) in any other case, the gross capital cost of the activity to which the application relates,	*B.4*	√
(c)	give the name of the planning authority in whose functional area the activity is or will be carried on,	*B.5*	√
(d)	in the case of a discharge of any trade effluent or other matter (other than domestic sewage or storm water) to a sewer of a sanitary authority, give the name of the sanitary authority in which the sewer is vested or by which it is controlled,	*N/A*	√
(e)	give the location or postal address (including where appropriate, the name of the relevant townland or townlands) and the National Grid reference of the premises to which the activity relates,	*B.2*	√
(f)	specify the relevant class or classes in the First Schedule to the Act to which the activity relates,	*B.3*	√
(g)	specify the raw and ancillary materials, substances, preparations, fuels and energy which will be produced by or utilised in the activity,	*G.1(i), G.1(ii)*	√
(h)	describe the plant, methods, processes, ancillary processes, abatement, recovery and treatment systems, and operating procedures for the activity,	*C.2, D.1, F.1*	√

Article 10(2) *continued../*		**Section in Application**	**Checked by Applicant ✓**
(i)	indicate how the requirements of section 83(5)(a)(i) to (v) and (vii) to (x) of the Act shall be met, having regard, where appropriate, to any relevant specification issued by the Agency under section 5(3) of the Act and the reasons for the selection of the arrangements proposed,	*L*	√
(j)	give particulars of the source, nature, composition, temperature, volume, level, rate, method of treatment and location of emissions, and the period or periods during which the emissions are made or are to be made,	*E.1 – E.6*	√
(k)	describe the arrangements for the prevention or minimisation of waste and, where waste is produced, the on and of site arrangements for the recovery or disposal of solid and liquid wastes,	*H.2*	√
(l)	specify, by reference to the relevant European Waste Catalogue codes as prescribed by Commission Decision 2000/532/EC of 03 May 2000, the quantity and nature of the waste or wastes produced or to be produced by the activity,	*H.1(i), H.1(ii)*	√
(m)	provide: (i) details, and an assessment, of the impacts of any existing or proposed emissions on the environment, including on an environmental medium other than that or those into which the emissions are or are to be made, and (ii) details of the proposed measures to prevent or eliminate, or where that is not practicable, to limit, reduce or abate emissions,	*I.1 – I.8*	√
(n)	identify monitoring and sampling points and outline proposals for monitoring emissions and the environmental consequences of any such emissions,	*F.2*	√
(o)	describe the condition of the site of the installation,	*D.1, I.1 – I.7*	√
(p)	describe in outline the main alternatives, if any, to the proposals contained in the application which were studied by the applicant,	*I.8*	√
(q)	specify the measures to be taken to comply with an environmental quality standard where such a standard requires stricter conditions to be attached to a licence than would otherwise be determined by reference to best available techniques,	*N/A*	

Article 10(2) *continued../*		Section in Application	Checked by Applicant ✓
(r)	describe the measures to be taken for minimising pollution over long distances or in the territory of other states,	*F.1*	√
(s)	describe the measures to be taken under abnormal operating conditions, including start-up, shutdown, leaks, malfunctions, breakdowns and momentary stoppages,	*J*	√
(t)	describe the measures to be taken on and following the permanent cessation of the activity or part of the activity to avoid any risk of environmental pollution and to return the site of the activity to a satisfactory state,	*K*	√
(u)	describe, in the case of an activity which gives, or could give rise, to an emission containing a hazardous substance which is discharged to an aquifer and is specified in the Annex to Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution caused by certain dangerous substances, the arrangements necessary to comply with said Council Directive,	*H.1, F.1*	√
(v)	include any other information required under Article 6(1) of Council Directive 2008/1/EC of 15 January 2008 concerning integrated pollution prevention and control,	*F.1, F.2*	√
(w)	include a non-technical summary of information provided in relation to the matters specified in paragraphs (f) to (v) above,	*A*	√
(x)	state whether the activity consists of, comprises, or is for the purposes an establishment to which the European Communities (Control of Major Accident Hazards involving Dangerous Substances) Regulations, 2000 apply,	*B.10*	√

Article 10(3) Without prejudice to Article 12(1), an application for a licence shall be accompanied by -		**Section in Application**	**Checked by Applicant ✓**
(a)	a copy of the relevant page of the newspaper in which the notice in accordance with article 6 has been published,	*B.8*	√
(b)	a copy of the text of the site notice erected or fixed on the land or structure in accordance with article 7,	*B.8*	√
(c)	a copy of the notice given to the planning authority under section 85(1)(a) of the Act,	*B.8*	√
(d)	a copy of such plans, including a site plan and location map (no larger than A3), and such other particulars, reports and supporting documentation as are necessary to identify and describe -		
	(i) the activity	*B.2*	√
	(ii) the position of the site notice in accordance with article 7,	*B.8*	√
	(iii) the point or points from which emissions are made or are to be made, and	*B.2*	√
	(iv) monitoring and sampling points, and	*B.2*	√
(e)	a fee specified in accordance with section 94 of the Act.	*Enclosed with overall application*	√

Article 10(4)		**Checked by Applicant ✓**
(b)	A signed original and 2 hardcopies of the application and accompanying documents/particulars in hardcopy format plus 2 copies of all files in electronic searchable PDF format on CD-Rom shall be submitted to the headquarters of the Agency. In cases where an E.I.S. is required to be submitted to the Agency in support of the application, a signed original and 2 hardcopies of the EIS plus 16* copies of all files in electronic searchable PDF format on CD-Rom shall be submitted to the headquarters of the Agency. * Energy sector applicants = 18 copies	√
	Hardcopies submitted.	√
	CD version submitted.	√