

Surrender notice with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Spirit Energy Production UK Limited

Barrow Gas Terminals
Rampside Road
Barrow in Furness
Cumbria
England
LA13 0QU

Surrender application number

EPR/BX1675IT/S010

Permit number

EPR/BX1675IT

Barrow Gas Terminals

Permit number EPR/BX1675IT

Introductory note

This introductory note does not form a part of the notice.

The following notice gives notice of the surrender in part and variation of an environmental permit.

The permit has been varied to accept the partial surrender application for the removal of the condensate storage facility (CSF) from the installation including the associated land, transfer pipeline, and surface water discharge to Ramsden Dock.

These facilities were added to the permit by variation EPR/BX1675IT/V007 as activity reference AR3 for scheduled activity 1.2 Part A(1)(e)(i) and included the loading, unloading, handling or storage of, or the physical, chemical or thermal treatment of crude oil. AR3 also includes the processing, handling and storage of condensate across the gas terminals. Condensate processing, handling and storage undertaken on the North Morecombe Bay and Rivers Terminals will remain in the varied and consolidated permit under activity AR3. The remaining capacities for storage of un-stabilised and stabilised condensate on the installation are 754 tonnes and 2,639 tonnes respectively. Gas flaring associated with the CSF (previously AR10) has also been removed from the permit. The installation continues to be an upper tier COMAH site.

The permit has also been varied to correct references to tables S3.1, S3.2, and S3.3 in condition 3.1.4. Other minor changes have been undertaken and have been outlined in schedule 1. The varied and consolidated permit has been issued in modern format.

Any changes made as a result of the part surrender are set out in the schedules.

We consider that in reaching our decision to vary the permit we have taken into account all relevant considerations and legal requirements. We are satisfied that the permit will ensure that a high level of protection is provided for the environment and human health and that the activities will not give rise to any significant pollution of the environment or harm to human health.

The main features of the permit are as follows.

The Barrow Gas Terminals receive gas and condensate from the South Morecambe, North Morecambe, Rhyl and Calder gas reservoirs. The Terminals process the gas prior to distribution to the National Transmission System. The Barrow Gas Terminals operate 24 hours a day, 365 days a year.

The South Morecambe Terminal (SMT) was previously part of the Barrow Gas Terminals installation and was removed from the permit by partial surrender EPR/BX1675IT/S009. SMT has been decommissioned however some facilities still

remain including the administration building, firewater pumphouse and lagoon. The firewater lagoon and surface water discharge points remain in operation. Activities associated with these facilities are no longer covered by the permit. The consolidated permit issued on acceptance of EPR/BX1675IT/S009 included some admin changes to reflect that LCP 177 has stopped operating now under the limited life derogation. Abatement plant has been fitted to the former LCP 177 as per application EPR/BX1675IT/V006 which required a new LCP number LCP 674 and removed the limited life derogation.

The North Morecambe Terminal (NMT) imports gas from South Morecambe, North Morecambe, and Rhyl Gas reservoirs. It also receives gas, methanol, and condensate from the Rivers Terminal.

At the NMT gas is processed by first removing the condensate, methanol, water and corrosion inhibitor in the slug catcher. After compressing the gas, the carbon dioxide within the gas is removed by being absorbed in a solution of activated diethanolamine. The gas then flows to the Dew Point Control plant where any remaining liquid hydrocarbons and water are removed. A side stream of the gas flows to the Nitrogen Removal Plant where the gas is cooled to very low temperatures and the more volatile nitrogen is removed to ensure that the sales specification is achieved. Finally, the gas is metered and passed into the National Transmission System.

The condensate that is collected from the process is stripped of any remaining light hydrocarbons. It is then stored on site before removal by road tanker.

The methanol and corrosion inhibitor from the sealine collected in the slug catcher is filtered to remove solids and then flashed to atmospheric pressure to remove any hydrocarbon gases. The methanol is recovered by distillation.

The Rivers Terminal (RT) receives gas from the Calder gas reservoir. The gas produced from these fields differs from the gas produced from the other Morecambe Bay Gas Fields in that it contains a significant amount of hydrogen sulphide and mercaptan containing gas. At the RT, condensate, methanol and water is removed from the gas in the slug catcher. The gas is compressed and the hydrogen sulphide and mercaptan are removed in a solvent washing process before the gas is passed to North Terminal for further processing as described above. In the Acid Plant the hydrogen sulphide and mercaptan containing gas is burnt to produce sulphur dioxide gas. This is converted into liquid sulphuric acid which is exported from the terminal by road tanker.

The main emissions to air from the installation are the combustion products of the natural gas, namely nitrogen oxides, carbon monoxide, carbon dioxide, sulphur dioxide and any remaining unburnt hydrocarbons. There are also fugitive releases of volatile organic compounds.

Process effluent from the Terminals is discharged to Barrow waste water treatment works.

Clean and uncontaminated surface water from the site is discharged to Roosecote Sands.

The operator employs an integrated management system certified to ISO 14001. The management system combines both safety and environmental management techniques and is a documented system that is independently audited.

The site is also regulated under the Control of Major Accidents and Hazards Regulations. A Safety Report has been prepared and a Major Accident Prevention Policy has been implemented on site.

There is one combustion plant which falls under the Large Combustion Plant Directive, the NMT Field Gas Compressor LCP 674 - 78 MWth. Other combustion plant on site include four Product Gas Compressors, two Hot Oil Heaters, Dew Point Heater, Incinerator, two Rivers Field Gas Compressors, Rivers Acid Plant, Rivers Auxiliary Boiler, NMT and Rivers Flares.

The site is adjacent to the Morecambe Bay Ramsar and Special Area of Conservation (SAC), the Morecombe Bay and Duddon Estuary Special Protection Area (SPA) and the South Walney and Piel Channel Flats (Site of Special Scientific Interest) SSSI. The site is 3.7 km from Duddon Estuary Ramsar and within 2 km of three Local Wildlife Sites: Salthouse Pool, Stone Dyke and Stank and Roosecote Moss.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	Date	Comments
Application BL6128 received (under PPC 2000)	11/08/03	
Request for further information from Hydrocarbon Resources Ltd	20/11/03	Received 15/12/03
Permit BL6128 determined	18/12/03	
Application BX1675IT received (under PPC 2000)	Duly made 18/08/06	
Further information received from Hydrocarbon Resources Ltd	11/06/07	
Permit BX1675IT determined	26/06/07	
Consolidation information received for variation	28/07/08	

Status log of the permit		
Description	Date	Comments
BX1675IT/V002 (under EPR 2007)		
Permit BL6128 superseded	05/06/09	
Permit BX1675IT variation issued	05/06/09	
Application EPR/BX1675IT/V003 (variation and consolidation)	Duly made 09/09/11	Application to vary and update the permit to modern conditions.
Additional information	07/10/11	Clarification on: BAT for the replacement acid plant; type of catalyst used; other aspects of the application
	07/10/11	Clarification regarding CEMS
	18/10/11	Clarification of environmental impact
Variation determined EPR/BX1675IT/V003	08/12/11	Varied and consolidated permit issued in modern condition format.
Variation determined EPR/BX1675IT/V004	28/05/13	Agency variation to implement the changes introduced by IED.
Regulation 60 Notice sent to the Operator	31/10/14	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also updated to modern conditions.
Regulation 60 Notice response	31/03/15	Response received from the Operator.
Additional information received	23/09/15, 06/10/15 and 26/11/15	Response to request for further information (RFI) dated 05/08/15.
Variation determined EPR/BX1675IT/V005	22/12/15	Varied and consolidated permit issued. Variation effective from 01/01/2016.
Variation application EPR/BX1675IT/V006	Duly made 17/03/16	Application to fit abatement plant to LCP 177
Schedule 5 notice issued 07/06/16	Response 28/06/16	

Status log of the permit		
Description	Date	Comments
Variation determined EPR/BX1675IT/V006 (PAS Billing ref: VP3137AY)	26/07/16	
Variation application EPR/BX1675IT/V007	09/06/17	Application to add condensate storage facility to permit.
Further information received variation application EPR/BX1675IT/V007	21/08/17	Confirmation of how the condensate storage facility meets the BAT conclusions for the refining of mineral oil and gas industry sector published on 28th October 2014.
Variation determined EPR/BX1675IT/V007 (PAS Billing ref: WP3937RG)	06/04/18	Varied permit issued.
Regulation 60 Notice sent to the Operator	20/10/15	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED.
Regulation 60 Notice response	29/01/16	Response received from the Operator.
Additional information received in response to regulation 60 Notice	29/02/16	Response received from the Operator.
Additional information received in response to regulation 60 Notice	18/08/17	Response received from the Operator.
Variation determined EPR/BX1675IT/V008 (Billing ref: UP3836YK)	15/10/18	Varied and consolidated permit issued in modern condition format. Variation effective from 28/10/2018.
Part surrender application EPR/BX1675IT/S009	Duly made 29/12/2020	Application to surrender the South Morecombe Terminal and associated permitted area.
Part surrender determined EPR/BX1675IT (Billing ref: YP3933QP)	27/10/2021	Part surrender complete. Consolidated permit issued in a modern format
Part surrender application EPR/BX1675IT/S010	Duly made 09/12/2021	Application for removal of the condensate storage facility.

Status log of the permit		
Description	Date	Comments
Additional information received	09/09/2022	Confirmation of remaining condensate storage capacity, COMAH status and National Security direction.
Part surrender determined EPR/BX1675IT (Billing ref: TP3304SK)	03/11/2022	Part surrender complete. Consolidated permit issued in a modern format

End of introductory note

Notice of surrender

The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 and 25 of the Environmental Permitting (England and Wales) Regulations 2016 accepts the surrender in part and varies

Permit number

EPR/BX1675IT

Issued to

Spirit Energy Production UK Limited (“the operator”)

whose registered office is

1st Floor

20 Kingston Road

Staines-Upon-Thames

England

TW18 4LG

company registration number 03115179

to operate a regulated facility at

Barrow Gas Terminals

Rampside Road

Barrow in Furness

Cumbria

England

LA13 0QU

to the extent set out in the schedules.

This notice shall take effect from 03/11/2022

Name	Date
Vicky Patchett	03/11/2022

Authorised on behalf of the Environment Agency

Schedule 1 – changes to the permit

Note: The conditions numbers used in this schedule refer to those in the consolidated permit.

Only conditions 3.1.4, Table S1.1, Table S3.1, Table S3.2, Table S4.1 and Schedule 7 have been varied by the consolidated permit EPR/BX1675IT.

The following condition was varied as a result of an Environment Agency initiated variation:

- Condition 3.1.4 is varied to correct the reference to tables S3.1 and S3.2 to tables S3.2 and S3.3.

The following condition were varied as a result of the application made by the operator:

- Table S1.1 as referenced by conditions 2.1.1 and 4.2.2 is varied to:
 - o Amend the description of AR3 to confirm the total condensate storage on the installation exceeds 500 tonnes
 - o Remove references to the discharge to Ramsden Dock due to discharge from the Condensate Storage Facility (CSF) being removed from the permit
 - o Remove AR10 for flaring of gas from the CSF as the CSF has been removed from the permit
 - o Renumber AR11-AR14 to AR10-AR13 to reflect the removal of AR10
- Table S3.1 as referenced by conditions 3.1.1, 3.5.1, 3.5.4 and 3.6.7 is varied to remove the CSF emission points A1-A5.
- Table S3.2 as referenced by conditions 3.1.1, 3.1.4, 3.5.1 and 3.5.4 is varied to remove emission point W5 (the discharge to Ramsden Dock) and associated Note 2.
- Table S4.1 as referenced by condition 4.2.3 is varied to remove emission point W5.
- Schedule 7 as referenced by condition 2.2.1 is varied to reference the source document for the revised Site Plan.

Other changes have been made to the permit as administrative changes:

- Condition 3.6 is changed to reflect a change to the name of the condition in the current permit template.
- Condition 4.3.4 is changed to reflect the sub-paragraph numbering in the current permit template.
- Table S1.3 as referenced by condition 2.4.1 is changed to extend the date for completion of Improvement Condition 25 (IC25) as previously agreed in writing by us.

- Table S3.1 as referenced by conditions 3.1.1, 3.5.1, 3.5.4 and 3.6.7 is changed to update the title of the table (as required by the current permit template)
- Schedule 6 as referenced by condition 4.4.1 is changed to update the definition of the “Industrial Emissions Directive” (as required by the current permit template).

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/BX1675IT

This is the consolidated permit referred to in the surrender notice for application EPR/BX1675IT/S010 authorising,

Spirit Energy Production UK Limited (“the operator”),

whose registered office is

**1st Floor
20 Kingston Road
Staines-Upon-Thames
England
TW18 4LG**

company registration number 03115179

to operate an installation at

Barrow Gas Terminals

**Rampside Road
Barrow in Furness
Cumbria
England
LA13 0QU**

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

Name	Date
Vicky Patchett	03/11/2022

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 7 to this permit.

2.3 Operating techniques

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP 674. Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” revision 1 dated February 2015 or any later version unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.5 For the following activities referenced in schedule 1, table S1.1: LCP 674. The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.
- 2.3.6 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
 - (b) the composition of the waste;
 - (c) the handling requirements of the waste;
 - (d) the hazardous property associated with the waste, if applicable; and
 - (e) the waste code of the waste.
- 2.3.7 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.
- 2.3.8 (a) The Operator shall implement measures to ensure that periods when the acid gas removal systems are not available are minimised and that they operate with sufficient capacity to treat the acid gases produced.
- (b) These measures shall include procedures for minimising the impact of periods of other than normal operation of the acid gas removal systems.
- (c) The operator shall record periods when sufficient capacity is not available in the acid gas removal systems, to treat the sour gases produced. The Operator shall record the duration of the period of loss of capacity, the cause of the event and measures taken to reinstate the system’s availability.

2.4 Improvement programme

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Pre-operational conditions

- 2.5.1 The operations specified in schedule 1 table S1.4 shall not commence the measures specified in that table have been completed.

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2, S3.3 and S3.4.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.
- 3.1.4 Where a substance is specified in schedule 3 table S3.2 or S3.3 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.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
 - (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1, S3.2 and S3.3;
- (b) process monitoring specified in table S3.4;

3.5.2 The operator shall maintain records of all monitoring required by this permit including 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.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2, S3.3 and S3.4 unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring for Large Combustion Plant

3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive.

3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:

- (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and
- (b) implement the approved proposals.

- 3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.
- 3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.
- 3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.
- 3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table S3.1; the Continuous Emission Monitors shall be used such that:
- (a) for the continuous measurement systems fitted to the LCP release points defined in Table S3.1 the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;
 - (b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;
 - (c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;
 - (d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
 - (e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and
 - (f) any day, in which more than three hourly average values are invalid shall be invalidated.

4 Information

4.1 Records

- 4.1.1 All records required to be made by this permit shall:
- (a) be legible;
 - (b) be made as soon as reasonably practicable;
 - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
 - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the resource efficiency metrics set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

- 4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
 - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:
- (a) any change in the operator's name or address; and
 - (b) any steps taken with a view to the dissolution of the operator.
- 4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
- (a) the Environment Agency shall be notified at least 14 days before making the change; and
 - (b) the notification shall contain a description of the proposed change in operation.
- 4.3.6 The Environment Agency shall be given at least 14 days' notice before implementation of any part of the site closure plan.
- 4.3.7 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:
- (a) a decision by the Secretary of State not to re-certify the agreement;
 - (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
 - (c) any subsequent decision by the Secretary of State to re-certify such an agreement.
- 4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately" in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	Section 1.2 A(1) (a) Refining gas where this is likely to involve the use of 1000 tonnes or more of in any period of 12 months	The refining of natural gas at the Barrow Gas Terminals - North and Rivers including the process to remove the methanol, water, condensate, carbon dioxide, hydrogen sulphide and nitrogen.	From the first isolation valve on the gas receipt pipelines to the point where the gas is passed into the National Transmission System.
AR2	Section 1.1 A(1) (a) Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more	LCP 674 78MWth GT for mechanical drive. Burning of gas fuel in two hot oil boilers A and B each 48 MWth. Burning of gas fuel in a 6.9MW boiler	From receipt of natural gas through to discharge of combustion gases from the stack and export of mechanical energy. The operation of the package boiler on Rivers Terminal. Receipt of natural gas and flash gas fuel to discharge of combustion gases and use of heat.
AR3	1.2 Part A(1)(e)(i) the loading, unloading, handling or storage of, or the physical, chemical or thermal treatment of crude oil	Processing, handling and storage of condensate with total storage capacity exceeding 500 tonnes.	From production of condensate and processing, handling and storage of condensate through to export.
Directly Associated Activity			
AR4	Converting a by-product of refining natural gas into another product	The receipt of hydrogen sulphide gas stream and conversion to sulphuric acid.	From the incoming gas stream to the transfer of sulphuric acid to storage.
AR5	Waste storage and handling	Waste storage and handling	From the generation of waste on site to the removal of wastes from site.
AR6	Generation of nitrogen	The generation of nitrogen gas on site.	The generation of nitrogen on site to the use on site.
AR7	Methanol distillation, processing, handling and storage	Methanol distillation, processing, handling and storage	The processing, handling, distillation and storage of methanol on site.
AR8	Surface water collection and oil separation	Surface water collection, oil separation and discharge to Roosecote Sands	From the collection of surface water on site to the discharge to Roosecote Sands.
AR9	Gas flaring at terminals	Flaring and venting of gas from the terminals during shutdowns and emergency situations	The flaring and venting of natural gas from the specified emission points

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR10	Raw material storage and handling	Raw material storage and handling	From receipt of raw materials to the use on site.
AR11	Process effluent collection systems, cooling water systems and discharge to sewer	Process effluent collections systems and discharge to sewer	The discharge of process effluents and surface water on site to sewer.
AR12	Process effluent collections systems and discharge to sewer	Operation of water treatment plant and cooling towers	From the supply of water to discharge to the site effluent sewers
AR13	Storage of sulphuric acid	Storage of sulphuric acid	The storage of sulphuric acid and road tanker loading facility

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to section B2.1 to B2.12 in the application for permit BX1675IT for North and South Morecambe Gas Terminals	18/08/2006
Letter	Letter from applicant dated 11th June 2007 in relation to the application for permit BX1675IT for North and South Morecambe Gas Terminals	11/06/2007
Application	The response to section B2.1 to B2.12 in the application for permit BL6128 for the Rivers Gas Terminals	11/08/2003
Response to Schedule 4 Part 1 Notice	Response to questions 1 to 16 in relation to the application for permit BL6128 for the Rivers Gas Terminals	15/12/2003
Consolidation document	The PPC Consolidation document dated 28th July 2008	28/07/2008
Application for variation EPR/BX1675IT/V003	The operating techniques described in the application for the variation.	09/09/2011
Response to regulation 60(1) Notice – request for information dated 31/10/2014	Compliance route(s) and operating techniques identified in response to questions 1 (details of LCP's), 2 (compliance routes), 3 ((notification of LLD), 4 (configuration of LCP's), 5 (net rated thermal input) and 6 (start up).	31/03/2015
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 05/08/2015	Compliance route(s) and operating techniques identified in response to questions 5 (net rated thermal input), 6 (start up) and 11 (monitoring).	26/11/2015
Variation application EPR/BX1675IT/V006	Application document volume 9	17/03/2015
Schedule 5 notice issued on 07/06/2016	Response to question 3	28/06/2016
Response to regulation 60(1) Notice – request for information dated 20/10/2015	Spreadsheet	29/01/2016

Table S1.2 Operating techniques		
Description	Parts	Date Received
Receipt of additional information to the regulation 60(1) Notice	Additional information regarding emissions to sewer.	29/02/2016
Application for variation EPR/BX1675IT/V007	Application forms C2 and C3 and referenced supporting document as follows: Permit Variation Application: Volume 10 including addendum appendices A - H	09/06/2017
Further information received variation application EPR/BX1675IT/V007	Operating techniques identified in 'CSF Reg 60 Response 21 Aug 2017'.	21/08/2017
Application for partial surrender EPR/BX1675IT/S009	Application form E2 and referenced supporting documents.	29/12/2020

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC9	The operator shall assess options available for minimising water use, energy use and raw material use / waste minimisation. The assessment shall have regard to the techniques in Agency Guidance Note IPPC S1.02 and IPPC H3 Energy Efficiency. A written report summarising the assessment shall be submitted to the Agency. Where the assessment identifies an option that is BAT then the operator shall propose a timescale for its implementation. Following submission of the report, the operator shall implement the option approved in writing by the Agency to the timescale indicated in the approval.	Complete
IC10	The operator shall develop a written Site Closure Plan, having regard to Section 2.11 of the Agency Sector Guidance Note IPPC S1.02. Upon completion of the plan the document shall be submitted to the Agency.	Complete
IC11	A written procedure shall be submitted to the agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency	Complete
IC12	The operator shall monitor the emissions of Hydrogen sulphide from point A11 on North Morecambe Terminal during the commissioning of the Rivers Terminal. The duration and frequency of the monitoring shall be agreed with the Agency. Following the completions of the monitoring programme, a written report summarising the monitoring results and including proposals for future monitoring frequencies, methods and emission limit values for the emissions from point A11 on North Morecambe Terminal shall be submitted to the Agency.	Complete
IC13	The Operator shall review the options available for the reduction of emissions of methane from the Nitrogen Removal Units 1 and 2. A written report summarising the review shall be submitted to the Agency. Where the review identifies an option that is BAT then the operator shall propose a timescale for its implementation. Following submission of the	Complete

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	report, the operator shall implement the option approved in writing by the Agency to the timescale indicated in the approval.	
IC14	<p>The Operator shall advise the Agency in writing when the commissioning of Rivers Terminal has been completed. Until the commissioning of Rivers Terminal has been completed the Operator shall provide the Agency with a monthly report detailing the reasons why commissioning has not been completed.</p> <p>Within 28 days of notifying the Agency that commissioning of Rivers Terminal has been completed the Operator such submit a report to the Agency on the testing and monitoring programme carried out as part of the commissioning, demonstrating that the Operator can comply with all the emission limits in the permit during the normal operations of the Rivers Terminal.</p>	Complete
IC15	<p>The operator shall submit a written sulphuric acid replacement plant post-commissioning report to the Environment Agency which shall include:</p> <ul style="list-style-type: none"> • a review of performance of the plant against the conditions of this permit. • details of optimisation of the NOx emission abatement system; how the Selective Catalytic Reduction (SCR) system and combustion settings are controlled to optimise NOx emissions. • details of optimisation of sulphur dioxide conversion to sulphur trioxide. • details of procedures developed during commissioning for achieving and demonstrating satisfactory process control and covering the range of designed operating rates. 	Complete
IC16	‘For LCPD LCP 196, 197 and 198 (now LCP 177, 178 and 179 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LPCD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.’	Completed
IC17	The operator shall provide a report in writing to the Environment Agency. The report shall contain a proposed emission limit which applies when the load varies between MSUL/MSDL and base load during the daily reference period, for emission point LCP177 for oxides of nitrogen. The report shall also provide justification for this limit, and an assessment of the impacts of emissions at this limit using our H1 guidance or equivalent methodology.	Completed
IC18	The Operator shall submit a written report to the Environment Agency on the commissioning of the catalytic abatement system for LCP 177. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	Completed
IC19	The operator shall demonstrate that appropriate secondary containment measures are in place for the condensate storage tanks at the condensate storage facility or put in place alternative condensate storage and handling facilities which meet BAT which includes but is not limited to considerations of design, adequate containment and maintenance procedures.	Completed

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC20	<p>For the discharge to surface water from the Condensate Storage Facility the operator shall submit a written monitoring plan to the Environment Agency for approval that includes:</p> <p>(a) proposals to undertake representative monitoring of hazardous pollutants (as set out in the Environment Agency's Surface Water Pollution Risk Assessment guidance) in the discharge to surface water from point W5 including the parameters to be monitored, frequencies of monitoring and methods to be used.</p> <p>The operator shall carry out the monitoring in accordance with the Environment Agency's written approval.</p>	<p>29/02/2020 if discharge point still in use for discharge of any process effluent</p> <p>Discharge point no longer in use IC not relevant</p>
IC21	<p>The Operator shall submit a diffuse VOC monitoring plan to the Environment Agency for written approval. This shall include but not be limited to:</p> <ul style="list-style-type: none"> • The nature of the material handled; • The sources of emissions; • Justification of the monitoring techniques selected • How the monitoring data will be recorded and reviewed <p>The plan shall take into account the appropriate techniques for VOC monitoring specified in BAT conclusion 6 for the Refining of Mineral Oil and Gas. The Operator shall implement the approved plan and produce and submit an annual report on the results of the monitoring undertaken under the plan.</p>	Completed
IC22	<p>The Operator shall submit a plan for approval to the Environment Agency to carry out flare use study for the installation (duration to be proposed by the Operator but it should be representative), which examines the following:</p> <ul style="list-style-type: none"> • Frequency of flaring event • Duration of flaring event • Quantity and nature of material flared • Causes of flaring events <p>The proposals shall be implemented by the operator from the date of approval in writing by the Environment Agency</p>	Completed
IC23	<p>The Operator shall use the findings of the study to identify ways to reduce the frequency and duration of flaring events, giving particular consideration to the techniques identified in BAT 55 and BAT 56 for the refining of mineral oil and gas.</p> <p>The Operator shall produce a written summary of the outcomes of the flare use study and produce a flare minimisation plan. The operator shall implement the minimisation plan to a timetable agreed with the Environment Agency.</p>	Completed
IC24	<p>The operator shall submit a written monitoring plan to the Environment Agency for approval that includes:</p> <p>(a) proposals to undertake representative (a) monitoring of hazardous pollutants (as set out in the Environment Agency's Surface Water Pollution Risk Assessment guidance) in the discharge to sewer from point S1 including the parameters to be monitored, frequencies of monitoring and methods to be used;</p> <p>The operator shall carry out the monitoring in accordance with the Environment Agency's written approval.</p>	Completed
IC25	<p>The operator shall submit a written report to the Environment Agency for approval that includes:</p> <p>The results of an assessment of the impact of the emissions to surface water from the site following the treatment of the effluent at the Waste Water treatment works in accordance with the Environment Agency's Surface Water Pollution Risk Assessment Guidance available on our website. The report shall:</p>	23/12/2022

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	(a) be based on the parameters monitored in IC24 above; and (b) Include proposals for appropriate measures to mitigate the impact of any emissions where the assessment determines they are liable to cause pollution, including timescales for implementation of individual measures.	
IC26	The operator shall submit a written report to the Environment Agency for approval containing the results of an investigation carried out to define the operational parameters of the cryogenic system including its start up phase.	Completed
IC27	The operator shall investigate the feasibility of utilising the amine regeneration system as a heat sink during start up to allow all emissions from the North Morecambe Terminal Field Gas Compressor to be routed the SCR. The operator shall submit a written report outlining the findings of this investigation and include a timetable for any required changes to be implemented.	Completed

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
-	-	-

Table S1.5 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	“Minimum Start-Up Load” Load in MW and as percent of rated power output (%)	“Minimum Shut-Down Load” Load in MW and as percent of rated power output (%)
A18: LCP 674	12MW; 42%	12MW; 42%

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Fuel gas used in the High Pressure (HP) combustion processes on site.	Sulphur content of HP fuel gas shall not exceed the NTS gas specification level.
Fuel gas used in the Low Pressure (LP) combustion processes on site.	Sulphur content of LP fuel gas shall not exceed 150 ppm (215 mg/m ³) total sulphur

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) - these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
North Morecombe Terminal						
A6	Hot Oil Heater A	Oxides of nitrogen (as NO ₂)	150 mg/m ³	Hourly average	Annually	BS EN 14792
		Carbon monoxide	100 mg/m ³	Hourly average	6 monthly	BS EN 15058
		Sulphur dioxide	No limit set	-	-	-
		Dust	No limit set	-	-	-
A7	Hot Oil Heater B	Oxides of nitrogen (as NO ₂)	150 mg/m ³	Hourly average	Annually	BS EN 14792
		Carbon monoxide	100 mg/m ³	Hourly average	6 monthly	BS EN 15058
		Sulphur dioxide	No limit set	-	-	-
		Dust	No limit set	-	-	-
A9	Dew Point Control Regeneration Heater	Oxides of nitrogen (as NO ₂)	150 mg/m ³	15 minute average	Annually	BS EN 14792
		Carbon monoxide	100 mg/m ³	15 minute average	Annually	BS EN 15058
		Sulphur dioxide	No limit set	-	-	-
		Dust	No limit set	-	-	-
A10	Carbon Dioxide Removal Plant Vent Gas Incinerator	Oxides of nitrogen (as NO ₂)	165 mg/m ³	Hourly average	Annually	BS EN 14792
A10	Carbon Dioxide Removal Plant Vent	Sulphur dioxide	230 mg/m ³	Hourly average	Annually	BS EN 14791

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) - these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
	Gas Incinerator					
A12	Nitrogen Removal Unit 1	Total organic carbon (as methane)	15,000 mg/m ³	Hourly average	Annually	BS EN 13526 or BS EN 12619
A13	Nitrogen Removal Unit 2	Total organic carbon (as methane)	15,000 mg/m ³	Hourly average	Annually	BS EN 13526 or BS EN 12619
A14	Engine for Product Gas Compressor A	Oxides of nitrogen (as NO ₂)	500 mg/m ³	Hourly average	Annually	BS EN 14792
A14	Engine for Product Gas Compressor A	Carbon monoxide	600 mg/m ³	Hourly average	Annually	BS EN 15058
A14	Engine for Product Gas Compressor A	Total organic carbon (as methane)	1000 mg/m ³	Hourly average	Annually	BS EN 13526 or BS EN 12619
A15	Engine for Product Gas Compressor B	Oxides of nitrogen (as NO ₂)	500 mg/m ³	Hourly average	Annually	BS EN 14792
A15	Engine for Product Gas Compressor B	Carbon monoxide	600 mg/m ³	Hourly average	Annually	BS EN 15058
A15	Engine for Product Gas Compressor B	Total organic carbon (as methane)	1000 mg/m ³	Hourly average	Annually	BS EN 13526 or BS EN 12619
A16	Engine for Product Gas Compressor C	Oxides of nitrogen (as NO ₂)	500 mg/m ³	Hourly average	Annually	BS EN 14792
A16	Engine for Product Gas Compressor C	Carbon monoxide	600 mg/m ³	Hourly average	Annually	BS EN 15058
A16	Engine for Product Gas	Total organic carbon (as methane)	1000 mg/m ³	Hourly average	Annually	BS EN 13526 or

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) - these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
	Compressor C					BS EN 12619
A17	Engine for Product Gas Compressor D	Oxides of nitrogen (as NO ₂)	500 mg/m ³	Hourly average	Annually	BS EN 14792
A17	Engine for Product Gas Compressor D	Carbon monoxide	600 mg/m ³	Hourly average	Annually	BS EN 15058
A17	Engine for Product Gas Compressor D	Total organic carbon (as methane)	1000 mg/m ³	Hourly average	Annually	BS EN 13526 or BS EN 12619
A18	LCP 674-gas turbine fired on natural gas	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	50 mg/m ³ [Note 10]	Daily mean of validated hourly averages 70 % to base load (note 5a)	Continuous	BS EN 15267-3
			50 mg/m ³ [Note 10]	Daily mean of validated hourly averages MSDL/MSUL to base load (note 5b)		
			45 mg/m ³ [Note 10]	Monthly mean of validated hourly averages 70% to base load (note 5a)		
			90 mg/m ³ [Note 10]	95% of validated hourly averages within a calendar year 70 % to base load (note 5a)		

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) - these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
			35 mg/m ³ [Note 10]	Annual average 70% to base load (note 5a)		
A18	LCP 674-gas turbine fired on natural gas	Carbon Monoxide	110 mg/m ³ [Note 10]	Daily mean of validated hourly averages 70 % to base load (note 5a)	Continuous	BS EN 15267-3
			110 mg/m ³ [Note 10]	Daily mean of validated hourly averages MSDL/MSUL to base load (note 5b)		
			100 mg/m ³ [Note 10]	Monthly mean of validated hourly averages 70% to base load (note 5a)		
			200 mg/m ³ [Note 10]	95% of validated hourly averages within a calendar year 70 % to base load (note 5a)		
			40 mg/m ³ [Note 10]	Annual average 70% to base load (note 5a)		
A18	LCP 674-gas turbine fired on natural gas	Ammonia	5 mg/m ³	Daily average	Continuous	BS EN 15267-3

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) - these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A18	LCP 674-gas turbine fired on natural gas	Sulphur dioxide	-	-	Continuous	BS EN 15267-3
A18	LCP 674-gas turbine fired on natural gas	Oxygen	-	-	Continuous	BS EN 15267-3
A18	LCP 674-gas turbine fired on natural gas	Water Vapour	-	-	Continuous	BS EN 15267-3
A18	LCP 674-gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous	BS EN 15267-3
A18	LCP 674-gas turbine fired on natural gas	Stack gas pressure	-	-	At least every 6 months	Exhaust volume calculated from fuel gas flow
A18	LCP 674-gas turbine fired on natural gas	As required by the Method Implementation Statement for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A11, A24, A25, A27	Pre Purification Unit, Ground Flare, Vent stack, Assorted Vents	No parameters set	No limit set	-	-	Permanent sampling access not required
Rivers Terminal						
AR1, AR2, AR5, AR7	HP Flare, LP Flare, Package boiler, Methanol tank	No parameters set	No limit set	-	-	Permanent sampling access not required
AR3 (A & B)	Gas Turbine 1 A - Main stack B - Divert stack	Oxides of nitrogen (as NO ₂)	125 mg/m ³ [Note 7]	Hourly average	Annually	BS EN 14792
AR3 (A & B)	Gas Turbine 1 A - Main stack B - Divert stack	Carbon monoxide	100 mg/m ³ [Note 7]	Hourly average	Annually	BS EN 15058
AR4 (A & B)	Gas Turbine 2 A - Main stack B - Divert stack	Oxides of nitrogen (as NO ₂)	125 mg/m ³ [Note 7]	Hourly average	Annually	BS EN 14792

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) - these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
AR4 (A & B)	Gas Turbine 2 A - Main stack B - Divert stack	Carbon monoxide	100 mg/m ³ [Note 7]	Hourly average	Annually	BS EN 15058
AR8	Sulphuric Acid Plant (New)	Oxides of nitrogen (as NO ₂)	50 mg/m ³ [Note 4]	Daily average	Continuous with annual verification [Note 6]	BS EN 15267-3 [Note 8]
AR8	Sulphuric Acid Plant (New)	Carbon monoxide	100 mg/m ³ [Note 4]	Daily average	Continuous with annual verification [Note 6]	BS EN 15267-3 [Note 8]
AR8	Sulphuric Acid Plant (New)	Sulphur dioxide	400 mg/m ³ [Note 4]	Daily average	Continuous with annual verification [Note 6]	BS EN 15267-3 [Note 8]
AR8	Sulphuric Acid Plant (New)	Hydrogen sulphide	7 mg/m ³ [Note 4]	Daily average	Continuous with annual verification [Note 6]	In-house methods agreed with the Agency. Annual verification using US EPA method 11
AR8	Sulphuric Acid Plant (New)	Conversion based on mass of sulphur dioxide feed to converter	Minimum 99.5% [Note 9]	12-month rolling average	Continuous	In-house methods agreed with the Agency
AR8	Sulphuric Acid Plant (New)	Sulphuric acid mist	35 mg/m ³	Annual	Annually	US EPA method 8
AR9, AR10, AR11	Hot air vent, Mist control units	No parameters set	No limit set	--	--	Permanent sampling access not required
<p>Notes applicable to table S3.1</p> <p>Note 1: Monitoring will not be required from any emission point where the process giving rise to emissions has been operated for less than 500 hours over the previous rolling 12 months. This condition does not apply to emission point A18.</p> <p>Note 2: The emission limits specified on table S3.1 shall not apply to the first hour after start up, the hour prior to shut down, during the commissioning of plant or periods agreed with Agency such as plant trips. This condition does not apply to emission point A18.</p> <p>Note 3: Note removed.</p> <p>Note 4 : The Acid Plant may not operate for longer than 14 days in any year without continuous monitoring of the emissions except with the agreement of the Environment Agency. A record of any times that continuous monitoring is not available shall be kept by the operator.</p>						

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) - these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
<p>Note 5a: This ELV applies where the load is >70% for the duration of the sampling period.</p> <p>Note 5b: This ELV applies where the load varies between MSUL/MSDL and base load during the sampling period. MSUL and MSDL are defined in Table S1.4.</p> <p>Note 6: The continuous monitoring data from AR8 shall be verified by an annual extractive monitoring exercise consisting of 3 x 1 hour average samples analysed for Oxides of Nitrogen, Carbon Monoxide, Sulphur Dioxide, Hydrogen Sulphide and conversion. The monitoring shall be carried out to MCERTS standards. Continuous monitoring results for AR8 are only valid when the catalyst is >390°C and 3 hours has elapsed after start-up and acid gas is being combusted.</p> <p>Note 7: Limits shall only apply at GT load conditions where turbine is operating in dry low NOx mode.</p> <p>Note 8: Certification to the MCERTS performance standards indicates compliance with BS EN 15267-3.</p> <p>Note 9: Steady State operation; limit based on 52-week rolling average</p> <p>Note 10: Emission limit values do not apply until the cryogenic system is within its operational parameters as defined by the response to improvement condition IC26.</p>						

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W2 as shown on figure 1C North Morecambe Terminal in volume 1 of the application [Note 1]	Outfall Holding Basins A & B	COD	No limit set	Spot sample	Per batch discharge	In-house methods agreed with the
		pH	No limit set			
		Conductivity	No limit set			
		Suspended solids	No limit set			
		Oil and grease	No limit set			
		Methanol	No limit set			
		Amines	No limit set			
Notes applicable to table S3.2						
Note 1: The sample point for W2 is the Outfall holding basin being discharged, either A or B.						

Emission point ref. & location	Source	Parameter	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1	Combined discharge from Rivers and North Morecambe Terminals	None specified	No set limit	-	-	-

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
North Morecambe Terminal A6, A7- Hot Oil Heaters	Oxides of nitrogen (as NO ₂), Carbon monoxide	Quarterly	Portable stack gas analyser	If operating at the time of process monitoring
North Morecambe Terminal A9- Dew Point Control Regeneration Heater	Oxides of nitrogen (as NO ₂), Carbon monoxide	Quarterly	Portable stack gas analyser	
North Morecambe Terminal A10- Carbon Dioxide Removal Plant Vent Gas Incinerator	Oxides of nitrogen (as NO ₂), Sulphur dioxide, Carbon dioxide	Quarterly	Portable stack gas analyser	
North Morecambe Terminal A12, A13- Nitrogen Removal Units	Total organic carbon (as methane)	Quarterly	In-house methods agreed with the Agency	
North Morecambe Terminal A14, A15, A16, A17- Engines for Product Gas Compressors	Oxides of nitrogen (as NO ₂), Carbon monoxide	Six monthly	Portable stack gas analyser	
North Morecambe Terminal A14, A15, A16, A17- Engines for Product Gas Compressors	Total organic carbon (as methane)	Six monthly	In-house methods agreed with the Agency	
Rivers Terminal Common Impounding Basin- Rivers Terminal Drainage System	pH, Methanol, Visible oil & grease	Prior to every discharge	In-house methods agreed with the Agency	

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Rivers Terminal Open Drains Pit- Rivers Terminal Drainage System	pH, Methanol, Visible oil & grease	Prior to every discharge	In-house methods agreed with the Agency	–
North Morecambe Terminal Methanol Stills Bottom Sump	pH, Visible oil & grease	Prior to every discharge	In-house methods agreed with the Agency	–
North Morecambe Terminal Methanol Stills Bottom Sump	Methanol	Prior to every discharge	In-house methods agreed with the Agency	-
North Morecambe Terminal Methanol Stills Bottom Sump	Toluene, Ethylbenzene, Benzene, m&p-Xylene, o-Xylene	Annually	In-house methods agreed with the Agency	–
Fugitive emissions of VOCs from operational plant at the installation.	VOCs	-	LDAR programme for testing potential sources of fugitive emissions of VOCs as agreed under IC21.	The operator shall complete repairs and/or carry out other actions to prevent, or where that is not possible, minimise continued emissions from those sources.
Fuel Gas Monitoring	Mercury	6 monthly	BS ISO 6978 Part 2	Sampling to be undertaken at locations within the gas system that are representative of the gas composition burnt in combustion units.

Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A6, A7, A9, A10, A12, A13 and AR8	Every 3 months	1 January, 1 April 1 July, 1 October
Emissions to air Parameters as required by condition 3.5.1.	A14, A15, A16 and AR17	Every 6 months	1 January, 1 July
Emissions to air Parameters as required by condition 3.5.1.	A6, A7, A9, A10, A12, A13, A14, A15, A16, A17, AR3, AR4 and AR8	Every 12 months	1 January
Oxides of nitrogen Carbon monoxide Sulphur dioxide	A18	Every 6 months	1 January, 1 July,
Emissions to surface water Parameters as required by condition 3.5.1	W2	Every 12 months	1 January, 1 April 1 July, 1 October
Emissions to sewer Parameters as required by condition 3.5.1	S1	No routine reporting required	-
Emissions to internal drainage systems feeding S1 Parameters as required by condition 3.5.1	Rivers Terminal: Common Impounding Basin, Rivers Terminal: Open Drains Pit, North Morecambe Terminal: Methanol Stills Bottom Sump	Every 6 months	1 January, 1 July

Table S4.2 Resource efficiency metrics	
Parameter	Units
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr
Annual Operating Hours	hr
Water Abstracted from Fresh Water Source	m ³
Water Abstracted from Borehole Source	m ³
Water Abstracted from Estuarine Water Source	m ³
Water Abstracted from Sea Water Source	m ³

Table S4.2 Resource efficiency metrics	
Parameter	Units
Water Abstracted from Mains Water Source	m ³
Gross Total Water Used	m ³
Net Water Used	m ³
Hazardous Waste Transferred for Disposal at another installation	t
Hazardous Waste Transferred for Recovery at another installation	t
Non-Hazardous Waste Transferred for Disposal at another installation	t
Non-Hazardous Waste Transferred for Recovery at another installation	t
Waste recovered to Quality Protocol Specification and transferred off-site	t
Waste transferred directly off-site for use under an exemption / position statement	t

Table S4.3 Chapter III Performance parameters for reporting to DEFRA and other Performance parameters		
Parameter	Frequency of assessment	Units
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO _x for each LCP	Annually	t
Total Emissions to Air of SO ₂ for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP (Load Factor)	Annually	hr
Natural gas produced	Annually	Million standard cubic metres
Sulphuric acid produced	Annually	Tonnes (as 96 wt%)
Sulphur dioxide conversion efficiency	Annually	%

Table S4.4 Reporting forms				
Media/parameter	Reporting format	Starting Point	Agency recipient	Date of form
Air	Form Air 1 or other forms as agreed in writing by the Agency	01/01/09	Area Office	15/10/18
Air & Energy	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy	01/01/16	National & Area Offices	01/12/17
LCP	Form IED HR1 – operating hours	01/01/16	National & Area Offices	31/12/15
Air	Form IED PM1 – discontinuous monitoring and load	01/01/16	Area Office	31/12/15
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	15/10/18

Table S4.4 Reporting forms				
Media/parameter	Reporting format	Starting Point	Agency recipient	Date of form
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National & Area Office	31/12/15
Water	Form Water1 or other form as agreed in writing by the Agency	01/01/09	Area Office	15/10/18
Internal water drainage systems	Form Internal Drainage or other form as agreed in writing by the Agency	01/01/11	Area Office	01/12/11

Schedule 5 – Notification

These pages outline the information that the operator must provide.

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 EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

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 which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
-------	--

Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“Acid Gas” means a gas that contains sulphurous compounds.

“Air Quality Risk Assessment” has the meaning given in Annex D of IED Compliance Protocol for Utility Boilers and Gas Turbines.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

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

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“base load” means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

“BAT” means Best available techniques, as defined in Article 3 of the Industrial Emissions Directive.

“BAT AEL” means the achievable emission level associated with application of the best available techniques.

“calendar monthly mean” means the value across a calendar month of all validated hourly means.

“CEN” means Comité Européen de Normalisation.

“Combustion Technical Guidance Note” means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by Environment Agency.

“disposal”. Means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“DLN” means dry, low NO_x burners.

“dynamic emission limit value” (DELV) means an emission limit that varies in accordance with Article 40 of the Industrial Emissions Directive.

“emissions to land” includes emissions to groundwater.

“Energy efficiency” the annual net plant energy efficiency means the value calculated from the operational data collected over the year.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit.

“Flaring event” means a large scale temporary operation of a flare system, caused by a process disruption.

“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.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input, excludes individual combustion plants with a rated thermal input below 15MW.

“low polluting fuels” means biomass or coal with an average as-received sulphur content of less than 0.4% by mass as described in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

“Mid-merit” means combustion plant operating between 1,500 and 4,000 hrs/yr.

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

“MCR” means maximum continuous rating.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

“Natural gas” means naturally occurring methane with no more than 20% by volume of inert or other constituents.

“ncv” means net calorific value.

“Normal Operation” means the range of process conditions that can occur when a process unit is performing its intended duty.

“NMT FGC” means North Morecambe Terminal Field Gas Compressor-LCP unit.

“NTS” means National Transmission System.

“operational hours” are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

“Other than normal operating conditions” means process conditions that would not occur during the normal operation of a process unit.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“RFG” means Refinery Fuel Gas: off-gases from distillation or conversion units used as a fuel.

“SI” means site inspector.

“Standby fuel” means alternative liquid fuels that are used in emergency situations when the gas fuel which is normally used, is not available.

“The BREF” means the BAT Reference Document for the Refining of Mineral Oil and Gas published by the European commission 2014/738/EU.

“VOC” means Volatile organic compounds as defined in Article 3(45) of Directive 2010/75/EU - ‘volatile organic compound’ means any organic compounds well as the fraction of creosote, having at 293,15 K a vapour pressure of 0,01 kPa or more, or having a corresponding volatility under the particular conditions of use.

“year” means calendar year ending 31 December.

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.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions 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

- in relation to emissions from A10 (vent gas incinerator), the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 15%; and/or
- in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or
- in relation to emissions 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.
- in relation to emissions from sulphuric acid plant (AR8) the concentration at a temperature of 273K and at a pressure of 101.3 kPa, dry.

Schedule 7 – Site plan

Site plan subject to National Security

Figure 2: Permitted site installation boundary after partial surrender

Site Closure Report – Condensate Storage Facility and Condensate Pipeline December 2021

END OF PERMIT