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ENVIRONMENT AGENCY

Permit with introductory note

Pollution Prevention and Control Regulations 2000

South Hook Liquefied Natural Gas Terminal
South Hook LNG Terminal Company Ltd
Dale Road
Hubberston
Milford Haven
Pembrokeshire
SA73 1DR

Permit number

XP3538LD

Contents

Introductory note

This introductory note does not form a part of the Permit

The following Permit is transferred under Regulation 18 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 1.1 A(1)(a) in Part 1 to Schedule 1 of the PPC Regulations, to the extent authorised by the Permit:

> Section 1.1 A(1)(a) - "Burning any fuel in an appliance with a rated thermal input of 50 Megawatts or more"

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 (H1 to H4) and other relevant guidance.

Esso Petroleum Company Limited submitted the original PC application for the South Hook Terminal. South Hook LNG Terminal Company Limited (SHLNG) has been registered as a UK company to develop the South Hook LNG facilities in Wales. SHLNG is a joint venture between ExxonMobil Corporation and Qatar Petroleum Limited. The original PPC permit has now been transferred from Esso to SHLNG and without change.

A non-technical description of the installation is given in the Application, but the main features of the installation are as follows. Subject to obtaining all the required approvals, the proposed South Hook LNG Terminal will be built in 2 phases; the first phase includes remediating the old Esso site before construction, refurbishing the existing Jetty and constructing three liquefied natural gas (LNG) storage tanks and associated heating equipment. New administration buildings and some ancillary workshops and equipment will also be built in the first phase. There will also be a link to a new natural gas pipeline that will link into the national Natural Gas transmission system. If approved this phase will be operational by late 2007 and subject to approval and demand the proposed second phase is the construction of a further 2 storage tanks and associated heat equipment.

The LNG will be supplied from Qatar in a fleet of dedicated ships owned by the joint venture. The ships will use the Haven which is a candidate Special Area of Conservation (cSAC), which means that the development will need to take into account the Habitats Directive and Regulations. Survey work around the jetty has found a larger than expected bed of Eelgrass and a previously undiscovered bed of Red Maerl. Both of these species are ecologically significant. The western side of the site, including the Grade II listed South Hook fort, will be set aside as a managed conservation area due to the high ecological value. This area and some other unused parts of the site may be available for environmental enhancement.

Due to the topography of the site and the developer's keenness to minimise the visual impact of the development, the LNG tanks have been set back into the natural valley of the site. The developers have also reduced the height and increased the width of the tanks to reduce the impact on the skyline of this development. When the tanks are constructed any contamination that is found beneath the site will need to be removed and mitigated.

The LNG will be off loaded from dedicated ships into transfer lines into one or more storage tanks. LNG is reheated for transmission by the national gas transmission system. Reheat from –163 °C is achieved by burning a proportion of gas in a 'submerged combustion' system (SCV). In this technique, gas is burnt and the combustion gases are passed through a volume of water. In the warm water is a heat exchanger filled with LNG entering at one end and vapourised natural gas at the other. Excess water from the SCV is collected and neutralised before being discharged to the Haven. The off gas from each SCV passes out to air through a 24 metre stack. A total of 19 SCVs are proposed over two phases. There will be releases of oxides of nitrogen from the SCVs used to produce vapourised natural gas. A small amount of nitrogen gas is added to the natural gas to meet the specifications for natural gas. The nitrogen gas is added before the natural gas enters the national gas transmission system.

Excess water produced by the SCVs will be neutralised and discharged directly to the Haven water way from the jetty. Surface water will pass through an interceptor and it will join the stream that drains through the site and that discharges into the Haven where the jetty comes ashore. Currently flares are proposed to reduce releases of methane from abnormal events, maintenance work and/or start-up activities.

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**
No other PPC permits relate to this installation	-	-

Superseded Licences/Authorisations/Consents relating to this installation		
Holder	**Reference Number**	**Date of Issue**
No licences/Authorisations/Consents are superseded by this permit	-	-

No 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.

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	Comment
Application BW9816IE	Received 17/11/2003	Dated 7/11/2003
Request to extend determination from 17/03/2004 to 17/05/2004	Request dated 11/03/2004	Request accepted 12/03/2004
Response to request for information including a request to extend the determination date from 17/06/2004 to 17/07/2004	Schedule 4 notice dated 11/05/2004	Request accepted 24/05/2004 Response dated10/06/2004; received 16/06/2004
Permit determined	Issue date 16/07/2004	-
Request to transfer the PPC permit from Esso to SHLNG	Date received Issued	27/7/2006 1/9/2006

End of Introductory Note.

ENVIRONMENT AGENCY

Permit

Permit number
XP3538LD

The Environment Agency (the Agency) in exercise of its powers under Regulation 18 of the Pollution Prevention and Control (England and Wales) Regulations (SI 2000 No 1973), hereby authorises
South Hook LNG Terminal Company Limited ("the Operator"),

Of/ whose Registered Office (or principal place of business) is
10 Upper Bank Street
LONDON
W4 7AJ

Company registration number **04982132**

to operate an Installation at
South Hook Liquefied Natural Gas Terminal
Dale Road
Hubberston
Milford Haven
Pembrokeshire
SA73 1DR

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

Signed	Date of transfer
G Davies	6th September 2006

Ged Davies

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.

Table 1.1.1

Activity listed in Schedule 1 of the PPC Regulations / Associated Activity	Description of specified activity	Limits of specified activity
Section 1.1 A1 (a) : combustion of any fuel with a capacity of 50 MW or more	*Reheating LNG to produce natural gas*	*Reheating of LNG and transfer of natural gas into the National G Transmission system*
Directly associated activity – receipt and storage of LNG	*Receipt and storage of LNG*	*The receipt, storage and flaring of LNG*

1.1.2 Where waste on site is subjected to activities that are exempt from control under the Waste Management Licensing Regulations 1994 then the wastes controlled under condition 1.1.1, above, shall be clearly identified and kept separate from such exempt waste activities and a record shall be kept of where such exempt activities are conducted.

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 red in Figure 1 of Volume 1 of the Application and an indicative boundary is shown in dotted line 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 condition 1.4.1.1 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
1.4.1 A	The Operator shall submit to the Agency at the Reporting Address, a program for the construction, commissioning and operation of Phase 2 of the LNG terminal.	At least 2 years before anticipated operation of Phase 2

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 shall be deemed to be amended.

1.6 Pre-Operational Conditions

1.6.1 The Permitted Installation shall not be brought into operation until the following measures have been completed and the Agency has been notified in writing of this:

1.6.1.1 At least 4 weeks before receiving LNG at the Installation, the Operator shall submit details of management systems and procedures to ensure that the environmental impact of the Installation is minimised.

1.6.1.2 At least 4 weeks before receiving LNG at the Installation, the Operator shall submit details of maintenance systems and procedures to ensure that the environmental impact of the Installation is minimised.

1.6.1.3 At least 4 weeks before receiving LNG at the Installation, the Operator shall submit details of complaint handling and recording systems and procedures to ensure that the complaints are investigated, recorded and reviewed by the site management.

1.6.1.4 The Operator shall provide appropriately labelled sample points for discharge of surface water at release point W1 and for the neutralised SCV effluent at release point W2 or some other points as agreed in writing with the Agency. Confirmation of the installation of such sample points should be sent in writing to the Agency at the Reporting Address at least 2 weeks prior to commencement of operations at the site.

1.6.1.5 The Operator shall provide a continuous flow monitoring and recording system for release point W2, as agreed with the Agency, with on-site visual display from which readings can be readily obtained by the Agency. Confirmation of the installation of such a system shall be sent to the Agency at least 2 weeks prior to commencement of operations at the site.

1.6.1.6 At least 4 weeks before receiving LNG at the Installation, the Operator shall submit details of an accident management plan and procedures to ensure that the environmental impact of an accident at the Installation is minimised.

1.6.1.7 The Operator shall provide detailed infrastructure information for all potential waste storage areas on site, in line with Construction Industry Research and Information Association report 164 – "Design of containment systems for the prevention of water pollution from industrial incidents" to the Agency at the Reporting Address at least 4 weeks prior to the commencement of construction.

1.6.1.8 Cooling down the LNG storage tanks will lead to flaring of natural gas for a number of days. At least 1 month before receiving LNG at this facility, an installation start- up public communications strategy shall be submitted to the Agency.

1.6.2 The Permitted Installation shall not be brought into operation until the measures detailed in Table 1.6.1 have been completed and the Agency has been notified in writing of this:

Table 1.6.1: Pre-operation programme (Detailed design)		
Reference	**Requirement**	**Date**
1.6.1 A	The Operator shall submit a report to the Agency, at the Reporting Address, detailing the choices available on the design of the SCVs (size (MWth input), performance, emission rates, number & efficiency). The selected design shall be justified for the installation as a whole.	3 Months following completion of the detailed design
1.6.1 B	The Operator shall confirm to the Agency, at the Reporting Address, the Noise monitoring locations and frequencies referred to in outline in the PPC application. Any choice of noise monitoring location shall be justified.	3 Months following completion of the detailed design
1.6.1 C	The Operator shall confirm to the Agency, at the Reporting Address, the Ambient NOx monitoring locations and ambient NOx monitoring methods and frequencies referred to in outline in the PPC application. Each choice of NOx monitoring location shall be justified.	3 Months following completion of the detailed design
1.6.1 D	The Operator shall prepare a report on the final site condition after remediation. A copy of the report shall be sent to the Agency at the Reporting Address.	3 Months following completion of the detailed design
1.6.1 E	The Operator shall review the discharge W1 for List 2 Dangerous Substances metals (EC Directive 76/464/EEC) and prepare a monitoring strategy for these substances. A copy of the strategy shall be sent to the Agency at the Reporting Address.	3 Months following completion of the detailed design
1.6.1 F	The Operator shall submit detailed proposal to the Agency, at the Reporting Address, on the Waste storage arrangements at this site.	3 Months following completion of the detailed design
1.6.1 G	The Operator shall submit detailed proposal to the Agency, at the Reporting Address, on the oil storage bunding arrangements at this site.	3 Months following completion of the detailed design

1.6.2.1 The Operator shall notify the Agency at the Reporting Address and in writing of the completion of detailed design.

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 responses to questions B2.1, B2.2, B2.3, B2.4, B2.5, B2.6, B2.7.1, B2.7.2, B2.7.3, B2.8, B2.9, B2.10, B2.11 and B3.1 given in Sections 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7.0, 2.7.1, 2.7.2, 2.7.3, 2.8, 2.9, 2.10, 2.11 and Part 3 of the application	17 November 2003
Response to Schedule 4 notice	The responses to questions 4, 6, 7 ands 10	16 June 2004

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 (drawing number figure 2.3.5)	Source	Location of emission point (from Figure 2.3.5 of the Application)	Height of emission point (metres)
A1 – A10	*SCV Exhaust stacks*	*Points A1 – A10*	24
A11 – A19 *(Phase 2)*	*SCV Exhaust stacks*	*Points A11 – A19*	24
A20	*There is no A20 SCV exhaust stack*		
A21 – A23	*Nitrogen Plant vent*	*Points A21 – A23*	5 – 7
A24 – A26 *(Phase 2)*	*Nitrogen Plant vent*	*Points A24 – A26*	5 – 7
A27	*High pressure flare*	*Point A27*	80
A28	*Low pressure flare*	*Point A28*	60
A29 – A32	*Tank 1 LNG Relief vents*	*Points A29 – A32*	45
A33 – A36	*Tank 2 LNG Relief vents*	*Points A33 – A36*	45
A37 – A40	*Tank 3 LNG Relief vents*	*Points A37 – A40*	45
A41 – A44 *(Phase 2)*	*Tank 4 LNG Relief vents*	*Points A41 – A44*	45
A45 – A48 *(Phase 2)*	*Tank 5 LNG Relief vents*	*Points A45 – A48*	45
A49 A, B & C	*High pressure flare pilots*	*Points A49*	80
A50 A, B & C	*Low pressure flare pilots*	*Point A50*	60
A51 – A56	*Gas conditioning plant adsorption Unit*	*Points A51 – A56*	3.6
A57 – A62 *(Phase 2)*	*Gas conditioning plant adsorption Unit*	*Points A57 – A62*	3.6
A63 – A64	*Instrument air Dryer vents*	*Points A63 & A64*	3.6
A65 – A66 *(Phase 2)*	*Instrument air Dryer vents*	*Points A66 & A66*	3.6
A67	*Heavy fuel oil storage tank vent*	*Point A67*	20
A68	*Diesel Storage tank vent*	*Point A68*	6
A69	*Low Sulphur fuel oil storage tank vent*	*Point A69*	25

2.2.1.3 The limits for emissions to air for the parameter(s) and emission point(s) 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)[1]	Monitoring frequency	Monitoring method
A1- A10	*Oxides of Nitrogen*	*107 mg/Nm³ daily mean*	*Continuous*	*Continuous to ISO 10849 on one SCV only*
		107 mg/Nm³ over 1 hour sampling	*Quarterly*	*Discontinuous (to ISO 10849)*
	Carbon monoxide	-	*Quarterly*	*Discontinuous (to ISO 12039)*
A11- A19 *(Phase 2)*	*Oxides of Nitrogen*	*107 mg/Nm³ daily mean*	*Continuous*	*Continuous to ISO 10849 on one SCV only*
		107 mg/Nm³ over 1 hour sampling	*Quarterly*	*Discontinuous (to ISO 10849)*
	Carbon monoxide	-	*Quarterly*	*Discontinuous (to ISO 12039)*

Note 1: See Section 6 for reference conditions

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 point(s) specified in Table 2.2.4 shall only arise from the source(s) specified in that Table

Table 2.2.4: Emission point to water

Emission Point Reference or description	Source	Receiving Water
W1 on Drawing Number Figure 2.3.5 (SM87390536)	*Drainage from site, ground water and stream running through the site*	*Milford Haven waterway*
W2 on Drawing Number 203/49/87/PR/DR/UF/001 (SM87240445)	*Neutralised SCV effluent via catch pit1*	*Milford Haven waterway*

2.2.2.4 The limits for the emissions to water for the parameter(s) and emission point(s) set out in Table 2.2.5 shall not be exceeded.

2.2.2.5 Where a substance is specified in Table 2.2.5 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration

Table 2.2.5 : Emission limits to water and monitoring				
Emission point reference	**Parameter**	**Limit (including Reference Period)**	**Monitoring frequency**	**Monitoring method**
W1	*Flow m³/day* *Flow m³/hour*	*Note 1*	*Daily*	*Estimated*
	pH	*6 - 9*	*Daily*	-
	Turbidity	-	*Daily*	-
	Oil and grease	*None visible*	*Daily*	-
	TOC	-	*Continuous*	-
	BOD	-	*Monthly*	-
	List 2 Metals	-	*Monthly*	-
W2	*Flow m³/day* *Flow m³/hour*	*1000* *45*	*Continuous and daily integrated flow*	-
	pH	*6 - 9*	*Continuous*	-
	Turbidity	-	*Monthly*	-
	BOD	-	*Monthly*	-
	Nitrates mg/l (as NO_3)	*75*	*Daily*	-
	Oil and grease	*None visible*	*Daily*	-
	Total residual oxidant (as total residual Chlorine)	*0.1 mg/l*	*Monthly*	-
	Temperature ° C Hourly	*30*	*Continuous*	-

Note 1 No flow limit has been applied to this release point because it receives off site and on site surface water that can not be regulated in terms of flow.

2.2.2.6 No condition applies.

Emissions to sewer

2.2.2.7 No emission shall be made into any sewer from the Permitted Installation.

2.2.2.8 No condition applies.

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, where relevant.

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.

2.2.4.2 No condition applies.

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.

2.2.7 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 The Operator shall notify the Agency, as soon as reasonably practicable, of any information concerning the state of the Site which affects or updates that provided to the Agency as part of the Site Report submitted with the application for this Permit.

2.2.7.4 No condition applies.

2.2.8 Equivalent Parameters or Technical Measures

2.2.8.1 The Operator shall comply with the requirements specified in Table 2.2.11, which supplement or replace emission limit values in accordance with Regulation 12(8) of the PPC Regulations.

Table 2.2.11 Equivalent parameters and technical measures

Parameter or measure	Requirement or description of measure, and frequency if relevant
None specified	-

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 if such event occur;

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.

2.4 Efficient use of raw materials

2.4.1 The Operator shall -

2.4.1.1 maintain the raw materials table or description submitted in response to 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 the issue of this Permit. 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 site 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.

2.6 Waste recovery or disposal

2.6.1 Waste produced at the Permitted Installation shall be recycled or recovered unless technically and/or economically impossible.

2.6.2 The Operator shall maintain the waste recovery or disposal table or description submitted in response to Section 2.6 of the Application and in particular identify the best practicable environmental options for waste disposal.

2.6.3 The Operator shall maintain and implement a system which ensures that a record is made of the quantity, composition, origin, destination (including whether this is a recovery or disposal operation) and where relevant removal date of any waste that is produced at the Permitted Installation.

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 listed in Table S4.1 at Schedule 4.

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 H2 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 response to 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 Emergency generators/ alarms/ sirens/ relief valves shall only be tested between the hours of 10.00 and 17.00 Monday to Friday and not on any Public Holiday.

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 2.2.5, 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 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	Other specifications
See pre-operational condition 1.6.1C in Table 1.6.1	Oxides of nitrogen	*Monthly*	To be confirmed after response to pre-operational condition 1.6.1C in Table 1.6.1	*One year before operation and 1 year post commissioning (Phase 1)*
				One year before operation and 1 year post commissioning (Phase 2)

2.10.3 The Operator shall carry out monitoring of the process variables listed in Table 2.10.4 of the Application to the frequencies and methods described in that Table

2.10.4 The Operator shall carry out noise monitoring to the frequencies and methods described below :

Every month, unless agreed otherwise with the Agency, attended short-term noise level monitoring shall be carried out at locations, [to be agreed following a response to a pre-operational noise monitoring condition (1.6.1 B)]. The parameters to be measured shall be the $L_{Aeq,T}$, $L_{A10,T}$, $L_{A90,T}$ and $L_{Amax(fast)}$ and the measurements and assessment made according to BS 4142:1997. The precise details of the monitoring shall be agreed with the Agency following submission of the pre-operational condition 1.6.1B in Table 1.6.1

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.

2.11 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 transfer from the Permitted Installation shall be made to effluent treatment plant.

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; and

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.

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 under condition 2.10, 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 S4.2 and S4.3 of Schedule 4, assessed at any frequency specified therein.

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.

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 unless the quantity emitted is so trivial that it would be incapable of causing 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 practicable, of any information concerning the state of the site which affects or updates that provided to the Agency as part of the Site Report submitted with the application for 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.

5.1.6 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.

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.

Detail	Date	Comment
Application BW9816IE	*Received 17/11/2003*	*Dated 7/11/2003*
Response to request for information	*Schedule 4 notice dated 11/05/2004*	*Response dated10/06/2004*

"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.

"BOD" means 5 day Biochemical Oxygen Demand determined at 20 degrees Celsius after suppression of nitrification using allyl thiourea, and is expressed in milligrams of oxygen per litre of sample.

"Commencement of construction" means the point at which the first foundations of the Installation are laid.

"Commencement of Operations" means the day that LNG is received at the terminal.

"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.

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

"$L_{A10,T}$" means the A-weighted sound pressure level in dB exceeded for 10% of the time period, T.

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

"$L_{Amax(fast)}$" means the maximum A weighted sound level measurement in dB measured with a fast time weighting.

"List 2 metals" means those metals listed under List 2 in the Dangerous Substances Directive (EC Directive 76/464/EEC)

"LNG" means liquefied natural gas.

"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.

"TOC" means total organic carbon.

"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
	eg air		
	eg groundwater		

Measures taken, or intended to be taken, to stop the emission	

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 South Hook LNG Terminal Co Ltd

Schedule 2 - Reporting of monitoring data

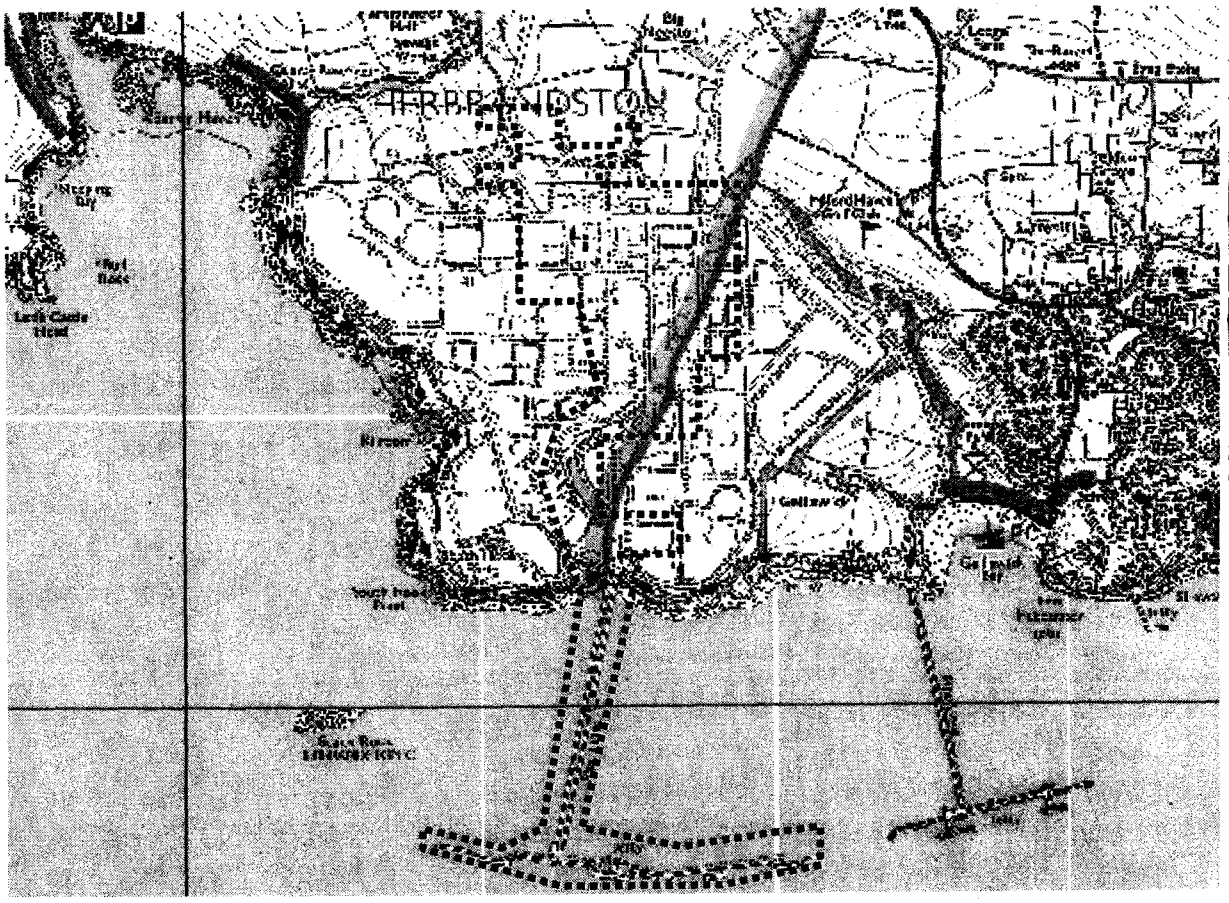
Parameters for which reports shall be made, in accordance with conditions 4.1.2 and 4.1.3 of this Permit, are listed below.

Table S2: Reporting of monitoring data

Parameter	Emission point	Reporting period	Period begins	Form Number
Oxides of Nitrogen mg/Nm³	A1 – A19	Every 3 mths	01/10/2007	SCV DCM NOx
Oxides of Nitrogen mg/Nm³	A5 & A6	Every 3 mths	01/10/2007	SCV Cems NOx
Carbon monoxide mg/Nm³	A1- A19	Every 3 mths	01/10/2007	SCV DCM CO
Volatile organic compounds flaring & venting records	A27 & A28	Every 3 mths	01/10/2007	Flares
pH	W1	Every month	01/10/2007	W1 Monthly
Turbidity	W1	Every month	01/10/2007	W1 Monthly
Oil and grease	W1	Every month	01/10/2007	W1 Monthly
TOC	W1	Every month	01/10/2007	W1 Monthly
Biochemical oxygen demand mg/l	W1	Every 3 mths	01/10/2007	W1 Quarterly
List 2 metals mg/l	W1	Every 3 mths	01/10/2007	W1 Quarterly
Flow m³/day& m³/hour	W2	Every month	01/10/2007	W2 Monthly
pH	W2	Every month	01/10/2007	W2 Monthly
Nitrates mg/l	W2	Every month	01/10/2007	W2 Monthly
Temperature °C	W2	Every month	01/10/2007	W2 Monthly
Turbidity	W2	Every month	01/10/2007	W2 Monthly
Oil and grease	W2	Every month	01/10/2007	W1 Monthly
Biochemical oxygen demand mg/l	W2	Every 3 mths	01/10/2007	W2 Quarterly
Total residual oxidant (as total residual Chlorine) mg/l	W2	Every 3 mths	01/10/2007	W2 Quarterly

Schedule 5 - Site Plan

Details of the site plan showing the detailed installation boundary can be found in Figure 1 in Volume 1 of the PPC application. The plan below shows the indicative boundary of the installation inside the dotted line.



END OF PERMIT