



# Permit with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

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Newport Semiconductor Plant  
International Rectifier Newport Limited  
Cardiff Road  
Duffryn  
Newport  
Gwent  
NP10 8YJ

Permit number

BV7460ID

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## Introductory note

### ***This introductory note does not form a part of the Permit***

The following Permit is issued under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (S.I.2000 No.1973), as amended, (“the PPC Regulations”) to operate an installation carrying out activities covered by the description in Section 4.2 Part A(1)(b) in Part 1 to Schedule 1 of the PPC Regulations, to the extent authorised by the Permit:

Section 4.2 Part A(1)(b) - “any manufacturing activity which is likely to result in the release into the air of any hydrogen halide (other than the manufacture of glass or the coating, plating or surface treatment of metal) or which is likely to result in the release into the air or water of any halogen or any of the compounds mentioned in paragraph (a)(vi), other than the treatment of water.”

Aspects of the operation of the installation which are not regulated by conditions of the Permit are subject to the condition implied by Regulation 12(10) of the PPC Regulations, i.e. the Operator shall use the best available techniques for preventing or, where that is not practicable, reducing emissions from the installation.

Techniques include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

In some sections of the Permit conditions require the Operator to use Best Available Techniques (BAT), in each of the aspects of the management of the installation, to prevent and where that is not practicable to reduce emissions. The conditions do not explain what is BAT. In determining BAT, the Operator should pay particular attention to relevant sections of the IPPC Sector guidance, appropriate Horizontal guidance and other relevant guidance.

A non-technical description of the installation is given in the Application, but the main features of the installation are as follows.

International Rectifiers Newport operate a semiconductor manufacturing facility to produce microchips on silicon based wafers. Production capacity is approximately 19,000 wafers a week split between two areas Fab 10 and Fab 11. Both areas are designed to operate 24 hours per day, 365 days per year. The products from this process are used in a variety of industries including the automotive and energy management products.

There are 14 emission points to air associated with the process. These can be characterised as toxic extract which is passed through a caustic scrubber absorption tower to remove acidic by-products from the process, solvent extract which undergoes treatment, where required, by thermal oxidation, pyrophoric exhaust air and general exhaust air. There is one release to controlled water of uncontaminated surface water that passes through interceptors prior to release and one release to sewer from the ETP which neutralises the acidic process effluent.

The site is located approximately 1 km from the Gwent Levels SSSI and within 10 km of the European habitat sites (Severn Estuary and River Usk)

The environmental management system used on site is externally accredited to ISO14001 and has an underlying climate change agreement as a company

Note that the Permit requires the submission of certain information to the Agency (see Sections 4 and 5). In addition, the Agency has the power to seek further information at any time under regulation 28 to the PPC Regulations provided that it acts reasonably.

**Other PPC Permits relating to this installation**

Permit holder	Permit Number	Date of Issue
None		

**Superseded Licences/Authorisations/Consents relating to this installation**

Holder	Reference Number	Date of Issue
International Rectifier Newport Limited (Surface Water Discharge Consent)	AN0272001	27 /06/1997

Other activities may take place on the site of this installation which are not regulated under this Permit or any other PPC Permit referred to in the Table above.

**Other existing Licences/Authorisations/Registrations relating to this site**

Holder	Reference Number	Date of issue

**Public Registers**

Considerable information relating to Permits including the Application is available on public registers in accordance with the requirements of the PPC Regulations. Certain information may be withheld from public registers where it is commercially confidential or contrary to national security.

## Variations to the Permit

This Permit may be varied in the future (by the Agency serving a Variation Notice on the Operator). If the Operator itself wants any of the Conditions of the Permit to be changed, it must submit a formal Application. The Status Log within the Introductory Note to any such Variation Notice will include summary details of this Permit, variations issued up to that point in time and state whether a consolidated version of the Permit has been issued.

## Surrender of the Permit

Before this Permit can be wholly or partially surrendered, an Application to surrender the Permit has to be made by the Operator. For the application to be successful, the Operator must be able to demonstrate to the Agency that there is no pollution risk and that no further steps are required to return the site to a satisfactory state.

## Transfer of the Permit or part of the Permit

Before the Permit can be wholly or partially transferred to another person, an Application to transfer the Permit has to be made jointly by the existing and proposed holders. A transfer will be allowed unless the Agency considers that the proposed holder will not be the person who will have control over the operation of the installation or will not comply with the conditions of the transferred Permit. If, however, the Permit authorises the carrying out of a specified waste management activity, the transfer will only be allowed if the proposed holder is also considered to be "a fit and proper person" as required by the PPC Regulations.

## Talking to us

Please quote the Permit Number if you contact the Agency about this Permit.

To give a Notification under Condition 5.1.1, the Operator should use the Incident Hotline telephone number (0800 80 70 60) or any other number notified in writing to the Operator by the Agency for that purpose.

## Status Log

Detail	Date	Response Date
Application BV7460ID	Received 31/12/04	
Response to request for information	Request dated 17/01/05 and 06/05/05	Response dated 21/01/05 and 13/10/05
Permit determined	21 <sup>th</sup> December 2005	

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**End of Introductory Note.**

**Permit**  
Pollution Prevention and Control  
Regulations 2000



**ENVIRONMENT  
AGENCY**

## Permit

Permit number  
**BV7460ID**

The Environment Agency (the Agency) in exercise of its powers under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations (SI 2000 No 1973), hereby authorises **International Rectifiers Newport Limited** ("the Operator"),

Of/ whose Registered Office is  
**Fox Court**  
**14 Gray's Inn Road**  
**London**  
**WC1X 8HN**

**Company registration number 04338966**

to operate an Installation(s) at  
**Newport Semiconductor Plant**  
**Cardiff Road**  
**Duffryn**  
**Newport**  
**Gwent**  
**NP10 8YJ**

to the extent authorised by and subject to the conditions of this Permit.

Signed	Date

**S McFarlane**

Authorised to sign on behalf of the Agency

# Conditions

## 1 General

### 1.1 Permitted Activities

1.1.1 The Operator is authorised to carry out the activities and the associated activities specified in Table 1.1.1.

Activity listed in Schedule 1 of the PPC Regulations / Associated Activity	Description of specified activity	Limits of specified activity
Section 4.2 Part A(1)(b) manufacturing activity which may result in the release of any hydrogen halide	Manufacture of semi-conductor wafers	From receipt of raw materials to completion of semi-conductor wafers and dispatch products and wastes.
Section 4.2 Part A(1)(d) manufacturing activity which may result in the release of any platinum, arsenic or arsine	Manufacture of semi-conductor wafers	From receipt of raw materials to completion of semi-conductor wafers and dispatch of products and wastes.
Section 7 Part B (other surface cleaning where the solvent consumption is greater than 2 tonnes/year)	Manufacture of semi-conductor wafers	From receipt of raw materials to emissions to air and dispatch of waste.
Section 5.3 Part A(1)(c)(ii) : Disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by physico-chemical treatment.	Effluent treatment plant.	From production of effluent to the point of discharge to the sewer.
Directly associated activity	Combustion of natural gas for water heating, steam production and thermal oxidation.	From receipt of raw materials to emissions to air.

### 1.2 Site

1.2.1 The activities authorised under condition 1.1.1 shall not extend beyond the Site, being the land shown edged in green on the Site Plan at Schedule 5 to this Permit.

### 1.3 Overarching Management Condition

1.3.1 Without prejudice to the other conditions of this Permit, the Operator shall implement and maintain a management system, organisational structure and allocate resources that are sufficient to achieve compliance with the limits and conditions of this Permit.

### 1.4 Improvement Programme

1.4.1 The Operator shall complete the improvements specified in Table 1.4.1 by the date specified in that table, and shall send written notification of the date of completion of each requirement to the Agency within 14 days of the completion of each such requirement.

**Table 1.4.1: Improvement programme**

Reference	Requirement	Date
IP1	The Operator shall provide a report in writing to the Agency detailing the monitoring method used to determine effluent flow at release point S1. The monitoring method shall be agreed in writing with the Agency	01/07/06
IP2	The Operator shall provide the Agency with a report on the substitution of raw materials for less hazardous alternatives and provide a justification when this is not feasible. This report should cover:- <ul style="list-style-type: none"> <li>the replacement of solvents with aqueous alternatives or, where this is not possible, the substitution by a less hazardous solvent.</li> <li>the replacement of any substance (particularly metals) with a less harmless alternative.</li> </ul> The report shall include a time-scale for the implementation of the improvements identified in the report for approval by the Agency in writing	01/07/06
IP3	The operator shall carry out a water efficiency audit of the installation. The audit shall have regard to the Agency Guidance Note IPPC S4.03, Draft 1, May 2004, Section 2.4.3, and shall provide a breakdown of significant water use by department or activity and shall establish the current installation performance (for example litre water/kg of product) and water efficiency objective(s) for this installation. A summary of the audit shall be sent to the Agency	01/09/06
IP4	The Operator shall undertake a survey of sub-surface structures The survey will take into account the requirements of section 2.2.5 of the Agency Guidance Note IPPC s4.03. A written report summarising the findings shall be submitted to the Agency. A timescale for implementation of any improvements shall be approved by the Agency.	01/09/06
IP5	The Operator shall submit a report on the possibility of calculating emissions to air and demonstrating compliance with ELVs to air within the permit by mass balance. This report should cover: <ul style="list-style-type: none"> <li>Comparison of monitored emissions with proposed mass balance techniques</li> </ul> A revised H1 assessment for air emissions based on monitoring results	01/10/06
IP6	The Operator shall review their written accident management plan with regard to the requirements set out in Section 2.8 of the Agency Guidance Note (IPPC S4.03, Draft 1, May 2004). Upon completion of the review the document shall be submitted to the Agency.	01/11/06
IP7	The Operator shall submit a report to the Agency by the date given in this programme, demonstrating whether the pH probes used for continuous measurement of pH on the effluent discharge to water meets with the performance standards given in the MCERTS document 'Continuous Water Monitoring Equipment Part 2, v1 February 2003'. The report shall include an assessment of the probes' performance with the criteria given in the standard and where these are not met, proposals and time-scales required to achieve the standard.	01/03/07
IP8	The Operator shall carry out a waste minimisation audit of the Installation. The assessment shall have regard to the Agency Guidance IPPC S4.03, Draft 1, May 2004. The audit report shall provide information on any lines and operations identified as causing a process loss, specifying for each, the amount lost (tonnes/year) and the percentage recovered in process or recycled. A summary of the audit shall be sent to the Agency in writing together with a timetable to implement any necessary changes identified.	01/07/07
IP9	Provide the Agency with a report detailing the proposals for the operator meet the requirements of the SED regulations as set in the condition 10 below.	31/10/06
IP10	Provide the Agency with a report confirming that the operator has fully met the requirements of the SED regulations.	1/10/07

1.4.2 Where the Operator fails to comply with any requirement by the date specified in Table 1.4.1 the Operator shall send written notification of such failure to the Agency within 14 days of such date.

## **1.5 Minor Operational Changes**

- 1.5.1 The Operator shall seek the Agency's written agreement to any minor operational changes under condition 2.1.1 of this Permit by sending to the Agency: written notice of the details of the proposed change including an assessment of its possible effects (including waste production) on risks to the environment from the Permitted Installation; any relevant supporting assessments and drawings; and the proposed implementation date.
- 1.5.2 Any such change shall not be implemented until agreed in writing by the Agency. As from the agreed implementation date, the Operator shall operate the Permitted Installation in accordance with that change, and relevant provisions in the Application shall be deemed to be amended.
- 1.5.3 When the qualification "unless otherwise agreed in writing" is used elsewhere in this Permit, the Operator shall seek such agreement by sending to the Agency written notice of the details of the proposed method(s) or techniques.
- 1.5.4 Any such method(s) or techniques shall not be implemented until agreed in writing by the Agency. As from the agreed implementation date, the Operator shall operate the Permitted Installation using that method or technique, and relevant provisions in the Application [(and the Site Protection and Monitoring Programme, as the case may be)] shall be deemed to be amended.

## **1.6 Pre-Operational Conditions**

- 1.6.1 There are no pre-operational conditions

## **1.7 Off-site Conditions**

- 1.7.1 There are no off-site conditions

## 2 Operating conditions

### 2.1 In-Process Controls

2.1.1 The Permitted Installation shall, subject to the conditions of this Permit, be operated using the techniques and in the manner described in the documentation specified in Table 2.1.1, or as otherwise agreed in writing by the Agency in accordance with conditions 1.5.1 and 1.5.2 of this Permit.

**Table 2.1.1: Operating techniques**

Description	Parts	Date Received
Application	The response to questions 2.1 and 2.2 given in pages 5-31 of the application dated 31/12/04	

2.1.2 The Permitted Installation shall, subject to the other conditions of this Permit, be operated using the techniques and in the manner described in the Site Protection and Monitoring Programme submitted under condition 4.1.7 of this Permit (as amended from time to time under condition 4.1.7), or as otherwise agreed in writing by the Agency.

### 2.2 Emissions

#### 2.2.1 Emissions to Air, (including heat, but excluding Odour, Noise or Vibration) from Specified Points

2.2.1.1 This Part 2.2.1 of this Permit shall not apply to releases of odour, noise or vibration.

2.2.1.2 Emissions to air from the emission points in Table 2.2.1 shall only arise from the source(s) specified in that Table.

**Table 2.2.1 : Emission points to air**

Emission point reference or description	Source	Location of emission point
A1	Solvents FAB11	Point 1 on Drawing 04-IRF-IPPC-01
A2	Thermoclean 500	Point 4 on Drawing 04-IRF-IPPC-01
A3	Photo/Bench Ext/Dil	Point 5 on Drawing 04-IRF-IPPC-01
A4	Polaris1+2 Ext/Polaris 1+2 Dil	Point 6 on Drawing 04-IRF-IPPC-01
A5	G Cab Ext / Cab Dil	Point 7 on Drawing 04-IRF-IPPC-01
A6	Photo Ext / Photo Dil	Point 11 on Drawing 04-IRF-IPPC-01
A7	Photo Ext / SVG Developer	Point 12 on Drawing 04-IRF-IPPC-01
A8	Photo Ext Coat	Point 13 on Drawing 04-IRF-IPPC-01
A9	Photo Ext / SVG Developer	Point 14 on Drawing 04-IRF-IPPC-01
A10	Solvent Extraction	Point 15 on Drawing 04-IRF-IPPC-01
A11	Pyrophoric Gas	Point 2 on Drawing 04-IRF-IPPC-01
A12	S5 Scrubber	Point 17 on Drawing 04-IRF-IPPC-01
A13	Toxic Extract FAB11 Scrubbed	Point 3 on Drawing 04-IRF-IPPC-01
A14	Fab 11 Scrubbed Toxic Extract	Point 6 on Drawing 04-IRF-IPPC-01

2.2.1.3 The limits for emissions to air for the parameters and emission points set out in Table 2.2.2 shall not be exceeded.

**Table 2.2.2 : Emission limits to air and monitoring**

Emission point reference	Parameter	Limit (including Reference Period) <sup>1</sup>	Monitoring frequency	Monitoring method <sup>2</sup>
A12-A14	Ammonia	10 mg/m <sup>3</sup>	Once every 6 months	No BS, EN or ISO standard method is available
A12-A14	Hydrogen fluoride (as F)	5 mg/m <sup>3</sup>	Once every 6 months	BS EN 1911:1998
A12-A14	Hydrogen chloride	10 mg/m <sup>3</sup>	Once every 6 months	BS EN 1911:1998
A12-A14	Oxides of sulphur	7 mg/m <sup>3</sup>	Once every 6 months	BS 6069-4.4:1993
A12-A14	Oxides of nitrogen (as NO <sub>2</sub> )	5 mg/m <sup>3</sup> (as NO <sub>2</sub> )	Once every 6 months	ISO 10849

Note 1: See Section 6 for reference conditions.

Note 2: Or to an EN, BS, ISO, SCA blue book standard or other method as agreed in writing with the Agency.

2.2.1.4 No condition applies

## 2.2.2 Emissions to water (other than groundwater), including heat, from specified points

2.2.2.1 This Part 2.2.2 of this Permit shall not apply to releases of odour, noise or vibration or to releases to groundwater.

### Emissions to Water (Other than to Sewer)

2.2.2.2 Conditions 2.2.2.3 - 2.2.2.6 shall not apply to emissions to sewer.

2.2.2.3 Emissions to water from the emission points specified in Table 2.2.4 shall only arise from the sources specified in that Table

**Table 2.2.4: Emission point to water**

Emission Point description	Reference or Source	Receiving Water
W1 (Point S1A on Drawing 03-148-001)	Uncontaminated surface water drainage	River Ebbw

2.2.2.4 No condition applies.

2.2.2.5 No condition applies.

2.2.2.6 No condition applies

### Emissions to sewer

2.2.2.7 Emissions to sewer from the specified emission points in Table 2.2.7 shall only arise from the sources specified in that Table.

**Table 2.2.7 Emission points to sewer**

Emission point reference or description	Source	Sewer
S1 (Point T3 on Drawing 03-148-0010)	Effluent treatment plant	Welsh Water Cardiff WWTW

2.2.2.8 The limits for the emissions to sewer for the parameter(s) and emission point(s) set out in Table 2.2.8 shall not be exceeded.

**Table 2.2.8 : Emission limits and monitoring frequency to sewer**

Emission reference	point	Substance	Limit (including Reference Period)	Monitoring frequency	Monitoring method
S1		pH	Min 6 max 11	daily	No standard method is available <sup>[1]</sup>

[1] The Operator shall provide a procedure / work instruction that shall be agreed with the Agency for the operation of the continuous pH meter having regard to the calibration requirements given in BS6068-2.50:1995, ISO 10523:1984

2.2.2.9 No condition applies.

2.2.2.10 No condition applies

## 2.2.3 Emissions to groundwater

2.2.3.1 No emission from the Permitted Installation shall give rise to the introduction into groundwater of any substance in List I (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)).

2.2.3.2 No emission from within the Permitted Installation shall give rise to the introduction into groundwater of any substance in List II (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)) so as to cause pollution (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)).

2.2.3.3 For substances other than those in List I or II (as defined in the Groundwater Regulations 1998 (SI 1998 No.2746)), the Operator shall use BAT to prevent or where that is not practicable to reduce emissions to groundwater from the Permitted Installation provided always that the techniques used by the Operator shall be no less effective than those described in the Application.

## 2.2.4 Fugitive emissions of substances to air

2.2.4.1 The Operator shall use BAT so as to prevent or where that is not practicable to reduce fugitive emissions of substances to air from the Permitted Installation in particular from:

- storage areas
- buildings
- pipes, valves and other transfer systems
- open surfaces

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

## 2.2.5 Fugitive emissions of substances to water and sewer

2.2.5.1 Subject to condition 2.2.5.2 below, the Operator shall use BAT so as to prevent or where that is not practicable to reduce fugitive emissions of substances to water (other than Groundwater) and sewer from the Permitted Installation in particular from:

- all structures under or over ground
- surfacing
- bunding
- storage areas

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

2.2.5.2 There shall be no release to water that would cause a breach of an EQS established by the UK Government to implement the Dangerous Substances Directive 76/464/EEC.

## 2.2.6 Odour

2.2.6.1 The Operator shall use BAT so as to prevent or where that is not practicable to reduce odorous emissions from the Permitted Installation, in particular by:

- limiting the use of odorous materials
- restricting odorous activities
- controlling the storage conditions of odorous materials
- controlling processing parameters to minimise the generation of odour
- optimising the performance of abatement systems
- timely monitoring, inspection and maintenance
- employing, where appropriate, an approved odour management plan

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

2.2.6.2 No condition applies.

2.2.6.3 No condition applies.

## 2.2.7 Emissions to Land

2.2.7.1 This Part 2.2.7 of this Permit shall not apply to emissions to groundwater.

2.2.7.2 No emission from the Permitted installation shall be made to land.

2.2.7.3 No condition applies

## 2.2.8 Equivalent Parameters or Technical Measures

2.2.8.1 No condition applies

## 2.3 Management

2.3.1 A copy of this Permit and those parts of the application referred to in this Permit shall be available, at all times, for reference by all staff carrying out work subject to the requirements of the Permit.

### ***Training***

- 2.3.2 The Permitted Installation shall be supervised by staff who are suitably trained and fully conversant with the requirements of this Permit.
- 2.3.3 All staff shall be fully conversant with those aspects of the Permit conditions which are relevant to their duties and shall be provided with adequate professional technical development and training and written operating instructions to enable them to carry out their duties.
- 2.3.4 The Operator shall maintain a record of the skills and training requirements for all staff whose tasks in relation to the Permitted Installation may have an impact on the environment and shall keep records of all relevant training.

### ***Maintenance***

- 2.3.5 All plant and equipment used in operating the Permitted Installation, the failure of which could lead to an adverse impact on the environment, shall be maintained in good operating condition.
- 2.3.6 The Operator shall maintain a record of relevant plant and equipment covered by condition 2.3.5 and for such plant and equipment:
  - 2.3.6.1 a written or electronic maintenance programme; and
  - 2.3.6.2 records of its maintenance.

### ***Incidents and Complaints***

- 2.3.7 The Operator shall maintain and implement written procedures for:
  - 2.3.7.1 taking prompt remedial action, investigating and reporting actual or potential non-compliance with operating procedures or emission limits; and
  - 2.3.7.2 investigating incidents, (including any malfunction, breakdown or failure of plant, equipment or techniques, down time, any short term and long term remedial measures and near misses) and prompt implementation of appropriate actions; and
  - 2.3.7.3 ensuring that detailed records are made of all such actions and investigations.
- 2.3.8 The Operator shall record and investigate complaints concerning the Permitted Installation's effects or alleged effects on the environment. The record shall give the date and nature of complaint, time of complaint, name of complainant (if given), a summary of any investigation and the results of such investigation and any actions taken.
  - 2.3.9 No condition applies

## **2.4 Efficient use of raw materials**

- 2.4.1 The Operator shall -
  - 2.4.1.1 maintain the raw materials table or description submitted in Section 2.4 of the Application and in particular consider on a periodic basis whether there are suitable alternative materials to reduce environmental impact;

- 2.4.1.2 carry out periodic waste minimisation audits and water use efficiency audits. If such an audit has not been carried out in the 2 years prior to the issue of this Permit, then the first such audit shall take place within 2 years of its issue. The methodology used and an action plan for increasing the efficiency of the use of raw materials or water shall be submitted to the Agency within 2 months of completion of each such audit and a review of the audit and a description of progress made against the action plan shall be submitted to the Agency at least every 4 years thereafter; and
- 2.4.1.3 ensure that incoming water use is directly measured and recorded.

## 2.5 Waste Storage and Handling

- 2.5.1 The Operator shall design, maintain and operate all facilities for the storage and handling of waste on the Permitted installation such that there are no releases to water or land during normal operation and that emissions to air and the risk of accidental release to water or land are minimised.
- 2.5.2 The Operator shall use BAT so as to prevent or where that is not practicable to reduce emissions of litter from the Permitted Installation provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

## 2.6 Waste recovery or disposal

- 2.6.1 Waste produced at the Permitted Installation shall be:
- 2.6.1.1 recovered to no lesser extent than described in the Application; and
- 2.6.1.2 where not recovered, disposed of while avoiding or reducing any impacts on the environment provided always that this is not done in any way that would have a greater effect on the environment than that described in the Application.
- 2.6.2 No condition applies.
- 2.6.3 No condition applies
- 2.6.4 No condition applies

## 2.7 Energy Efficiency

- 2.7.1 The Operator shall produce a report on the energy consumed at the Permitted Installation over the previous calendar year, by 31 January each year, providing the information required by condition 4.1.2.
- 2.7.2 The Operator shall maintain and update annually an energy management system which shall include, in particular, the monitoring of energy flows and targeting of areas for improving energy efficiency.
- 2.7.3 The Operator shall design, maintain and operate the Permitted Installation so as to secure energy efficiency, taking into account relevant guidance including the Agency's Energy Efficiency Horizontal Guidance Note as from time to time amended. Energy efficiency shall be secured in particular by:
- ensuring that the appropriate operating and maintenance systems are in place;

- ensuring that all plant is adequately insulated to minimise energy loss or gain;
- ensuring that all appropriate containment methods, (e.g. seals and self-closing doors) are employed and maintained to minimise energy loss;
- employing appropriate basic controls, such as simple sensors and timers, to avoid unnecessary discharge of heated water or air;
- where building services constitute more than 5% of the total energy consumption of the installation, identifying and employing the appropriate energy efficiency techniques for building services, having regard in particular to the Building services part of the Agency's Energy Efficiency Horizontal Guidance Note H2; and

maintaining and implementing an energy efficiency plan which identifies energy saving techniques that are applicable to the activities and their associated environmental benefit and prioritises them, having regard to the appraisal method in the Agency's Energy Efficiency Horizontal Guidance Note H2.

## 2.8 Accident prevention and control

- 2.8.1 The Operator shall maintain and implement when necessary the accident management plan submitted or described in Section 2.8 of the Application. The plan shall be reviewed at least every 2 years or as soon as practicable after an accident, whichever is the earlier, and the Agency notified of the results of the review within 2 months of its completion.

## 2.9 Noise and Vibration

- 2.9.1 The Operator shall use BAT so as to prevent or where that is not practicable to reduce emissions of noise and vibration from the Permitted Installation, in particular by:
- equipment maintenance, eg. of fans, pumps, motors, conveyors and mobile plant;
  - use and maintenance of appropriate attenuation, eg. silencers, barriers, enclosures;
  - timing and location of noisy activities and vehicle movements;
  - periodic checking of noise emissions, either qualitatively or quantitatively; and
  - maintenance of building fabric,

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

- 2.9.2 No condition applies.

- 2.9.3 No condition applies

## 2.10 On-site Monitoring

- 2.10.1 The Operator shall maintain and implement an emissions monitoring programme which ensures that emissions are monitored from the specified points, for the parameters listed in and to the frequencies and methods described in Tables 2.2.2 and 2.2.8, unless otherwise agreed in writing, and that the results of such monitoring are assessed. The programme shall ensure that monitoring is carried out under an appropriate range of operating conditions.
- 2.10.2 The Operator shall carry out environmental or other specified substance monitoring to the frequencies and methods described in Table 2.10.1.

**Table 2.10.1 : Other monitoring requirements**

Emission point reference or source or description of point of measurement	Substance or parameter	Monitoring frequency	Monitoring method <sup>1</sup>	Other specifications
A1-A10	<i>Class B Volatile Organic Compounds (Total as Carbon).</i>	Once every 6 months	BS EN 1076:1997	
S1	Suspended solids	Every 6 months	BS EN 872:2005, BS 6068 –2.54:2005	None
S1	Chemical Oxygen Demand	Every 6 months	BS 6068-2.34:1988	
S1	Flow.	Continuous reported as daily averages.	As agreed in IP1.	To commence on completion of IP1.
S1	Copper	Every 6 months	BS EN 15586:2003 BS 6068-2.84:2003	
S1	Nickel	Every 6 months	BS 6068-2.29:1987, ISO 8288-1986	
S1	Zinc	Every 6 months	BS 6068-2.29:1987, ISO 8288-1986	
S1	Chromium	Every 6 months	BS EN 1233:1997, BS 6068-2.38:1997	
S1	Sulphate	Every 6 months	ISBN 0117522406	

Note 1: Or as otherwise agreed in writing by the Agency.

2.10.3 No condition applies.

2.10.4 No condition applies.

2.10.5 The Operator shall notify the Agency at least 14 days in advance of undertaking monitoring and/ or spot sampling, where such notification has been requested in writing by the Agency.

2.10.6 The Operator shall maintain records of all monitoring taken or carried out (this includes records of the taking and analysis of samples instrument measurements (periodic and continual), calibrations, examinations, tests and surveys) and any assessment or evaluation made on the basis of such data.

2.10.7 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme in condition 2.10.1 of this Permit and the environmental or other monitoring specified in condition 2.10.2 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing.

2.10.8 There shall be provided:

- 2.10.8.1 safe and permanent means of access to enable sampling/monitoring to be carried out in relation to the emission points specified in Schedule 2 to this Permit, unless otherwise specified in that Schedule; and
- 2.10.8.2 safe means of access to other sampling/monitoring points when required by the Agency.
- 2.10.9 The Operator shall carry out the on-going monitoring identified in the Site Protection and Monitoring Programme submitted under condition 4.1.7, unless otherwise agreed in writing by the Agency.
- 2.10.10 The Operator shall, within 6 months of the issue of this Permit, in accordance with and using the format given in the Land Protection Guidance:
  - 2.10.10.1 collect the site reference data identified in the Site Protection and Monitoring Programme submitted under condition 4.1.7, and
  - 2.10.10.2 report that site reference data to the Agency,
    - unless otherwise agreed in writing by the Agency.

## **2.11 Closure and Decommissioning**

- 2.11.1 The Operator shall maintain and operate the Permitted Installation so as to prevent or minimise any pollution risk, including the generation of waste, on closure and decommissioning in particular by:-
  - 2.11.1.1 attention to the design of new plant or equipment;
  - 2.11.1.2 the maintenance of a record of any events which have, or might have, impacted on the condition of the site along with any further investigation or remediation work carried out; and
  - 2.11.1.3 the maintenance of a site closure plan to demonstrate that the installation can be decommissioned avoiding any pollution risk and returning the site of operation to a satisfactory state.
- 2.11.2 Notwithstanding condition 2.11.1 of this Permit, the Operator shall carry out a full review of the Site Closure Plan at least every 4 years.
- 2.11.3 The site closure plan shall be implemented on final cessation or decommissioning of the Permitted activities or part thereof.
- 2.11.4 The Operator shall give at least 30 days written notice to the Agency before implementing the site closure plan.

## **2.12 Multiple Operator installations**

- 2.12.1 This is not a multi-Operator installation

## **2.13 Transfer to effluent treatment plant**

- 2.13.1 No transfers to effluent treatment plant are controlled under this part of this Permit.
- 2.13.2 No condition applies.

### 3 Records

- 3.1 The Operator shall ensure that all records required to be made by this Permit and any other records made by it in relation to the operation of the Permitted Installation shall:-
- 3.1.1 be made available for inspection by the Agency at any reasonable time;
  - 3.1.2 be supplied to the Agency on demand and without charge;
  - 3.1.3 be legible;
  - 3.1.4 be made as soon as reasonably practicable;
  - 3.1.5 indicate any amendments which have been made and shall include the original record wherever possible;
  - 3.1.6 be retained at the Permitted Installation, or other location agreed by the Agency in writing, for a minimum period of 4 years from the date when the records were made, unless otherwise agreed in writing; and
  - 3.1.7 where they concern the condition of the site of the Installation or are related to the implementation of the Site Protection and Monitoring Programme, be kept at the Permitted Installation, or other location agreed by the Agency in writing, until all parts of the Permit have been surrendered.

## 4 Reporting

- 4.1.1 All reports and written and or oral notifications required by this Permit and notifications required by Regulation 16 of the PPC Regulations shall be made or sent to the Agency using the contact details notified in writing to the Operator by the Agency.
- 4.1.2 The Operator shall, unless otherwise agreed in writing, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:-
- 4.1.2.1 in respect of the parameters and emission points specified in Table S2 to Schedule 2;
  - 4.1.2.2 for the reporting periods specified in Table S2 to Schedule 2 and using the forms specified in Table S3 to Schedule 3;
  - 4.1.2.3 giving the information from such results and assessments as may be required by the forms specified in those Tables; and
  - 4.1.2.4 to the Agency within 28 days of the end of the reporting period.
- 4.1.3 The Operator shall submit to the Agency a report on the performance of the Permitted Installation over the previous year, by 31 January each year, providing the information listed in Tables S4.1 and S4.2 of Schedule 4, assessed at any frequency specified therein, and using the form specified in Table S3 to Schedule 3.
- 4.1.4 The Operator shall review fugitive emissions, having regard to the application of Best Available Techniques, on an annual basis, or such other period as shall be agreed in writing by the Agency, and a summary report on this review shall be sent to the Agency detailing such releases and the measures taken to reduce them within 3 months of the end of such period.
- 4.1.5 Where the Operator has a formal environmental management system applying to the Permitted Installation which encompasses annual improvement targets the Operator shall, not later than 31 January in each year, provide a summary report of the previous year's progress against such targets.
- 4.1.6 The Operator shall, within 6 months of receipt of written notice from the Agency, submit to the Agency a report assessing whether all appropriate preventive measures continue to be taken against pollution, in particular through the application of the best available techniques, at the installation. The report shall consider any relevant published technical guidance current at the time of the notice which is either supplied with or referred to in the notice, and shall assess the costs and benefits of applying techniques described in that guidance, or otherwise identified by the Operator, that may provide environmental improvement.
- 4.1.7 The Operator shall, within two months of the date of this permit, submit a detailed Site Protection and Monitoring Programme, in accordance with and using the appropriate template format given in the Land Protection Guidance. The Operator shall implement and maintain the Site Protection and Monitoring Programme (SPMP) submitted under this condition, and shall carry out regular reviews of it at a minimum frequency of every 2 years. The results of such reviews and any changes made to the SPMP shall be reported to the Agency within 1 month of the review or change.
- 4.1.8 No condition applies.

## 5 Notifications

- 5.1.1 The Operator shall notify the Agency **without delay** of:-
- 5.1.1.1 the detection of an emission of any substance which exceeds any limit or criterion in this Permit specified in relation to the substance;
  - 5.1.1.2 the detection of any fugitive emission which has caused, is causing or may cause significant pollution;
  - 5.1.1.3 the detection of any malfunction, breakdown or failure of plant or techniques which has caused, is causing or has the potential to cause significant pollution; and
  - 5.1.1.4 any accident which has caused, is causing or has the potential to cause significant pollution.
- 5.1.2 The Operator shall submit written confirmation to the Agency of any notification under condition 5.1.1, by sending:-
- 5.1.2.1 the information listed in Part A of Schedule 1 to this Permit within 24 hours of such notification; and
  - 5.1.2.2 the more detailed information listed in Part B of that Schedule as soon as practicable thereafter;
- and such information shall be in accordance with that Schedule.
- 5.1.3 The Operator shall give written notification as soon as practicable prior to any of the following:-
- 5.1.3.1 permanent cessation of the operation of part or all of the Permitted Installation;
  - 5.1.3.2 cessation of operation of part or all of the Permitted Installation for a period likely to exceed 1 year; and
  - 5.1.3.3 resumption of the operation of part or all of the Permitted Installation after a cessation notified under condition 5.1.3.2.
- 5.1.4 The Operator shall notify the Agency, as soon as reasonably practicable, of any information concerning the state of the Site which adds to that provided to the Agency as part of the Application or to that in the Site Protection and Monitoring Programme submitted under condition 4.1.7 of this Permit.
- 5.1.5 The Operator shall notify the following matters to the Agency in writing within 14 days of their occurrence:
- 5.1.5.1 where the Operator is a registered company:-
    - any change in the Operator's trading name, registered name or registered office address;
    - any change to particulars of the Operator's ultimate holding company (including details of an ultimate holding company where an Operator has become a subsidiary)
    - any steps taken with a view to the Operator going into administration, entering into a company voluntary arrangement or being wound up;
  - 5.1.5.2 where the Operator is a corporate body other than a registered company:
    - any change in the Operator's name or address;
    - any steps taken with a view to the dissolution of the Operator.
  - 5.1.5.3 In any other case: -
    - the death of any of the named Operators (where the Operator consists of more than one named individual);

- any change in the Operator's name(s) or address(es);
  - any steps taken with a view to the Operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case them being in a partnership, dissolving the partnership;
- 5.1.6 Where the Operator has entered into a Climate Change Agreement with the Government, the Operator shall notify the Agency within one month of:-
- 5.1.6.1 a decision by the Secretary of State not to re-certify that Agreement.
  - 5.1.6.2 a decision by either the Operator or the Secretary of State to terminate that agreement.
  - 5.1.6.3 any subsequent decision by the Secretary of State to re-certify such an Agreement.
- 5.1.7 Where the Operator has entered into a Direct Participant Agreement in the Emissions Trading Scheme which covers emissions relating to the energy consumption of the activities, the Operator shall notify the Agency within one month of:-
- 5.1.7.1 a decision by the Operator to withdraw from or the Secretary of State to terminate that agreement.
  - 5.1.7.2 a failure to comply with an annual target under that Agreement at the end of the trading compliance period.
- 5.1.8 The Operator shall notify the Agency in writing, of any known or planned introduction or material emission from the permitted installation to sewer, that may increase the concentration of any "dangerous substance", as defined in List I and List II of the Dangerous Substances Directive, 76/464/EEC, and its daughter directives.

## 6 Interpretation

6.1.1 In this Permit, the following expressions shall have the following meanings:-

*“Application”* means the application for this Permit, together with any response to a notice served under Schedule 4 to the PPC Regulations and any operational change agreed under the conditions of this Permit

*“background concentration”* means such concentration of that substance as is present in:

- water supplied to the site; or
- where more than 50% of the water used at the site is directly abstracted from ground or surface water on site, the abstracted water; or
- where the Permitted Installation uses no significant amount of supplied or abstracted water, the precipitation on to the site.

*“BAT”* means best available techniques means the most effective and advanced stage of development of activities and their methods of operation which indicates the practical suitability of particular techniques to prevent and where that is not practicable to reduce emissions and the impact on the environment as a whole. For these purposes: “available techniques” means “those techniques which have been developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the cost and advantages, whether or not the techniques are used or produced inside the United Kingdom, as long as they are reasonably accessible to the operator”; “best” means “in relation to techniques, the most effective in achieving a high general level of protection of the environment as a whole” and “techniques” “includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned”. In addition, Schedule 2 of the PPC Regulations has effect in relation to the determination of BAT.

*“Compliance Based on Mass Balance Calculation”* means that for the purposes of demonstrating compliance or non-compliance with a specified limit the release shall be calculated. Annual mass releases for Mercury and Cadmium shall be calculated from the maximum potential concentration of the metal present as contamination multiplied by the volume of the chemicals used on site during the Year. An allowance may be deducted for any proportion of the chemicals used that can be demonstrated not to have reached the emission point. The concentration of Mercury and Cadmium shall be calculated from the annual mass release and the volume of effluent discharged during the Year.

*“Fugitive emission”* means an emission to air or water (including sewer) from the Permitted Installation which is not controlled by an emission or background concentration limit under conditions 2.2.1.3, 2.2.2.4, 2.2.2.5, 2.2.2.8 or 2.2.2.9 of this Permit.

*“Groundwater”* means all water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

*“Land Protection Guidance”* means the version of the Agency guidance note "H7 - Guidance on the Protection of Land under the PPC Regime: Application Site Report and Site Protection and Monitoring Programme", including its appended templates for data reporting, which is current at the time of issue of the Permit.

*“ $L_{Aeq,T}$ ”* means the equivalent continuous A-weighted sound pressure level in dB determined over time period, T.

*“ $L_{A90,T}$ ”* means the A-weighted sound pressure level in dB exceeded for 90% of the time period, T.

“*L<sub>AFmax</sub>*” means the maximum A weighted sound level measurement in dB measured with a fast time weighting.

“*MCERTS*” means the Environment Agency’s Monitoring Certification Scheme.

“*Monitoring*” includes the taking and analysis of samples, instrumental measurements (periodic and continual), calibrations, examinations, tests and surveys.

“*Permitted Installation*” means the activities and the limits to those activities described in Table 1.1.1 of this Permit.

“*PPC Regulations*” means the Pollution, Prevention and Control (England and Wales) Regulations SI 2000 No.1973 (as amended) and words and expressions defined in the PPC Regulations shall have the same meanings when used in this Permit save to the extent they are specifically defined in this Permit.

“*Sewer*” means sewer within the meaning of section 219(1) of the Water Industry Act 1991.

“*Staff*” includes employees, directors or other officers of the Operator, and any other person under the Operator’s direct or indirect control, including contractors.

“*Year*” means calendar year ending 31 December.

- 6.1.2 Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.
- 6.1.3 Unless otherwise stated, any references in this Permit to concentrations of substances in emissions into air means:-
- 6.1.3.1 in relation to gases from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
  - 6.1.3.2 in relation to gases from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content
- 6.1.4 Where any condition of this Permit refers to the whole or parts of different documents, in the event of any conflict between the wording of such documents, the wording of the document(s) with the most recent date shall prevail to the extent of such conflict.

## Schedule 1 - Notification of abnormal emissions

This page outlines the information that the Operator must provide to satisfy conditions 5.1.1 and 5.1.2 of this Permit.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the PPC Regulations.

### Part A

Permit Number	
Name of Operator	
Location of Installation	
Location of the emission	
Time and date of the emission	

Substance(s) emitted	Media	Best estimate of the quantity or the rate of emission	Time during which the emission took place

Measures taken, or intended to be taken, to stop the emission	
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### Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment or harm which has been or may be caused by the emission	
The dates of any unauthorised emissions from the installation in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

\* authorised to sign on behalf of IR Newport Limited

## Schedule 2 - Reporting of monitoring data

Parameters for which reports shall be made, in accordance with conditions 4.1.2 and 4.1.3 of this Permit, are listed below.

<b>Table S2: Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission point</b>	<b>Reporting period</b>	<b>Period begins</b>
Class B Volatile Organic Compounds (Total as Carbon)).	A1-A10	Every 6 months.	01/01/06
Ammonia	A12-A14	Every 6 months	01/01/06
Hydrogen fluoride	A12-A14	Every 6 months	01/01/06
Hydrogen chloride	A12-A14	Every 6 months	01/01/06
Oxides of sulphur (as SO <sub>2</sub> )	A12-A14	Every 6 months	01/01/06
Oxides of nitrogen (as NO <sub>2</sub> )	A12-A14	Every 6 months	01/01/06
Suspended solids	S1	Every 6 months	01/01/06
Chemical Oxygen Demand	S1	Every 6 months	01/01/06
Flow.	S1	Every 6 months	01/01/06
Copper	S1	Every 6 months	01/01/06
Nickel	S1	Every 6 months	01/01/06
Zinc	S1	Every 6 months	01/01/06
Chromium	S1	Every 6 months	01/01/06
Sulphate	S1	Every 6 months	01/01/06
pH	S1	Every 6 months	01/01/06
Production of semiconductor wafers (m <sup>2</sup> )	Installation	Annual	01/01/06
Water usage	Installation	Annual	01/01/06
Energy usage	Installation	Annual	01/01/06
Waste disposal and/or recovery.	Installation	Annual	01/01/06

## Schedule 3 - Forms to be used

<b>Table S3: Reporting Forms</b>		
<b>Media / parameter</b>	<b>Form Number</b>	<b>Date of Form</b>
Air	A1	01/11/05
Sewer	S1	01/11/05
Energy	E1	01/11/05
Waste Return	R1	01/11/05
Water usage	WU1	01/11/05

## Schedule 4 - Reporting of performance data

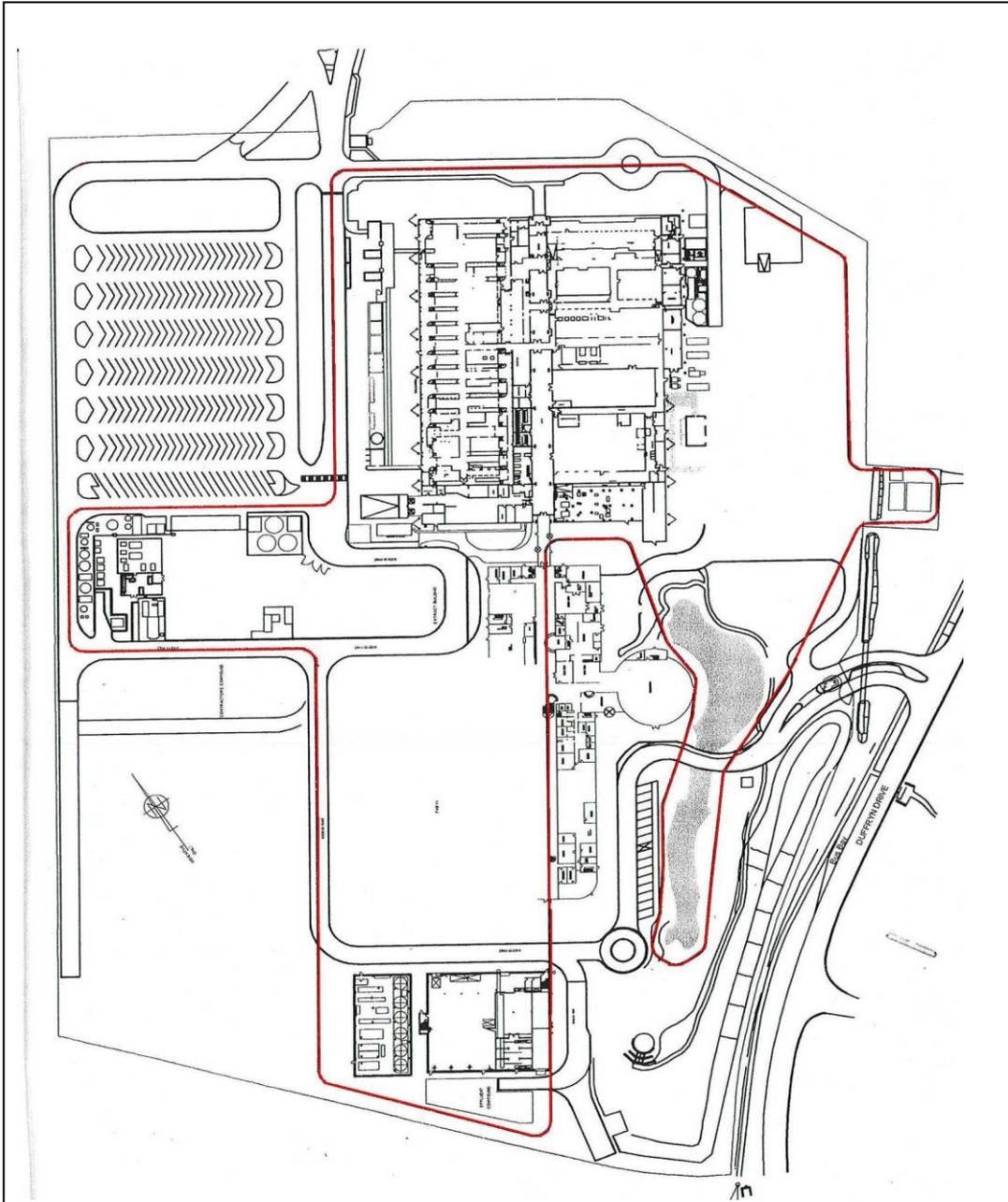
Data required to be recorded and reported by Condition 4.1.3. The data should be assessed at the frequency given and reported annually to the Agency.

**Table S4.1: Annual Production/Treatment**

Production of semiconductor	(m <sup>2</sup> )
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## Schedule 5 - Site Plan



END OF PERMIT