This licence was amended on 23 January 2019 under Section 96(1)(a) of the Environmental Protection Agency Act 1992 as amended. The details of Amendment A must be read in conjunction with this licence. The amendment document is entitled "Clerical Amendment A".


Headquarters
P.O. Box 3000
Johnstown Castle Estate
County Wexford
Ireland

# INDUSTRIAL EMISSIONS LICENCE

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|---|---|
| **Licence Register Number:** | **P0266-03** |
| **Company Register Number:** | **16576** |
| **Licensee:** | **Irving Oil Whitegate Refinery Limited** |
| **Location of Installation:** | **Whitegate<br>Midleton<br>County Cork** |

ENVIRONMENTAL PROTECTION AGENCY ACT 1992 AS AMENDED

# INDUSTRIAL EMISSIONS LICENCE

Decision of Agency, under Section 90(2) of the Environmental Protection Agency Act 1992 as amended.

Reference number in
Register of licences: P0266-03

Further to notice dated 23/05/2018 the Agency in exercise of the powers conferred on it by the Environmental Protection Agency Act 1992 as amended, for the reasons hereinafter set out, hereby grants a revised Industrial Emissions licence to Irving Oil Whitegate Refinery Limited, Whitegate, Midleton, County Cork, CRO number 16576
,

to carry on the following activities

:- the operation of mineral oil and gas refineries

and

:- combustion of fuels in installations with a total rated thermal input of 50MW or more

at Whitegate, Midleton, County Cork, subject to the conditions as set out.

GIVEN under the Seal of the Agency this the 17th day of October 2018.

PRESENT when the seal of the Agency
was affixed hereto:

Mary Turner, Authorised Person

# *INTRODUCTION*

*This introduction is not part of the licence and does not purport to be a legal interpretation of the licence.*

Irving Oil Whitegate Refinery Limited operates an oil refinery located at Whitegate on the eastern shore of Cork Harbour which occupies a large site including Corkbeg Island. Facilities include process units, crude oil storage tanks, intermediate and finished product storage tanks, blending facilities, road loading terminals, effluent treatment, fire fighting facilities, workshops, warehouses and site offices. There is also a marine terminal off Corkbeg Island. The main process units at the installation are the desalter, pipestill, powerformer, isomerisation unit, hydrofiner unit and an amine sulphuric acid plant. Catalysts are used in the powerformer and isomerisation unit. The process is continuous and each unit operation is interlinked.

This revised licence is for the purposes of updating the licence to ensure compliance with the requirements of the European Commission Implementing Decision on BAT conclusions for refining of mineral oil and gas (2014/738/EU) (Refineries BATC) and applicable BAT conclusions.

The licence sets out in detail the conditions under which Irving Oil Whitegate Refinery Limited will operate and manage this installation.

# *Table of Contents*

# *Glossary of Terms*

All terms in this licence should be interpreted in accordance with the definitions in the Environmental Protection Agency Act 1992 as amended / Waste Management Act 1996 as amended, unless otherwise defined in the section.

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| **Adequate lighting** | 20 lux measured at ground level. |
| **AER** | Annual Environmental Report. |
| **Agreement** | Agreement in writing. |
| **Annually** | All or part of a period of twelve consecutive months. |
| **API separator** | Oil/water/ sludge separator (developed by the American Petroleum Institute (API)). |
| **Application** | The application by the licensee for this licence. |
| **Appropriate Facility** | A waste management facility or installation, duly authorised under relevant law and technically suitable. |
| **ASA** | Amine and Sulphuric Acid. |
| **Attachment** | Any reference to Attachments in this licence refers to attachments submitted as part of this licence application. |
| **BAT** | Best Available Techniques. |
| **BAT conclusions** | A document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures. |
| **BAT reference document** | A document drawn up by the Commission of the European Union in accordance with Article 13 of the Industrial Emissions Directive, resulting from the exchange of information in accordance with that Article of that Directive and describing, in particular, applied techniques, present emissions and consumption levels, techniques considered for the determination of best available techniques as well as BAT conclusions and any emerging techniques. |
| **Biannually** | At approximately six – monthly intervals. |
| **Biennially** | Once every two years. |
| **BOD** | 5 day Biochemical Oxygen Demand (without nitrification suppression). |
| **CEN** | Comité Européen De Normalisation – European Committee for Standardisation. |

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| **COD** | Chemical Oxygen Demand. |
| **Containment boom** | A boom that can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses. |
| **CRO Number** | Company Register Number. |
| **Daily** | During all days of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement on any one day. |
| **Day** | Any 24 hour period. |
| **Daytime** | 0700 hrs to 1900 hrs. |
| **dB(A)** | Decibels (A weighted). |
| **Diffuse VOC emissions** | Non-channelled VOC emissions that are not released via specific emission points such as stacks. They can result from area sources such as tanks or point sources such as pipe flanges. |
| **DO** | Dissolved oxygen. |
| **Documentation** | Any report, record, results, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence. |
| **Drawing** | Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence. |
| **Emission limits** | Those limits, including concentration limits and deposition rates, established in *Schedule B: Emissions, Monitoring and Control,* of this licence. |
| **EMP** | Environmental Management Programme. |
| **Environmental damage** | As defined in Directive 2004/35/EC. |
| **EPA** | Environmental Protection Agency. |
| **European Waste Catalogue (EWC)** | A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC, as amended by Commission Decision 2014/955/EU and any subsequent amendment published in the Official Journal of the European Community. |
| **Evening Time** | 1900hrs to 2300hrs. |
| **Facility** | Any site or premises used for the purpose of the recovery or disposal of waste. |
| **Fortnightly** | A minimum of 24 times per year, at approximately two week intervals. |

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| **Fugitive VOC emissions** | Diffuse VOC emissions from 'point' sources. |
| **Gas Oil** | Gas Oil as defined in Council Directive 1999/32/EC and meeting the requirements of S.I. No. 119 of 2008. |
| **GC/MS** | Gas chromatography/mass spectroscopy. |
| **Groundwater** | Has the meaning assigned to it by Regulation 3 of the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010). |
| **ha** | Hectare. |
| **Hazardous Substances** | Substances or mixtures as defined in Article 3 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures. |
| **Heavy metals** | This term is to be interpreted as set out in "Parameters of Water Quality, Interpretation and Standards" published by the Agency in 2001. ISBN 1-84095-015-3. |
| **HFO** | Heavy Fuel Oil as defined in Council Directive 1999/32/EC and meeting the requirements of S.I. No. 119 of 2008. |
| **Hours of operation** | The hours during which the installation is authorised to be operational. |
| **ICP** | Inductively coupled plasma spectroscopy. |
| **IE** | Industrial Emissions. |
| **Incident** | The following shall constitute as incident for the purposes of this licence:<br>(i) an emergency;<br>(ii) any emission which does not comply with the requirements of this licence;<br>(iii) any malfunction or breakdown of key environmental abatement, control or monitoring equipment<br>(iv) any trigger level specified in this licence which is attained or exceeded; and,<br>(v) any indication that environmental pollution has, or may have, taken place. |
| **Industrial Emissions Directive** | Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (Recast). |

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| **Installation** | A stationary technical unit or plant where the activity concerned referred to in the First Schedule of EPA Act 1992 as amended is or will be carried on, and shall be deemed to include any directly associated activity, which has a technical connection with the activity and is carried out on the site of the activity. |
| **Irish Water** | Irish Water, Colvill House, 24/26 Talbot Street, Dublin 1. |
| **K** | Kelvin. |
| **kPa** | Kilopascals. |
| $L_{Aeq,T}$ | This is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period (T). |
| $L_{Ar,T}$ | The Rated Noise Level, equal to the $L_{Aeq}$ during a specified time interval (T), plus specified adjustments for tonal character and/or impulsiveness of the sound. |
| **Licensee** | Irving Oil Whitegate Refinery Limited, Whitegate, Midleton, County Cork, CRO Number 16576. |
| **List I** | As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments. |
| **List II** | As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments. |
| **Local Authority** | Cork County Council. |
| **Maintain** | Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to perform its function adequately. |
| **Mass flow limit** | An emission limit value expressed as the maximum mass of a substance that can be emitted per unit time. |
| **Mass flow threshold** | A mass flow rate above which a concentration limit applies. |
| **Monthly** | A minimum of 12 times per year, at intervals of approximately one month. |
| **Night-time** | 2300 hrs to 0700 hrs. |
| **Noise-sensitive location (NSL)** | Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels. |

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| **Odour-sensitive location** | Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other premises or area of high amenity which for its proper enjoyment requires the absence of odour at nuisance levels. |
| **Oil separator** | Device installed for removing oil from aqueous streams. |
| **PRTR** | Pollutant Release and Transfer Register. |
| **Quarterly** | All or part of a period of three consecutive months beginning on the first day of January, April, July or October. |
| **Relevant Hazardous Substances** | Those substances or mixtures defined within Article 3 of Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) which, as a result of their hazardousness, mobility, persistence and biodegradability (as well as other characteristics), are capable of contaminating soil or groundwater and are used, produced and/or released by the installation. |
| **RFG** | Refinery Fuel Gas. |
| **SAC** | Special Area of Conservation designated under the *Habitats Directive,* Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. |
| **Sample(s)** | Unless the context of this licence indicates to the contrary, the term samples shall include measurements taken by electronic instruments. |
| **Sanitary effluent** | Wastewater from installation toilet, washroom and canteen facilities. |
| **Soil** | The top layer of the Earth's crust situated between the bedrock and the surface. The soil is composed of mineral particles, organic matter, water, air and living organisms. |
| **SOP** | Standard operating procedure. |
| **SPA** | Special Protection Area designated under the Birds Directive, Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds |
| **Specified emissions** | Those emissions listed in *Schedule B: Emissions, Monitoring and Control* of this licence. |
| **Standard method** | A National, European or internationally recognised procedure (e.g. I.S. EN, ISO, CEN, BS or equivalent); or an in-house documented procedure based on the above references; a procedure as detailed in the current edition of "Standard Methods for the Examination of Water and Wastewater" (prepared and published jointly by A.P.H.A., A.W.W.A. & W.E.F.), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or an alternative method as may be agreed by the Agency. |
| **Storage** | Includes holding of waste. |
| **Storm water** | Rain water run-off from roof and non-process areas. |

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| **The Agency** | Environmental Protection Agency. |
| **TOC** | Total organic carbon. |
| **Trade effluent** | Trade effluent has the meaning given in the Water Services Act, 2007. |
| **Trigger level** | A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee. |
| **Volatile liquid hydrocarbon compounds** | Petroleum derivatives with a Reid vapour pressure (RVP) of more than 4 kPa, such as naphtha and aromatics. |
| **Waste** | Any substance or object which the holder discards or intends or is required to discard. |
| **Weekly** | During all weeks of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement in any one week. |
| **WWTP** | Waste water treatment plant. |

# *Decision & Reasons for the Decision*

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence, any emissions from the activity will comply with and will not contravene any of the requirements of Section 83(5) of the Environmental Protection Agency Act 1992 as amended.

The Agency has applied the Commission Implementing Decision of 2014/738/EU establishing Best Available Techniques (BAT) Conclusions, under Directive 2010/75/EU of the European Parliament and of the Council on Industrial Emissions, for the for the refining of mineral oil and gas and other applicable BAT Conclusions, as a reference when setting licence conditions.

The Agency has accordingly decided to grant a revised licence to Irving Oil Whitegate Refinery Limited to carry on the activities listed in *Part I, Schedule of Activities Licensed*, subject to the conditions set out in *Part III, Conditions*; such licence to take effect in lieu of Licence Register Number: P0266-02.

In reaching this decision the Agency has considered the documentation relating to:

- the existing licence, Register Number: P0266-02
- the review form, Register Number: P0266-03 and the supporting documentation received from the licensee;
- the Inspector's Report dated 26th April 2018
- the Proposed Determination dated 23rd May 2018
- the objection received from the Applicant;
- the Technical Committee Report dated 27 September 2018 on the objection to the proposed determination

and an Appropriate Assessment Screening of the likely significant effects of the activities on European Sites.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activities, individually or in combination with other plans or projects are likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Site(s) at Great Island Channel SAC (site code 001058) and Cork harbour SPA (site code 004030).

The activities are not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it can be excluded, on the basis of objective information, that the activities, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activities was not required.
This determination is based on the following reasons:

- This review is for the purposes of updating the licence to ensure compliance with the requirements of the European Commission Implementing Decision on BAT conclusions for refining of mineral oil and gas (2014/738/EU) and applicable BAT conclusions;
- This review does not change the nature or extent of emissions; and
- The conditions of the licence requires the treatment of waste water and waste gas on-site, the use of natural gas or refinery fuel gas as the primary fuel and accident prevention measures to be employed.

# *Part I Schedule of Activities Licensed*

In pursuance of the powers conferred on it by the Environmental Protection Agency Act 1992 as amended, the Agency hereby grants this revised Industrial Emissions licence to:

Irving Oil Whitegate Refinery Limited, Whitegate, Midleton, County Cork and CRO Number 16576

under Section 90(2) of the said Act to carry on the following activities:

:- the operation of mineral oil and gas refineries

and

:- combustion of fuels in installations with a total rated thermal input of 50MW or more

at Whitegate, Midleton, County Cork subject to the following twelve Conditions, with the reasons therefor and associated schedules attached thereto.

# *Part II Schedule of Activities Refused*

***None of the proposed activities as set out in the licence application have been refused.***

# *Part III Conditions*

## Condition 1. Scope

1.1 Industrial Emissions Directive activities at this installation shall be restricted to those listed and described in *Part I Schedule of Activities Licensed*, and shall be as set out in the licence application or as modified under Condition 1.4 of this licence and subject to the conditions of this licence.

1.2 Activities at this installation shall be limited as set out in *Schedule A: Limitations*, of this licence.

1.3 For the purposes of this licence, the installation authorised by this licence is the area of land outlined in red on Drawing No. 8821-1037 SH1 Revision A of the licence review application for licence register No. P0266-02. Any reference in this licence to "installation" shall mean the area thus outlined in red. The licensed activities shall be carried on only within the area outlined.

1.4 No alteration to, or reconstruction in respect of, the activity, or any part thereof, that would, or is likely to, result in

(i) a material change or increase in:

- the nature or quantity of any emission;
- the abatement/treatment or recovery systems;
- the range of processes to be carried out;
- the fuels, raw materials, intermediates, products or wastes generated, or

(ii) any changes in:

- site management, infrastructure or control with adverse environmental significance;

shall be carried out or commenced without prior notice to, and without the approval of, the Agency.

1.5 The installation shall be controlled, operated and maintained, and emissions shall take place as set out in the licence. All programmes required to be carried out under the terms of this licence become part of this licence.

1.6 This licence is for the purpose of IE licensing under the EPA Act 1992 as amended only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.

1.7 This licence shall have effect in lieu of the licence granted on 30th May 2012 (Register No P0266-02).

***Reason:*** ***To clarify the scope of this licence.***

## Condition 2. Management of the Installation

2.1 Installation Management

2.1.1 The licensee shall employ a suitably qualified and experienced installation manager who shall be designated as the person in charge. The installation manager or a nominated, suitably qualified and experienced deputy shall be present on the installation at all times during its operation or as otherwise required by the Agency.

2.1.2 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience as required and shall be aware of the requirements of this licence.

2.2 Environmental Management System (EMS)

2.2.1 The licensee shall maintain and implement an Environmental Management System (EMS), which shall incorporate energy efficiency management. The EMS shall be reviewed by senior management for suitability, adequacy and effectiveness and updated on an annual basis.

2.2.2 The EMS shall include, as a minimum, the following elements:

2.2.2.1 Commitment of the management, including senior management.

2.2.2.2 An environmental policy defined for the installation that includes the continuous improvement for the installation by the management.

2.2.2.3 Management and Reporting Structure and responsibility.

2.2.2.4 The necessary procedures, objectives and targets, in conjunction with financial planning and investment.

2.2.2.5 The licensee shall maintain and implement standard operating procedures.

2.2.2.6 A procedure for checking performance by sectoral benchmarking on a regular basis including energy efficiency.

2.2.2.7 Schedule of Environmental Objectives and Targets.

The licensee shall maintain and implement a Schedule of Environmental Objectives and Targets. The Schedule shall, as a minimum, provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, the choice of catalyst promoter, the reduction of flare events, the use of cleaner technology, cleaner production and the prevention, reduction and minimisation of waste. The Schedule shall include waste reduction targets. The Schedule shall also include the establishment of a water management scheme, to investigate the feasibility of measures to minimise water usage, water contamination and effluent volumes at the installation. The Schedule shall include time frames for the achievement of set targets and shall address a five-year period as a minimum. The Schedule shall be reviewed annually.

2.2.2.8 Environmental Management Programme (EMP)

The licensee shall maintain and implement an EMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.7. The EMP shall include:

- designation of responsibility for targets;
- the means by which they may be achieved;
- the time within which they may be achieved.

The EMP shall be reviewed annually.

A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.

2.2.2.9 Documentation

(i) The licensee shall maintain and implement an environmental management documentation system.

(ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

2.2.2.10 Corrective and Preventative Action

(i) The licensee shall establish maintain and implement procedures to ensure that corrective and preventative action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for persons initiating further investigation and corrective and preventative action in the event of a reported non-conformity with this licence shall be defined.

(ii) Where a breach of one or more of the conditions of this licence occurs, the licensee shall without delay take measures to restore compliance with the conditions of this licence in the shortest possible time and initiate any feasible preventative actions to prevent recurrence of the breach.

(iii) All corrective and preventative actions shall be documented.

2.2.2.11 Internal Audits

The licensee shall establish, maintain and implement a programme for independent internal audits of the EMS. Such audits shall be carried out at least once every three years. The audit programme shall determine whether or not the EMS is being implemented and maintained properly, and in accordance with the requirements of the licence. Audit reports and records of the resultant corrective and preventative actions shall be maintained as part of the EMS in accordance with Condition 2.2.2.9.

2.2.2.12 Awareness, Training and Competence

The licensee shall maintain and implement procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect upon the environment to ensure awareness and competence in their work area. Appropriate records of training shall be maintained.

2.2.2.13 Communications Programme

The licensee shall maintain and implement a Public Awareness and Communications Programme to ensure that members of the public can obtain information at the installation, at all reasonable times, concerning the environmental performance of the installation.

2.2.2.14 Maintenance Programme

The licensee shall maintain and implement a programme for maintenance of all plant and equipment based on the instructions issued by the manufacturer/supplier or installer of the equipment. Appropriate record keeping and diagnostic testing shall support this maintenance programme. The licensee shall clearly allocate responsibility for the planning, management and execution of all aspects of this programme to appropriate personnel (see Condition 2.1 above). The maintenance programme shall use appropriate techniques and measures to ensure the optimisation of energy efficiency in plant and equipment.

2.2.2.15 Efficient Process Control

The licensee shall maintain and implement a programme to ensure there is adequate control of processes under all modes of operation. The programme shall identify the key indicator parameters for process control performance, as well as identifying methods for measuring and controlling these parameters. Abnormal process operating conditions shall be documented, and analysed to identify any necessary corrective action.

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| ***Reason:*** | ***To make provision for management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.*** |

# Condition 3. Infrastructure and Operation

3.1 The licensee shall establish and maintain, for each component of the installation, all infrastructure referred to in this licence in advance of the commencement of the licensed activities in that component, or as required by the conditions of this licence. Infrastructure specified in the application that relates to the environmental performance of the installation and is not specified in the licence, shall be installed in accordance with the schedule submitted in the application.

3.2 The licensee shall have regard to the following when choosing and/or designing any new plant/infrastructure or when overhauling existing plant:

(i) BAT Conclusions for the refining of mineral oil and gas applicable to new plant,

(ii) Relevant BAT Conclusions, and

(iii) The environmental impact of eventual decommissioning.

3.3 Installation Notice Board

(i) The licensee shall, within one month of the date of grant of this licence, provide an Installation Notice Board on the installation so that it is legible to persons outside the main entrance to the installation. The minimum dimensions of the board shall be 1200 mm by 750 mm. The notice board shall be maintained thereafter.

(ii) The board shall clearly show:

(i) the name and telephone number of the installation;
(ii) the normal hours of operation;
(iii) the name of the licence holder;
(iv) an emergency out of hours contact telephone number;
(v) the licence reference number; and
(vi) where environmental information relating to the installation can be obtained.

3.4 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.

3.5 In the case of composite sampling of aqueous emissions from the operation of the installation, a separate composite sample or homogeneous sub-sample (of sufficient volume as advised) shall be refrigerated immediately after collection and retained as required for EPA use.

3.6 The licensee shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency. The requirement with regard to off-site points is subject to the prior agreement of the landowner(s) concerned.

3.7 Tank, Container and Drum Storage Areas

3.7.1 All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004).

3.7.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:

(i) 110% of the capacity of the largest tank or drum within the bunded area; or

(ii) 25% of the total volume of substance that could be stored within the bunded area.

3.7.3 All drainage from bunded areas shall be treated as contaminated unless it can be demonstrated to be otherwise. All drainage from bunded areas shall be diverted for collection and safe disposal, unless it can be deemed uncontaminated and does not exceed the trigger levels set for storm water emissions under Condition 6.12.

3.7.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.

3.7.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.

3.7.6 All bunds shall be uniquely identified and labelled at the bund.

3.7.7 The licensee shall apply a leak detection system in accordance with BAT to all storage tanks, container and drum storage areas that contain liquid material other than water.

3.8 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the installation. Once used, the absorbent material shall be disposed of at an appropriate facility.

3.9 Fire-water Retention

In the event of a fire or a spillage to storm water, storm water draining to the WWTP shall be automatically diverted to the effluent treatment system's temporary storage tanks. The licensee shall have regard to any guidelines issued by the Agency with regard to firewater retention.

3.10 All pump sumps, storage tanks, lagoons or other treatment plant chambers from which spillage of environmentally significant materials might occur in such quantities as are likely to breach local or remote containment or separators, shall be fitted with high liquid level alarms (or oil detectors as appropriate) from the date of grant of this licence.

3.11 The catchment system to collect any leaks from flanges and valves of all over-ground pipes used to transport material other than water shall be maintained.

3.12 Tank and pipeline inspection

(i) The licensee shall maintain a programme of systematic inspection and preventative maintenance of tanks and pipelines to a documented procedure to the satisfaction of the Agency. A report on such tests shall be included in the AER.

(ii) The licensee shall biennially review its tank and pipeline inspection procedures against international best practice, and submit a report, with recommendations, to the Agency for agreement as part of the Annual Environmental Report (AER).

3.13 All wellheads shall be adequately protected to prevent contamination or physical damage.

3.14 The licensee shall either:

(i) operate a weather monitoring station on the site at a location agreed by the Agency, which records conditions of wind speed and wind direction, or

(ii) obtain and retain the Roche's Point wind speed and wind direction data from the Meteorological Service.

3.15 The licensee shall provide and maintain a Wastewater Treatment plant at the installation for the treatment of sanitary effluent arising on-site. The waste water treatment system for this effluent shall satisfy the criteria set out in the *Wastewater Treatment Manuals - Treatment Systems for Small Communities, Business, Leisure Centres and Hotels (p.e. 10 - 500)*, published by the Environmental Protection Agency.

3.16 Water used for hydrostatic testing of tank integrity, or ship's ballast water, is permitted to be discharged through emission point SW-2 only on demonstration to the satisfaction of the Agency that these waters are uncontaminated.

***Reason:*** ***To provide for appropriate operation of the installation to ensure protection of the environment.***

# Condition 4. Interpretation

4.1 Emission limit values for emissions to atmosphere in this licence shall be interpreted in the following way:

4.1.1 Continuous Monitoring (except for total emission limit value)

(i) No 24 hour mean value shall exceed the emission limit value.

(ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.

(iii) No 30 minute mean value shall exceed twice the emission limit value.

4.1.2 Non-Continuous Monitoring

(i) For any parameter where, due to sampling/analytical limitations, a 30 minute sample is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.

(ii) For flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the relevant limit value.

(iii) For all other parameters, no 30 minute mean value shall exceed the emission limit value. The 30 minute mean is the average value of three spot samples of at least 30 minutes each.

4.1.3 Mass flow emissions shall be calculated on the basis of the concentration, determined as an average over the specified period, multiplied by an appropriate measurement of flow. No value, so determined, shall exceed the mass flow limit value.

4.1.4 For total emission limit value under *Schedule B.1.2 Combustion units using refinery fuel gas (RFG); Integrated Emissions Management,* of this licence

(i) The weighted monthly average concentration across all of the units concerned shall be less than or equal to the total emission limit value.

(ii) For continuous monitoring, the total emission limit value refers to the monthly average values, which is the averages of all valid hourly average values measured over a period of one month.

(iii) The weighted monthly average concentration across all of the units concerned shall be calculated in accordance with the formula set out in BAT No. 57 of the Commission Implementing Decision of 2014/738/EU establishing Best Available Techniques (BAT) Conclusions, under Directive 2010/75/EU of the European Parliament and of the Council on Industrial Emissions, for the for the refining of mineral oil and gas.

4.2 The concentration and volume flow limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of:

4.2.1 From non-combustion sources:

Temperature 273K, Pressure 101.3 kPa (no correction for oxygen or water content).

4.2.2 From combustion sources:

Temperature 273K, Pressure 101.3 kPa, dry gas; 3% oxygen for liquid and gas fuels, 6% oxygen for solid fuels; 15% oxygen for gas turbines and compression ignition engines.

4.3 Emission limit values for emissions to waters in this licence shall be achieved without the introduction of aqueous dilution, and shall be interpreted in the following way:

4.3.1 Continuous Monitoring

(i) No flow value shall exceed the specific limit.

(ii) No pH value shall deviate from the specified range.

(iii) No temperature value shall exceed the limit value.

4.3.2 Composite Sampling

(i) No pH value shall deviate from the specified range.

(ii) For parameters other than pH and flow, eight out of ten consecutive composite results, based on flow proportional composite sampling, shall not exceed the daily average emission limit value. No individual results similarly calculated shall exceed 1.2 times the daily average emission limit value.

(iii) The average of all daily averages obtained within a year, weighted according to daily flows, shall not exceed the yearly average emission limit value.

4.3.3 Discrete Sampling

For parameters other than pH and temperature, no grab sample value shall exceed 1.2 times the emission limit value.

4.3.4 Mass flow emissions shall be calculated on the basis of the daily average concentration, multiplied by the daily flow associated with the sample. No value, so determined, shall exceed the mass flow limit value.

4.4 Where the ability to measure a parameter is affected by mixing before emission, then, with agreement from the Agency, the parameter may be assessed before mixing takes place.

4.5 Noise

Noise from the installation shall not give rise to sound pressure levels ($L_{Aeq, T}$) measured at NSLs of the installation which exceed the limit value(s).

***Reason:*** ***To clarify the interpretation of limit values fixed under the licence.***

# Condition 5. Emissions

5.1 No specified emission from the installation shall exceed the emission limit values set out in *Schedule B: Emissions, Monitoring and Control,* of this licence. There shall be no other emissions of environmental significance.

5.2 No emissions, including odours, from the activities carried on at the site shall result in an impairment of, or an interference with amenities or the environment beyond the installation boundary or any other legitimate uses of the environment beyond the installation boundary.

5.3 No substance shall be discharged in a manner, or at a concentration, that, following initial dilution, causes tainting of fish or shellfish.

5.4 The road loading terminal shall be operated in accordance with the permit issued by the Agency under S.I. 374 of 1997(Control of volatile organic compounds emissions resulting from the storage of petrol and its distribution).

5.5 The total emission of sulphur dioxide (as $SO_2$) to atmosphere from scheduled emission points (as detailed in *Schedule B.1 Emissions to Air*, of this licence) at the installation shall not exceed:

a) 150 kg/h when the ASA plant is operational and natural gas is in use as supplementary fuel;

b) 370 kg/hr when the ASA plant is not operational.

5.6 Scheduled downtime for the ASA plant shall not exceed two weeks duration in any two year calendar period. During scheduled downtime low sulphur crudes only shall be processed at the installation.

5.7 The licensee shall calculate the total emissions of oxides of nitrogen to air from the site in kg/h as $NO_2$ for each source (as agreed by the Agency) and the information shall be submitted to the Agency quarterly as an itemised and totalled list.

5.8 When the ASA plant is not operational, the licensee shall operate the ambient monitoring programme for sulphur dioxide and nitrogen oxides at the south-eastern boundary of the site as set out in the IPC licence application, Reg. No. P0266-01.

5.9 The licensee shall operate the installation to ensure that the performance rates set out in *Schedule B: Emissions, Monitoring and Control*, of this licence are achieved.

***Reason:*** ***To provide for the protection of the environment by way of control and limitation of emissions.***

# Condition 6. Control and Monitoring

6.1 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out below and as in accordance with *Schedule B: Emissions, Monitoring and Control,* of this licence.

6.1.1 Sampling and analysis shall be undertaken by competent staff in accordance with documented operating procedures. Unless otherwise approved by the Agency, sampling and analysis of emissions to atmosphere shall be carried out by ISO 17025 accredited persons/organisations, with accreditation for the relevant scope of sampling and analysis.

6.1.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics shall be determined.

6.1.3 Such procedures shall be subject to a programme of Analytical Quality Control using appropriate control standards with evaluation of test responses.

6.1.4 Where any analysis is sub-contracted it shall be outsourced to a competent laboratory.

6.2 The licensee shall ensure that:

(i) sampling and analysis for all parameters listed in the Schedules to this licence; and

(ii) any reference measurements for the calibration of automated measurement systems;

shall be carried out in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards that will ensure the provision of data of an equivalent scientific quality shall apply.

6.3 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been agreed in writing by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. The use of alternative equipment, other than in emergency situations, shall be as agreed by the Agency.

6.4 Monitoring and analysis equipment shall be installed, operated and maintained as necessary so that all monitoring accurately reflects the emission/discharge.

6.5 The licensee shall ensure that groundwater monitoring well sampling equipment is available or installed on-site at the installation and is fit for purpose at all times. The sampling equipment shall be to Agency specifications.

6.6 All treatment/abatement and emission control equipment shall be calibrated and maintained in accordance with the instructions issued by the manufacturer/supplier or installer.

6.7 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended as required or approved by the Agency following evaluation of test results.

6.8 The integrity and water tightness of all tanks, bunding structures, containers and underground pipes and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee. This testing shall be carried out by the licensee at least once every three years and reported to the Agency on each occasion. This testing shall be carried out in accordance with any guidance published by the Agency. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.

6.9 The drainage system (i.e., gullies, manholes, any visible drainage conduits and such other aspects as may be agreed) bunds, silt traps and oil separators shall be inspected in accordance with a programme agreed by the Agency, and desludged as necessary and shall be properly maintained at all times.

6.10 Process Effluent

6.10.1 The acute toxicity of the undiluted final effluent to at least four aquatic species from different trophic levels shall be determined by standardised and internationally accepted procedures and carried out by a competent laboratory.

6.10.2 Having identified the most sensitive species outlined in Condition 6.10.1, subsequent compliance toxicity monitoring shall be carried out on the two most sensitive species.

6.10.3 A representative sample of effluent shall be screened annually for the presence of organic compounds.

6.11 An inspection system for the detection of leaks on all flanges and valves on over-ground pipes used to transport materials other than water shall be developed and maintained prior to the commencement of the activity.

6.12 Storm Water

6.12.1 A visual examination of the storm water discharges shall be carried out daily. A log of such inspections, shall be maintained.

6.12.2 The licensee shall, within six months of commencement of the activity, establish suitable trigger levels for pH, COD, conductivity and total petroleum hydrocarbons in storm water discharges, such that storm waters exceeding these levels will be diverted for retention and suitable disposal. The licensee shall have regard to the Environmental Protection Agency "Guidance on the setting of trigger values for storm water discharges to off-site surface waters at EPA IPPC and Waste licensed facilities" when establishing the suitable trigger levels.

6.13 Pollutant Release and Transfer Register (PRTR)

The licensee shall prepare and report a PRTR for the site. The substance and/or wastes to be included in the PRTR shall be determined by reference to EC Regulations No. 166/2006 concerning the establishment of the European Pollutant Release and Transfer Register. The PRTR shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted electronically in specified format and as part of the AER.

6.14 The licensee shall maintain a Data Management System for collation, archiving, assessing and graphically presenting the monitoring data generated as a result of this licence.

6.15 Any segregated ballast water shall be managed in accordance with the requirements of the Port of Cork and the Department of Transport.

6.16 The licensee shall calculate the total sulphur dioxide emissions to air from the site in kg/h as $SO_2$ for each source (as agreed by the Agency) and the information shall be submitted to the Agency quarterly as an itemised and totalised list. The licensee shall separately summate sulphur dioxide mass emissions for each of the three scenarios specified in Condition 5.5, such that compliance with the relevant limits can be assessed.

6.17 A record of the operation times of the ASA plant, and the supplementary fuel used during ASA plant downtime, shall be maintained by the licensee and reported to the Agency annually as part of the AER. Any exceedance of permitted ASA plant downtime shall be reported to the Agency as an incident.

6.18 Soil Monitoring

The licensee shall carry out monitoring for relevant hazardous substances in soil and groundwater at the site of the installation. The substances for monitoring shall be identified by the licensee by undertaking a risk based assessment. The risk assessment, sampling and monitoring shall be carried out in accordance with any guidance published by the Agency. The licensee shall have regard to the 'Classification of Hazardous and Non-Hazardous Substances in Groundwater' as published by the Agency.

6.19 The licensee shall implement the control and monitoring techniques set out in *Schedule B: Emissions, Monitoring and Control*, of this licence. The techniques in any other relevant BAT Conclusions may be used, with the prior approval of the Agency.

6.20 From the 1st July 2019, the licensee shall have conducted a dispersion model assessment of emissions to air from the installation in accordance with the EPA (2010) Air Dispersion Modelling from Industrial Installations Guidance Note (AG 4) and submitted a report to the Agency.

***Reason:*** ***To provide for the protection of the environment by way of treatment and monitoring of emissions.***

# Condition 7. Resource Use and Energy Efficiency

7.1 The licensee shall carry out an audit of the energy efficiency of the site annually. The audit shall be carried out in accordance with the guidance published by the Agency, "Guidance Note on Energy Efficiency Auditing".

7.2 The audit shall identify all practicable opportunities for energy use reduction and efficiency and the recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2 above.

7.3 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into Schedule of Environmental Objectives and Targets.

7.4 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

7.5 The licensee shall implement the energy efficiency techniques set out in *Schedule C.1: Use Energy Efficiently* of this licence.

***Reason:*** ***To provide for the efficient use of resources and energy in all site operations.***

# Condition 8. Materials Handling

8.1 The licensee shall ensure that waste generated in the carrying on of the activity shall be prepared for re-use, recycling or recovery or, where that is not technically or economically possible, disposed of in a manner which will prevent or minimise any impact on the environment.

8.2 Disposal or recovery of waste on-site shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.

8.3 Waste sent off-site for recovery or disposal

8.3.1 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor. The waste shall be transported from the site of the activity to the site of recovery/disposal only in a manner that will not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols.

8.3.2 Waste sent off-site for recovery or disposal shall be transferred only to an appropriate facility.

8.4 The licensee shall ensure that, in advance of transfer to another person, waste shall be classified, packaged and labelled in accordance with National, European and any other standards which are in force in relation to such labelling.

8.5 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run-off.

8.6 Waste and materials shall be stored in designated areas, protected as may be appropriate against spillage and leachate run-off. The waste and materials shall be clearly labelled and appropriately segregated.

8.7 Waste for disposal/recovery off-site shall be analysed in accordance with *Schedule C.2: Waste Generation,* of this licence.

8.8 Unless approved in writing, in advance, by the Agency the licensee is prohibited from mixing a hazardous waste of one category with a hazardous waste of another category or with any other non-hazardous waste.

8.9 The licensee shall neither import waste into the State nor export waste out of the State except in accordance with the relevant provisions of Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14th June 2006 on shipments of waste and associated national regulations.

8.10 The licensee shall implement the control techniques for the reduction of waste, set out in *Schedule C.2: Waste Generation* of this licence.

***Reason:*** ***To provide for the appropriate handling of material and the protection of the environment.***

# Condition 9. Accident Prevention and Emergency Response

9.1 The licensee shall ensure that a documented Accident Prevention Procedure is in place that addresses the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.

9.2 The licensee shall ensure that a documented Emergency Response Procedure is in place, that addresses any emergency situation which may originate on-site. This procedure shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary.

9.3 The licensee shall maintain its Oil Spill Contingency Plan as submitted in IPC licence application P0266-01, attachment 20, and as updated subsequently by agreement with the Agency.

9.4 The licensee shall maintain and implement the control techniques for the prevention of incidents and accidents as set out in *Schedule C.3: Accident Prevention* of this licence.

9.5 Incidents

9.5.1 In the event of an incident the licensee shall immediately:

(i) carry out an investigation to identify the nature, source and cause of the incident and any emission arising therefrom;

(ii) isolate the source of any such emission;

(iii) evaluate the environmental pollution, if any, caused by the incident;

(iv) identify and execute measures to minimise the emissions/malfunction and the effects thereof;

(v) identify the date, time and place of the incident;

(vi) notify the Agency as required by Condition 11.1 of this licence.

9.5.2 Where an incident or accident that significantly affects the environment occurs, the licensee shall, without delay take measures to limit the environmental consequences of the incident or accident and to prevent further incident or accident.

9.5.3 The licensee shall provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency, to:

(i) identify and put in place measures to avoid recurrence of the incident; and

(ii) identify and put in place any other appropriate remedial actions.

***Reason:*** ***To provide for the protection of the environment.***

# Condition 10. Closure, Restoration and Aftercare Management

10.1 Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, the licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery any soil, subsoil, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution. A final validation report to include a certificate of completion to demonstrate there is no continuing risk to the environment shall be submitted to the Agency within three months of termination or planned cessation of the activity.

10.2 Closure, Restoration and Aftercare Management Plan (CRAMP)

10.2.1 The licensee shall maintain, to the satisfaction of the Agency, a fully detailed and costed plan for the closure, restoration and long-term aftercare of the site or part thereof.

10.2.2 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the agreement of the Agency.

10.2.3 The licensee shall have regard to the Environmental Protection Agency's Guidance on Assessing and Costing Environmental Liabilities (2014) and Guidance on Financial Provision (2015), when implementing Condition 10.2.1 above.

10.3 The Closure, Restoration and Aftercare Management Plan (CRAMP) shall include, as a minimum, the following:

(i) a scope statement for the plan;

(ii) the criteria that define the successful closure and restoration and aftercare of the activity or part thereof, which ensures minimum impact on the environment;

(iii) a programme to achieve the stated criteria;

(iv) where relevant, a test programme to demonstrate the successful implementation of the plan;

(v) details of the long term supervision, monitoring, control, maintenance and reporting requirements for the restored facility; and

(vi) details of the costings for the plan and the financial provisions to underwrite those costs.

***Reason:*** ***To make provision for the proper closure of the activity ensuring protection of the environment.***

# Condition 11. Notification, Records and Reports

11.1 The licensee shall notify the Agency by both telephone and either email or webform, to the Agency's headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:

(i) an incident or accident as defined by the glossary;

(ii) any release of environmental significance to atmosphere from any potential emissions point including bypasses;

(iii) any breach of one or more of the conditions attached to this licence;

(iv) any malfunction or breakdown of key environmental abatement, control or monitoring equipment; and

(v) any incident or accident as defined in the glossary requiring an emergency response by the Local Authority.

The licensee shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any emissions. All details required to be communicated must be in accordance with any Guidance provided by the Agency.

11.2 The following shall be notified, as soon as practicable after the occurrence of any incident which relates to a discharge to water:

(i) Department of Agriculture, Food and the Marine in the case of discharges to receiving waters.

(ii) Marine Institute (MI), Sea Fisheries Protection Authority (SFPA), Food Safety Authority of Ireland (FSAI) and an Bord Iascaigh Mhara (BIM) in the case of discharges to or likely to impact a shellfish water.

(iii) The local authority, in the case of discharges to designated bathing waters.

11.3 The licensee shall make a record of any notification made under Condition 11.1. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident or accident. The record shall include all corrective actions taken to manage the incident or accident, minimise wastes generated and the effect on the environment, and avoid recurrence. In the case of a breach of a condition, the record shall include measures to restore compliance.

11.4 The licensee shall record all complaints of an environmental nature related to the operation of the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant (if provided), and give details of the nature of the complaint. A record shall also be kept of the response made in the case of each complaint.

11.5 The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the installation.

11.6 The licensee shall as a minimum ensure that the following documents are accessible at the site:

(i) the licences relating to the installation;

(ii) the current EMS for the installation including all associated procedures, reports, records and other documents;

(iii) the previous year's AER for the installation;

(iv) records of all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the installation;

(v) relevant correspondence with the Agency;

(vi) up-to-date site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points;

(vii) up-to-date Standard Operational Procedures for all processes, plant and equipment necessary to give effect to this licence or otherwise to ensure that standard operation of such processes, plant or equipment does not result in unauthorised emissions to the environment; and

(viii) any elements of the licence application or EIS documentation referenced in this licence.

This documentation shall be available to the Agency for inspection at all reasonable times.

11.7 The licensee shall submit to the Agency, by the 31st March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in *Schedule D: Annual Environmental Report*, of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.

11.8 A full record, which shall be open to inspection by authorised persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall be as a minimum contain details of the following:

(i) the tonnages and EWC Code for the waste materials sent off-site for disposal/recovery;

(ii) the names of the agent and carrier of the waste, and their waste collection permit details, if required (to include issuing authority and vehicle registration number);

(iii) details of the ultimate disposal/recovery destination facility for the waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required;

(iv) written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site;

(v) details of all waste consigned abroad for Recovery and classified as 'Green' in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended). The rationale for the classification must form part of the record;

(vi) details of any rejected consignments;

(vii) details of any approved waste mixing;

(viii) the results of any waste analyses required under *Schedule C: Energy, Waste and Accident Prevention*, of this licence; and

(ix) the tonnage and EWC Code for the waste materials recovered/disposed on-site.

11.9 The licensee shall submit report(s) as required by the conditions of this licence to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency.

11.10 All reports shall be certified accurate and representative by the installation manager or a nominated, suitably qualified and experienced deputy.

***Reason:*** ***To provide for the collection and reporting of adequate information on the activity.***

# Condition 12. Financial Charges and Provisions

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €27,875, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Environmental Protection Agency Act 1992 as amended. The first payment shall be a pro-rata amount for the period from the date of grant of this licence to the 31st day of December, and shall be paid to the Agency within one month from the date of grant of the licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Environmental Protection Agency Act 1992 as amended, and all such payments shall be made within one month of the date upon which demanded by the Agency.

12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased, the licensee shall contribute such sums as determined by the Agency to defray its costs in regard to items not covered by the said annual contribution.

12.2 Environmental Liabilities

12.2.1 The licensee shall as part of the AER, provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and the financial provisions in place, as appropriate in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with the carrying on of the activity.

12.2.2 The licensee shall maintain, to the satisfaction of the Agency, a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) which addresses the liabilities from past and present activities. The assessment shall include those liabilities and costs identified in Condition 10 for execution of the CRAMP. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement. Review results are to be notified as part of the AER.

12.2.3 The licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities associated with the operation (including closure, restoration and aftercare). The amount of financial provision held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.2.1.

12.2.4 The licensee shall revise the cost of closure, restoration and aftercare annually and any adjustments shall be reflected in the financial provision made under Condition 12.2.3.

12.2.5 The licensee shall have regard to the Environmental Protection Agency's Guidance on Assessing and Costing Environmental Liabilities (2014) and Guidance on Financial Provision (2015) and the baseline report when implementing Conditions 12.2.2, 12.2.3 and 12.2.4 above.

***Reason:*** ***To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.***

# SCHEDULE A: Limitations

There are no limitations on the installation specified in the Schedule

# SCHEDULE B: Emissions, Monitoring and Control

## *B.1 Emissions to Air*

### *B.1.1 Combustion units using natural gas*

| Emission Point Reference No: | A1-1 | A1-2 (boiler mode) Note 1 | A1-3 |
|---|---|---|---|
| Location: | SG-4: Boiler No. 4 | SG-5 Boiler No. 5 | SG-6 Boiler No. 6 |
| Volume to be emitted (Maximum rate per hour): | 13,400 $m^3$ | 17,500 $m^3$ | 27,000 $m^3$ |
| Minimum discharges height above ground: | 30 m | 30 m | 40 m |

| Parameter | Emission Limit Value | Monitoring | |
|---|---|---|---|
| | ($mg/m^3$) | Frequency | Analysis Method/Technique |
| Oxides of sulphur (as $SO_2$) | 35 | Annually | Standard Method |
| Nitrogen oxides (as $NO_2$) | 200 Note 2 | Annually | Standard Method |
| Carbon Monoxide | 20 | Annually | Standard Method |

Note 1: Gasoil may be used during start-up.
Note 2: The emission limit value shall be 450 $mg/m^3$ until 1st January 2025.

**Emission Point Reference No.s:** A2-12 C-201A Recycle gas compressor
A2-13 C-201B Recycle gas compressor
A2-14 C-202 Regen gas compressor

| Parameter | Emission Limit Value | Monitoring | |
|---|---|---|---|
| | ($mg/m^3$) | Frequency | Analysis Method/Technique |
| Nitrogen oxides (as $NO_2$) | 190 Note 1 | Every three years | Standard Method |
| | | Quarterly | Indirect monitoring, by calculation |
| Carbon Monoxide | -- | Every three years | Standard Method |

Note 1: The emission limit value shall be 27 kg/hr (for all three emission points combined) until 1st January 2030.

### *B.1.2 Combustion units using refinery fuel gas (RFG)*

**Emission point reference number:** A1-2 (CHP mode)

| | | |
|---|---|---|
| **Emission point location:** | CHP / SG-5 boiler | |
| **Volume to be emitted (Maximum rate per hour):** | Maximum rate per hour: | 82,700 $m^3$ |
| **Minimum discharge height:** | 30 m above ground | |

| Parameter | Emission Limit Value | Monitoring | |
|---|---|---|---|
| | ($mg/m^3$) | Frequency | Analysis Method/Technique |
| **Nitrogen oxides (as $NO_2$)** | 450 | Continuously<br>Annually | Indirect monitoring<br>Standard Method |
| **Oxides of sulphur (as $SO_2$)** | 35 | Continuously<br>Annually | Indirect monitoring<br>Standard Method |
| **Carbon Monoxide** | 100 | Biannually | Standard Method |
| **Dust** | -- | Annually Note 1 | Standard method |

**Note 1:** Monitoring shall be annually from 1st October 2019.

**Emission point reference number:**

A2-1 F-401 Furnace Stack
A2-2 F-402 Furnace Stack
A2-3 F-501 Furnace Stack (hydrotreater)
A2-4 F-204 Powerformer stabiliser reboiler heater
A2-5 F-201 Powerformer pre-heat heater
A2-6 F-202Bx/Cx Powerformer re-heat heater
A2-7 F-202 AN Powerformer pre-heat heater
A2-8 F-206/207 Naphtha Hydrofiner/Debutaniser reboiler heater
A2-9 F-203: Powerformer Regen heater.
A2-10 F-801/802 Hydrotreater preheat heater
A2-11 F-901 Furnace Stack

| Parameter | Emission Limit Value | Monitoring | |
|---|---|---|---|
| | ($mg/m^3$) | Frequency | Analysis Method/Technique |
| **Nitrogen oxides (as $NO_2$)** | 450 | Annually | Standard Method |
| **Oxides of sulphur (as $SO_2$)** | 35 | Annually | Standard Method |
| **Carbon Monoxide** | 100 | Biannually | Standard Method |
| **Dust** | -- | Annually Note 1 | Standard method |
| **Polychlorinated dibenzodioxins (PCDD/F)** | -- | Annually Note 1 | Standard method |

Note 1: Monitoring shall be annually from 1st October 2019.

## *Integrated emissions management*

| Emission point reference number | Parameter | Total Emission Limit Value | Monitoring | | | |
|---|---|---|---|---|---|---|
| | | ($mg/m^3$) | Averaging period | Frequency | Analysis Method/ Technique | Record format |
| **A1-2 (CHP mode)**<br>**A2-1 F-401 Furnace Stack**<br>**A2-2 F-402 Furnace Stack**<br>**A2-3 F-501 Furnace Stack (hydrotreater)**<br>**A2-4 F-204 Powerformer stabiliser reboiler heater**<br>**A2-5 F-201 Powerformer pre-heat heater**<br>**A2-6 F-202Bx/Cx Powerformer re-heat heater**<br>**A2-7 F-202 AN Powerformer pre-heat heater**<br>**A2-8 F-206/207 Naphtha Hydrofiner/Debutaniser reboiler heater** | **Nitrogen oxides (as $NO_2$)** | 146 Note 1 | Monthly average of hourly values | Continuously | Indirect | Average emission concentration for each unit ($mg/m^3$, all monthly averages during a year)<br>Average emission concentration across all units ($mg/m^3$, all monthly averages during a year)<br>Total monthly emission across all units concerned (tonnes/ month) |
| **A2-9 F-203: Powerformer Regen heater.**<br>**A2-10 F-801/802 Hydrotreater preheat heater**<br>**A2-11 F-901 Furnace Stack** | **Flue gas flow rate** | – | | Continuously | Indirect | $m^3$/hour, all monthly averages during a year |

Note 1: The emission limit value applies across all combustion units using RFG as listed under the first column.

## *Control monitoring for each combustion unit using RFG*

| Control Parameter | Monitoring |
|---|---|
| **$O_2$ content** | Continuously |
| **CO** | Continuously |
| **S and N content in fuel** | Annually and upon significant fuel change |

### *Control & Monitoring Techniques for combustion units using RFG*

| Process | Control or Monitoring Technique |
|---|---|
| **All combustion units using RFG** | Use natural gas or refinery fuel gas. |
| | Optimise combustion by using automated control technology and trained operators. |
| **All combustion units except for emission point reference A2-5 F-201 Powerformer pre-heat heater** | Use air or fuel staging combustion. |
| | Use low NOx burners. |
| **Emission point reference A2-10 F-801/802 Hydrotreater preheat heater** | Use flue gas recirculation. |
| **For catalytic reformer unit** | Use per-chloro-ethylene as a catalyst promoter and route off gases to the chloride guard drum prior to the refinery fuel gas system. |
| **For isomerization unit** | Optimise per-chloro-ethylene use by monitoring caustic activity of the caustic scrubber daily and maintaining the molar ratio needed. |
| **Indirect monitoring** | Maintain and implement a methodology to the satisfaction of the Agency. |

### *B.1.3 Amine and Sulphuric acid plant (ASA plant) – acid gas removal and sulphur recovery*

**Emission point reference number:** A2-18

| | |
|---|---|
| **Emission point location:** | ASA plant |
| **Minimum discharge height:** | 30 m above ground |
| **Volume to be emitted:** | Maximum in any one day: 16,300 $m^3$ |

| Parameter | Emission Limit Value | Monitoring | |
|---|---|---|---|
| | ($mg/m^3$) | Frequency | Analysis Method/Technique |
| **Ammonia (as $NH_3$)** | 10 | Quarterly | Direct measurement |
| **Oxides of sulphur (as $SO_2$)** | 260 | Continuously | Indirect monitoring by sulphur mass balance |
| | | Annually | Standard Method |
| **Nitrogen Oxides (as $NO_2$)** | 165 | Annually | Standard Method |
| | **Performance rate** | **Frequency** | **Analysis Method/Technique** |
| **Sulphur recovery efficiency** Note 1 | ≥ 99% | Annually | Plant performance test |

Note 1: Sulphur recovery efficiency is calculated over the whole treatment chain as the fraction of sulphur in the feed that is recovered in the sulphuric acid by-product.

## *Control monitoring*

| Control Parameter | Monitoring | Key Equipment [Note 1] |
|---|---|---|
| **NOx** | Acid product quality indicates catalyst condition. | N/A. |
| **Acid mist** | Continuous opacity monitoring | Acid mist control unit |

**Note 1:** The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

## *Control & Monitoring Techniques to prevent or reduce Emissions to Air*

| Process | Control or Monitoring Technique |
|---|---|
| **Refinery fuel gas system and off-gases from processes** | Treat refinery fuel gas and off-gases from the distillation process and from the hydrotreatment process in the ASA plant to remove acid gases by amine treatment. |
| | Meet gas firing ELV of 35 mg/m$^3$ $SO_2$. |
| **Acid off-gases** | Route acid off-gases from sour water steam stripping unit to the Wet Sulphuric Acid section of the ASA plant. |
| | Recover Sulphur by conversion to commercial grade sulphuric acid in the Amine & Sulphuric Acid plant. |
| **ASA plant** | Reduce $NO_x$ emissions by Selective Catalytic Reduction (SCR). |
| | Maintain suitable SCR operating conditions. |
| | Abate acid mist with a control unit. |
| **Indirect monitoring** | Maintain and implement a methodology to the satisfaction of the Agency. |

## *B.1.4 VOC Emissions*

### *B.1.4.a Diffuse VOC emissions*

### *Control & Monitoring Techniques to prevent or reduce VOC Emissions to Air*

**Monitoring Locations (as appropriate):** to be agreed by the Agency.

| Parameter | Monitoring | |
|---|---|---|
| | Frequency | Method |
| VOC | Annually | (i) Sniffing methods associated with correlation curves for key equipment;<br>(ii) Optical gas imaging techniques;<br>(iii) Calculations of chronic emissions based on emission factors periodically (once every two years) validated by measurements. |

| Process | Control Technique |
|---|---|
| Whole installation | From 26th October 2018, the licensee shall maintain and implement a risk based leak detection and repair programme (LDAR). |
| Storage of volatile liquid hydrocarbon compounds except tanks reference TK-I-1 (Naphtha) and TK-U-9 (crude slops) | Use floating roof storage tanks equipped with high efficiency seals. |
| TK-I-1 (Naphtha) and TK-U-9 (crude slops) tanks | From the 1st October 2019, tanks TK-I-1 and TK-U-9 shall be fitted with an internal floating roof equipped with high efficiency seals or a vapour treatment unit. |
| Storage of volatile liquid hydrocarbon compound | Implement a maintenance programme that includes manual crude oil tank cleaning and closed-loop cleaning system. |
| Bulk tank farm | Maintain the grey paint on the aboveground atmospheric tanks used for the storage of liquid petroleum derivatives. |
| | Apply dedicated systems. |
| Fixed roof tanks storing MDFI and kerosene marker | From the 1st January 2023, a pressure relief valve set at the highest value consistent with the tank design criteria shall be fitted to the MDFI and Kerosene marker tanks. |

### *B.1.4.b VOC emissions from loading operations*

**Emission point reference number:** Vapour recovery unit

| Parameter | Emission Limit Value | Monitoring | | |
|---|---|---|---|---|
| | ($mg/m^3$) | Sample period | Frequency | Analysis Method/Technique |
| **NMVOC** | 10 $g/m^3$ | 5 mins over 1 hour | Quarterly | Standard method |
| | | Hourly over 8 hours | Every three years | Standard method |
| **Benzene** | < 1 $mg/Nm^3$ | 1 hour | Quarterly | Standard method |
| | **Performance rate** | | **Frequency** | **Analysis Method/Technique** |
| **VOC recovery rate** Note 1 | ≥ 95% | -- | Annually | Plant performance test |

**Note 1:** Percentage of NMVOC recovered from the streams conveyed into a vapour recovery unit.

### *Control Techniques to prevent or reduce VOC Emissions to Air*

| Process | Control Technique |
|---|---|
| **Road loading operation of volatile liquid hydrocarbon compounds** | Vapour recovery by absorption unit |

### *B.1.5 Emissions from Flares*

### *Control and Monitoring Techniques to prevent or reduce Emissions to Air*

| Control Parameter | Monitoring |
|---|---|
| **Gas flow to flares** | Continuously |
| **Estimation of emissions** | Per Flare event |

| Process | Control Technique |
|---|---|
| **Flaring** | Use flaring only for safety reasons or for non-routine operational conditions. |
| | Reduce flaring events by balancing the RFG system and using advance process control. |
| | A report on the operation of the flare shall be submitted to the Agency quarterly. |

### *B.1.6 Monitoring and Control of Odour Emissions from relevant sources*

**Monitoring Locations:** to be agreed by the Agency.

| Parameter | Monitoring | |
|---|---|---|
| | Frequency | Analysis Method/Technique |
| Odour emissions | Quarterly | EN 13725 |

| Process | Control Technique |
|---|---|
| Relevant sources | From 26th October 2018, the licensee shall maintain and implement an Odour Management Plan. |

## *B.2 Emissions to Water*

***Emission point reference number:*** SW-1

| | |
|---|---|
| **Emission point location:** | Corkbeg |
| **Name of receiving waters:** | Cork Harbour |

| **Parameter** | **Emission Limit Value** | | | **Monitoring** [Note 1] | |
|---|---|---|---|---|---|
| | | | | **Frequency** | **Analysis Method** |
| **Volume** | 12,000 $m^3$/day | 500 $m^3$/ hour | | Continuously Daily [Note 2] | On-line flow meter with recorder |
| **pH** | 6 – 9 | | | Continuously | pH electrode/meter with recorder |
| **Toxicity** [Note 3] | 20 TU | | | Annually | To be agreed by the Agency |
| | **Daily average mg/l** | **kg/day** | **Yearly average mg/l** | **Frequency** | **Analysis Method** |
| **BOD** | 150 | 360 | -- | Weekly | Standard method |
| **COD** [Note 4] | 265 | 636 | 125 | Daily | Standard method |
| **Total Suspended Solids** | 50 | 120 | 25 | Daily | EN 872 |
| **Total Dissolved Solids** | -- | -- | -- | Monthly | Standard method |
| **Total Nitrogen (as N)** | 25 | 60 | 25 | Daily | EN 12260 |
| **Ammonia (as N)** | 15 | 36 | -- | Monthly | Standard method |
| **Total Phosphorus (as P)** | 2 | 4.8 | -- | Monthly | Standard method |
| **Phenols** | 1 | 2.4 | -- | Monthly | EN14402 |
| **Benzene** | -- | -- | 0.050 | Monthly | Standard method |
| **Hydrocarbon oil index (HOI)** | 20 | 48 | 2.5 | Daily | EN9377-2 |
| **Benzene, toluene, ethyl benzene, xylene (BTEX)** | -- | -- | -- | Monthly | Standard method |
| **Mercury** | 0.001 | 0.0024 | 0.001 | Quarterly | Standard method |
| **Lead** | -- | -- | 0.0175 | Quarterly | Standard method |
| **Cadmium** | 0.01 | 0.024 | 0.005 | Quarterly | Standard method |
| **Copper** | 0.3 | 0.72 | 0.05 | Quarterly | Standard method |
| **Zinc** | 0.5 | 1.2 | 0.3 | Quarterly | Standard method |
| **Nickel** | 0.1 | 0.24 | 0.1 | Quarterly | Standard method |
| **Vanadium** | -- | -- | -- | Quarterly | Standard method |
| **Visual inspection** | -- | -- | -- | Daily | Sample and examine for surface film colouration and odour |

**Note 1:** All samples shall be collected on a 24 hour flow proportional composite sampling basis.
**Note 2:** Total effluent discharged over the 24 hour period in which the composite sample is collected shall be recorded.

**Note 3:** The number of toxic units (Tu) = 100/x hour $EC/LC_{50}$ in percentage vol/vol so that higher Tu values reflect greater levels of toxicity. For test regimes where species death is not easily detected, immobilisation is considered equivalent to death.

**Note 4:** COD may be replaced by TOC where on-site correlation between COD and TOC is demonstrated to the satisfaction of the Agency.

## *Control monitoring of waste water treatment plant*

| Control Parameter | Monitoring | Key Equipment [Note 1] |
|---|---|---|
| **Effluent balancing, Oil-water separator level** | Continuous | Balance tanks |
| **Effluent Transfer** | Continuous flow | Transfer pumps |
| **Dissolved air flotation outfall appearance** | Daily | Coagulant and flocculant addition pumps.<br>Air blowers. |
| **DAF sludge removal** | Continuous | DAF sludge scraper<br>DAF sludge tanks |
| **Equalisation basins pH** | Continuous | Caustic dosing pumps |
| **Mixed bed biofilm reactors ( A and B) dissolved oxygen** | Continuous | Air Blowers |
| **Sludge dewatering** | Daily | Wet sludge transfer pumps<br>Bio sludge belt press |
| **Suspended Solids (primary)** | Daily | Clarifier |
| **Suspended Solids (secondary)** | Daily | Bio wet sludge tank |
| **Outfall suspended solids** | Weekly | Bio plant sand filters |

**Note 1:** The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

## *Control Techniques to prevent or reduce Emissions to Water*

| Process | Control Technique |
|---|---|
| **Waste water treatment plant** | Recover oil by using an API separator and reprocess the oily sludge. |
| | Remove dispersed oil by using dissolved air flotation. |
| | Remove soluble substances by using biological treatment and clarification by sand filter. |
| **Desalter unit** | Recycle water in the desalter unit and optimise process by using low shear mixer and monitoring of pH and electric field potential for coalescence. |
| | Separate desalter waste by using flare drum prior to the waste water treatment plant. |
| **Distillation process** | Route sour water from the distillation process to the sour water stripper unit. |
| **Products treatment process** | Recycle caustic washing solution until spent. |

## B.3 Emissions to Sewer

There shall be no process effluent emissions to sewer.

## B.4 Noise Emissions

**Monitoring Locations:** NSLs 1 to 5 and as required by the Agency.

| Emission Limit Value | | | | Monitoring | |
|---|---|---|---|---|---|
| **Daytime dB $L_{Ar,T}$ (30 minutes)** | **Evening time dB $L_{Ar,T}$ (30 minutes)** | **Night-time dB $L_{Aeq,T}$ (15-30 minutes)** | **Tonal/ Impulsive component** | **Measurement** | **Frequency** [Note 2] |
| 55 | 50 | 45 | none | $L_{Aeq,T}$<br>$L_{A90}$<br>$L_{A10}$<br>1/3 Octave band analysis | Annually |

| Period | Minimum Survey Duration [Note 2] |
|---|---|
| Daytime | A minimum of 3 sampling periods at each noise monitoring location. |
| Evening-time | A minimum of 1 sampling period at each noise monitoring location. |
| Night-time [Note 1] | A minimum of 2 sampling periods at each noise monitoring location. |

**Note 1:** Night-time measurements should be made between 2300hrs and 0400hrs, Sunday to Thursday, with 2300hrs being the preferred start time.

**Note 2:** The survey programme shall be undertaken in accordance with the methodology specified in the 'Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)' as published by the Agency.

## B.5 Monitoring of Storm Water Emissions

**Emission Point Reference No:** SW3, SW4

| Parameter | Monitoring Frequency | Analysis Method/Technique |
|---|---|---|
| **pH** | Monthly | Standard method |
| **COD** | Monthly | Standard method |
| **Total Ammonia** | Monthly | Standard method |
| **Total Nitrogen** | Monthly | Standard method |
| **Conductivity** | Monthly | Standard method |
| **Total Petroleum Hydrocarbons** | Monthly | Standard method |
| **Visual Inspection** | Weekly | Sample and examine for colour and odour. |

## B.6 Ambient Monitoring

### Groundwater Monitoring

**Locations:** GW101, GW102, GW103, GW104, GW105, GW106, GW108, GW109, GW112, GW114, GW115, GW116, GW117, GW118, GW119, GW120.

| Parameter | Monitoring Frequency | Analysis Method/Techniques |
|---|---|---|
| PH | Biannually | pH electrode/meter |
| COD | Biannually | Standard Method |
| Nitrate | Biannually | Standard Method |
| Total Ammonia | Biannually | Standard Method |
| Total Nitrogen | Biannually | Standard Method |
| Conductivity | Biannually | Standard Method |
| Hydrocarbons Note 1 | Biannually | GC-MS |

**Note 1:** The specific hydrocarbons to be monitored shall be as agreed previously with the Agency.

### Soil Monitoring

**Monitoring Location:** As per the 'Baseline Report' or alternative monitoring location(s) as agreed by the Agency

| Parameter | Monitoring Frequency | Analysis Method/Techniques |
|---|---|---|
| Relevant hazardous Substances Note 1 | Every ten years | Standard Method |

**Note 1:** Soil monitoring for relevant hazardous substances shall be in accordance with Condition 6.18.

# SCHEDULE C: Energy, Waste and Accident Prevention

## *C.1. Use Energy Efficiently*

| Process | Techniques |
|---|---|
| **Energy use** | Use pinch analysis and heat integration to optimise energy consumption in designing new process or system upgrades. |
| | Operate a CHP plant. |
| | Optimise fuel usage by monitoring fuel use versus steam/ heat output. |
| | Monitor and manage steam consumption systematically. |
| | From 26th October 2018 the licensee shall benchmark activities and maintain an energy efficiency index. |
| | Maintenance programme to include cleaning of heat exchangers. |
| | Optimise lighting system with an LED replacement programme. |

## *C.2. Waste Generation*

### *Waste Monitoring*

| Waste Class | Frequency | Parameter | Method |
|---|---|---|---|
| **Corrosion scale containing heavy metals** | Per consignment | Total Heavy Metals[Note 1] | Atomic Absorption/ICP |
| **Other** [Note 2] | | | |

**Note 1:** The specific heavy metals to be monitored shall be as agreed previously with the Agency.
**Note 2:** Analytical requirements to be determined on a case by case basis.

### *Control techniques for the reduction of waste generated*

| Process | Control Techniques |
|---|---|
| **Waste generation** | From 26th October 2018 the licensee shall maintain and implement a Waste Management Plan. |
| **Spent solid catalyst** | Recover spent solid catalyst off-site. |
| **Waste water treatment plant** | Dewater sludge by centrifuge prior to disposal. |

## C.3 Accident Prevention

### Control techniques for the prevention of incidents and accidents

| Process | Control Technique |
|---|---|
| **Installation operation** | Maintain and implement a safety management plan which includes a fire safety system. |
| **Transfer and handling of liquid hydrocarbon compounds** | Maintain and implement procedures for product transfer. |
| **Storage, transfer and handling of liquid hydrocarbon compounds** | Implement a maintenance programme that includes corrosion monitoring, prevention and control measures. |
| | Implement a maintenance programme that includes BAT for piping, bolted flange connections, valves, pumps and seal types, compressors and sampling ports. |
| **Chemical storage area** | Store packaged dangerous substances in a designated area under roof away from other storage areas and ignition sources. |
| | Designate a person responsible and specifically trained in chemical management, fire safety and emergency procedures. |
| | Segregate and separate incompatible substances. |

# SCHEDULE D: Annual Environmental Report

| Annual Environmental Report Content [Note 1] |
|---|
| Emissions from the installation. |
| Waste management record. |
| Resource consumption summary. |
| Complaints summary. |
| Schedule of Environmental Objectives and Targets. |
| Environmental management programme – report for previous year. |
| Environmental management programme – proposal for current year. |
| Pollutant Release and Transfer Register – report for previous year. |
| Pollutant Release and Transfer Register – proposal for current year. |
| Noise monitoring report summary. |
| Ambient monitoring summary. |
| Tank and pipeline testing and inspection report. |
| Tank and pipeline testing and inspection procedures – best practice review. |
| ASA plant operational hours report. |
| Reported incidents summary. |
| Energy efficiency audit report summary. |
| Report on the assessment of the efficiency of use of raw materials in processes and the reduction in waste generated. |
| Report on progress made and proposals being developed to minimise water demand and the volume of trade effluent discharges. |
| Reports on financial provision made under this licence, management and staffing structure of the installation, and a programme for public information. |
| Review of Closure, Restoration & Aftercare Management Plan. |
| Statement of measures in relation to prevention of environmental damage and remedial actions (Environmental Liabilities). |
| Environmental Liabilities Risk Assessment Review (every three years or more frequently as dictated by relevant on-site change including financial provisions. |
| Any other items specified by the Agency. |

**Note 1:** Content may be revised subject to the approval of the Agency.

**Sealed by the seal of the Agency on this the 17th day of October 2018.**

**PRESENT when the seal of the Agency was affixed hereto:**

**Mary Turner, Authorised Person**