

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

ExxonMobil Chemical Limited

Fawley Refinery Installation

Marsh Lane

Fawley

Southampton

SO45 1TX

Variation application number

EPR/ZP3839MG/V007

Permit number

EPR/ZP3839MG

Fawley Refinery Installation

Permit number EPR/ZP3839MG

Introductory note

This introductory note does not form a part of the notice

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Changes introduced by this variation notice/statutory review

This variation has been issued to update some of the conditions following a statutory review of the permits in the industry sector for the production of large volume organic chemicals. The opportunity has also been taken to consolidate the original permit and subsequent variations.

The Industrial Emissions Directive (IED) came into force on 7th January 2014 with the requirement to implement all relevant Best Available Techniques (BAT) conclusions as described in the Commission Implementing Decision. The BAT conclusions for production of large volume organic chemicals were published on 07 December 2017 in the Official Journal of the European Union (L323) following a European Union wide review of BAT, implementing decision 2017/2117/EU of 21 November 2017.

Where appropriate, we also considered other relevant BAT Conclusions published prior to this date but not previously included in a permit review for the Installation:-

Common waste water and waste gas treatment/management systems in the chemical sector. Published 09 June 2016

The BAT Conclusions for this installation which apply from 7th December 2021 are:

Production of Large Volume Organic Chemicals: BATc1, 3-6, 8, 9, 14, 15, 17-19.

Common waste water and waste gas treatment/management systems in the chemical sector: BATc1-3, 5-7, 9-16, 19, 20, 22 and 23.

The schedules specify the changes made to the permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Brief Description of the process

ExxonMobil Chemical Limited (EMCL) is a UK based wholly owned subsidiary of the ExxonMobil Corporation of the USA. Included within the Fawley Refinery installation boundary are the petrochemical plant operated by EMCL covered by this permit, oil refinery operated by Esso Petroleum Company (EPCo) Limited (also an ExxonMobil Company) covered by permit BR6996IC.

The Fawley Refinery installation is located in Fawley, Hampshire, approximately 7.5 km south-east of Southampton. The installation covers an area of 613 hectares and the entire site is centred at National Grid Reference SU 455043.

The installation is bounded to the east and north-east by mudflats, saltmarsh and Southampton Water. To the west and south the site is bounded by Fawley Road, the A326 and Long Lane. Beyond Fawley Road to the south is Fawley Village and undeveloped marshland. The village of Holbury is located to the west. To the north the site is bounded by Cadland Road, beyond which is a number of industrial properties.

The plant produces a range of downstream chemical products from refinery products, namely butylenes, methyl ethyl ketone and halobutyl rubber in addition to higher olefins as intermediaries for the vinyl and plastics industries and speciality chemicals for oil exploration, extraction and refining industries.

The Higher Olefins plant produces several higher olefins from propene and butene through the oligimerisation of propene and butene from feedstock transferred mainly from the refinery into larger molecules. In the HUB, butadiene is converted to butene. In the IB2 unit, isobutylene is extracted from the mixed butenes stream by reacting it with methanol to produce methyl ethyl tertiary butyl ether (MTBE), which is then decomposed to recover the isobutylene and recycle the methanol. The unreacted stream from the IB2 process is transferred either to the Higher Olefins unit or to the MEK (methyl ethyl ketone) unit where butene is recovered by acid extraction and converted to secondary butyl alcohol which is purified and further converted to methyl ethyl ketone.

Halobutyl rubber is produced by the copolymerisation and subsequent halogenation of 2-methyl propene and 2-methylbuta-1, 3-diene and is shipped to customers in pre-formed blocks.

In addition to the materials transferred from the refinery, other secondary materials are used (reaction catalysts, product additives, refrigerants and water treatment chemicals) and these are generally delivered by road.

The following directly associated activities which are not listed are also carried out:

- the operation of process heaters and furnaces, aggregated thermal input approximately 30 MW fired by refinery fuel gas,
- operation of a regenerative thermal oxidiser (RTO) to abate emissions of Volatile Organic Compounds (VOCs) from the Butyl rubber plant,
- provision of site utilities (including importing steam and treated water from EPCo, provision of cooling water and plant drainage systems),
- the provision of cooling by means of refrigeration plant using refrigerants including Freon R22, ethylene and propylene,
- the use of flare systems to dispose of flammable vapour releases from pressure relief devices,
- raw material and waste storage,
- transfer, storage and loading of finished products.

In general, material is transferred between processes without loss. The main emissions to air from the plant are from combustion products generated by process heaters and furnaces and are NO_x, CO and SO₂. Much of the fuel gas used is generated internally by the installation processes. Minimisation of emissions is achieved by controls on fuels (low sulphur content to reduce SO_x which have generally been pre-treated to reduce sulphur content and use of gas fuels to limit particulate release). There are further controls on burner specification such as low-NO_x design technology on the majority of furnaces. Bi-annual monitoring is undertaken at all point source emission points from heaters and furnaces for the main combustion emissions (SO₂ and NO₂). VOCs are monitored quarterly from the Butyl Rubber plant RTO. Annual calculations are made to determine mass emissions for a range of parameters.

Throughout the EMCL process areas, dirty water is routed to the underground dirty water sewer system and there is a separate clean water sewer system. All effluent from the polymerisation plant is transferred to the EPCo dirty and clean sewer systems via Separator SEPS 2 at transfer points T2 and T3 for final discharge via outfall 1. EMCL operates an effluent treatment plant with associated collection and discharge facilities which manages all other effluent from their activities.

Treated dirty water and clean water is transferred via Separator SEPS 3 at transfer point T1 to join the EPCo effluent stream for final discharge through outfall 2 to Southampton Water.

A hydrogenation plant for the production of isoparaffins is permitted on site. The hydrogenation process uses a metal catalyst at elevated temperature and pressure to produce isoparaffins which then undergo stabilisation treatment to remove trace quantities of hydrogen and methane. The final product is stored in refurbished storage tanks prior to export.

There are no direct emissions from the process to atmosphere or water. The hydrogen rich off gas from the hydrogenation process is reused on site and the off gas from stabilisation process is routed to the sites existing flare gas recovery system.

The site has an Environmental Management System that is regularly audited externally and has been attested to meet the requirements of ISO 14001 although not certified to this standard and the operator is a participant in the EU Emissions Trading Scheme.

The site is also subject to the Control of Major Accident Hazard Regulations as an upper COMAH tier site due to the quantity of petroleum products stored.

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 ZP3839MG	Duly made 05/10/06	
Additional information received	09/03/07	Letter from operator detailing the use of new catalysts on the Polymerisation plant and Steam Cracker 2
Additional information received	23/03/07	Information received during site visit relating to use of fuels in furnaces, details of flare system, details of leak detection system, details of VOC speciation calculations and confirmation of quality assurance procedures to assess changes in composition of material received from the Esso Petroleum refinery.
Details of EU ETS certificate number received	26/04/07	
Response to request for further information during meeting 23/4/07	21/05/07	Emails and attachments received from Esso Petroleum Company Limited (G Neal) 04/05/07 and 24/05/07 and from ExxonMobil Chemical Limited (A Pritchard).
Site plan detailing installation boundary and permit areas	29/06/07	Email from ExxonMobil Chemical Limited (A Pritchard).
Additional information received	22/06/07	Definition of start up and shut down for SC2 furnaces. Email from ExxonMobil Chemical Limited (A Pritchard)
Additional information received	02/08/07	Revised impact assessment for emissions to air. Email from Entec
Additional information received	02/08/07	Air quality impact modelling. Email from Entec
Additional information received	12/09/07	Further detail of SO ₂ emissions from EMCL furnaces and RTO project commissioning and emissions. Email from and conversation with ExxonMobil Chemical Limited (A Pritchard)
Additional information received	12/09/07	Confirmation of RTO project revised timings.

Status log of the permit		
Description	Date	Comments
		Letter from Esso Petroleum Company Limited (G Neal)
Additional information received	28/09/07	Revised site plan including the transfer of butadiene from Polimeri within the EMCL Permit boundary. Email from ExxonMobil Chemical Limited (A Pritchard)
Additional information received	24/09/07	Confirmation of completion timescale for the catalyst replacement. Letter from Esso Petroleum Company Limited (G Neal)
Additional information received	18/10/07	Revised completion date for catalyst project. Email from Esso Petroleum Company Limited (G Neal)
Additional information received	29/10/07	Confirmation of what constitutes completion of the RTO project. Email from ExxonMobil Chemical Limited (A Pritchard)
Permit determined	20/12/07	
Application for a Normal Variation (EPR/ZP3839MG/V002)	Duly made 11/12/09	
Request for confirmation of the revised listed activities and directly associated activities	Response received 16/03/09	
Variation issued (EPR/ZP3839MG/V002)	16/04/10	
Agency variation determined EPR/ZP3839MG/V003	05/03/14	Agency variation to implement the changes introduced by IED
Application EPR/ZP3839MG/V004 (variation)	Duly made 27/11/15	Application to vary the permit to produce and export isoparaffins.
Variation determined EPR/ZP3839MG	25/02/16	Varied permit issued.
Environment Agency Led Variation EPR/ZP3839MG/V005	29/11/18	Permit varied to reference Integrated Emissions Management Technique. Varied permit issued.
Part surrender application EPR/ZP3839MG/S006	Duly made 31/01/19	Application to surrender process Block 36B and the associated permitted area.
Additional information received	31/01/19	Non Technical Summary
Part surrender determined EPR/ZP3839MG/S006	21/03/19	Part surrender complete.
Regulation 61 Notice dated 04/05/18 (Notice requiring information for statutory review of permit)	Response Received 10/08/18	Technical standards detailed in response to the information notice.

Status log of the permit		
Description	Date	Comments
EPR/ZP3839MG/V007 (variation and consolidation)	Environment Agency Initiated Variation	Statutory review of permit occasioned by LVOC BAT Conclusions published 07 December 2017
Variation determined EPR/ZP3839MG (Billing Ref: QP3803LX)	03/09/20	Varied and consolidated permit issued

Other Part A installation permits relating to this installation		
Operator	Permit number	Date of issue
Esso Petroleum Company Limited	EPR/BR6996IC	20/12/2007
Biogenie Site Remediation Limited	EPR/ZP3133RH	04/11/2016

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

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

Permit number

EPR/ZP3839MG

Issued to

ExxonMobil Chemical Limited (“the operator”)

whose registered office is

Ermyn House

Ermyn Way

Leatherhead

Surrey

KT22 8UX

company registration number **00867162**

to operate part of an installation at

Fawley Refinery Installation

Marsh Lane

Fawley

Southampton

SO45 1TX

to the extent set out in the schedules.

The notice shall take effect from 03/09/2020

Name	Date
Philip Lamb	03/09/2020

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/ZP3839MG

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/ZP3839MG/V007 authorising,

ExxonMobil Chemical Limited (“the operator”),

whose registered office is

Ermyn House

Ermyn Way

Leatherhead

Surrey

KT22 8UX

company registration number **00867162**

to operate part of an installation at

Fawley Refinery Installation

Marsh Lane

Fawley

Southampton

SO45 1TX

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

Name	Date
Philip Lamb	03/09/2020

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.

1.5 Multiple operator installations

- 1.5.1 Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify without delay the other operator(s) of the installation of the same information.

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 green 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 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.
- 2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.4 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.
- 2.3.5 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.

2.4 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.

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 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Total annual emissions from the emission point(s) set out in schedule 3 tables S3.1 and S3.2 of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.
- 3.1.4 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.

3.2 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 schedule 3 table S3.5, to prevent or where that is not practicable to minimise the odour.

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 schedule 3 table S3.6, to prevent or where that is not practicable to minimise the noise and vibration.

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 and S3.2;
 - (b) noise specified in table S3.4;
 - (c) process monitoring specified in table S3.7;

- 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 and S3.2 unless otherwise agreed in writing by the Environment Agency.

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 annual production /treatment data 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 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, 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.

4.4 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 "without delay", 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	S4.1 A(1) (a) (i). Producing organic chemicals such as hydrocarbons (linear or cyclic, saturated or unsaturated, aliphatic or aromatic)	Production of a range of higher oligomers from short chain low carbon number molecules by oligomerisation reactions in a total of 17 reactors.	From receipt of feed raw materials from the Esso Petroleum Company Limited refinery to dispatch of products and transfer for further processing. Emissions to air from 1.8 MW process heater F301 via point B6 and 10.1 MW process heater F501 via emission point B7. Waste water emissions to Separator 2.
		Production of higher olefins from propene and butene	From receipt of feed from polymerisation plant to dispatch of higher olefins for further processing. Emissions to air from process heater F601 via point B5.
		Production of butyl rubber from 2-methylpropene and methylbuta-1,3-diene by co-polymerisation reactions	From receipt of feedstock from on-site and other ExxonMobil Chemical plants to dispatch of rubber solution for halogenation.
		Production of butene from mixed stream of butene, butane, isobutylene and butadiene by hydrogenation over a fixed bed catalyst in hydrogenation unit for butadiene (HUB)	From receipt of feed stream from SC2 or imports to transfer for further processing in isobutylene (IB2) unit.
		Decomposition of intermediate methyl tertiary butyl ether (MTBE) to isobutylene over a fixed bed catalyst in IB2 unit	From receipt of feed stream from IB2 unit to transfer of final product for storage, then to the Butyl rubber plant (2 methylpropene) and to the MEK and Higher Olefins (butene) plants.
		Producing isoparaffins from higher olefins.	From receipt of raw materials to despatch of finished product.
AR2	S4.1 A (1) (a) (ii). Producing organic chemicals such as organic compounds containing oxygen, such as alcohols, aldehydes, ketones, carboxylic acids, esters, ethers, peroxides,	Production of Secondary Butyl Alcohol (SBA) from butenes and butanes (Raf-2) by acid extraction.	From receipt of Raf- 2 feed stream to storage of intermediate product for further processing.
		Production of methyl ethyl ketone (MEK) from Secondary Butyl Alcohol (SBA) by catalytic hydrogenation reaction.	From receipt of SBA feed stream to storage of purified final product and transfer of co-products for use in other processes. Includes the recycling of un-reacted SBA.

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
	phenols, epoxy resins.		Emissions to air from 5.5 MW furnace F701 fitted with low-NO _x staged burner to point B12 and from low-NO _x staged process heater F702 (3.4 MW furnace) via point B16.
		Production of methyl tertiary butyl ether (MTBE) in fixed bed reactors in IB2 to transfer of reactions products to the decomposition section.	From receipt of feed from on-site ExxonMobil Chemical processes to transfer of reaction products to the butyl rubber plant (2-Methylpropene) and to the refinery for further processing (butene).
AR3	S4.1 A(1) (a) (ix). Producing organic chemicals such as synthetic rubbers.	Production of halobutyl rubber from butyl rubber slurry by reaction with chlorine or bromine.	From receipt of butyl rubber solution to dispatch of finished products. Includes associated de-watering, drying and baling processes. Emissions to air from drying processes via regenerative thermal oxidiser at emission point B34.
AR4	S5.4 A (1) (a) (ii). Disposal of non-hazardous waste in a facility with a capacity exceeding 50 tonnes per day by physico-chemical treatment.	Treatment of dirty effluent streams in Separator Seps 3 to remove solids by settlement.	From receipt of dirty water effluent to transfer to Esso Petroleum Company Limited sewer system at transfer point T1 via separator Seps 3. Includes discharge of dirty water and clean water via separators, and disposal of screened out solids.
Directly Associated Activity			
AR5	Operation of process heaters and furnaces	Heating of products in process heaters and furnaces, total aggregate thermal input of 35MW fired by refinery fuel gas.	From the receipt of refinery fuel gas to use in the furnaces and process heaters and the discharge of exhaust gases to air.
AR6	Operation of fluidised bed conveyor	Drying of halobutyl rubber crumb in finishing stage of production.	From receipt of rubber crumb to transfer to bale press. Emissions to air via regenerative oxidation unit.
AR7	Operation of regenerative oxidation unit (RTO)	Incineration of hexane vapour via thermal oxidiser to abate emissions of VOCs (hexane) generated during drying process of halobutyl rubber production.	Emissions to air from product drying processes via regenerative thermal oxidiser (RTO) via emission point B34.
AR8	Provision of site utilities	Operation of plant refrigeration units using	Includes receipt and handling of refrigerant.

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
		Freon 22, ethylene and propene.	
		Importing steam from Esso Petroleum Company Limited processes	From receipt of steam to discharge of condensate to sewer system.
		Importing treated water from Esso Petroleum Company Limited	From receipt of treated water to discharge to sewer system.
		Provision of cooling water to the process and ancillaries	From receipt of water from Esso Petroleum Company Limited to final discharge to sewer system. Includes recovery of condensate steam.
		Plant and surface water drainage systems (sumps and drains) and transfer of effluent streams	From discharge in process areas into dirty or clean water system to transfer to EPCo effluent system via SEPS 2 and SEPS 3 via Dissolved Air Flotation unit (dirty water).
AR9	Raw material handling and storage	Storage and handling of raw materials used	Includes receipt and handling of bulk raw materials
AR10	Effluent Management and Control	Controlled neutralisation of waste streams (caustic and acidic) in MEK unit	From receipt of waste streams to transfer of neutralised effluent to clean water sewer
AR11	Waste storage and handling	Storage of wastes produced	From waste generation, storage and monitoring to waste dispatch
AR12	Transfer storage and loading of finished products	Transfer and loading of products by pipeline or to road car for onward transportation and marine terminal shipping.	Includes storage of finished products prior to shipment

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to section 2.1, parts 2.1 and 2.2 Volume 1 and Volume 2 in the application.	24/08/2006
Application	The response provided in Section 5.1.1 – Butyl Polymers regarding the RTO project phases	24/08/2006

Table S1.2 Operating techniques		
Description	Parts	Date Received
Additional information	Programme for installation of new catalyst on polymerisation plant and SC2	14/3/2007 and 26/3/2007
Operation of furnace F401 on SC2	Email received from ExxonMobil Chemical Limited (A Pritchard)	21/5/2007
Definition of start up and shut down for SC2 furnaces	Email received from ExxonMobil Chemical Limited (A Pritchard)	22/6/2007
Variation Application	The response to sections 2.1 and 2.2 within the application – Supporting Information, which will supersede the previous operating techniques where applicable.	04/12/2009
Confirmation of the revised listed activities and directly associated activities	E-mail received from ExxonMobil Chemical Limited	16/03/2010
Variation Application EPR/ZP3839MG/V004	Parts C2 and C3 and the supplementary information supplied with these parts.	27/11/2015
Variation Application EPR/ZP3839MG/S006	Part E2 and the supplementary information supplied with this part.	31/01/2019
Improvement Condition 2 submission	The calculation method for the determination of emissions (kg/hr and tonnes/year) for the following emission points and parameters: B5, B6, B7, B12 and B16 - SO2 B19, B20 - Methyl chloride B21- B33 - Hexane	23/6/2008
Improvement Condition 4 submission	Confirmation of the commencement of the outage periods for each phase of the RTO project during completion of construction and confirm duration of outage.	23/5/2008
Completion of pre Operational Condition	Odour Management Plan	17/12/2008
	Noise Management Plan	16/12/2008

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC14	The Operator shall provide written confirmation to the Agency of the date of shut down of SC2 and the benzene unit.	Completed 7/7/2010

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Refinery fuel gas	No more than 3000 parts per million by volume sulphur content and maximum average value of 1300 parts per million by volume over the calendar year
Water treatment chemicals	Transfer of effluent discharges of mercury, cadmium, arsenic, copper, lead, manganese, nickel and zinc as a result of impurities in raw materials used in the treatment of water shall be controlled by ensuring that impurity levels are the minimum available in the commercial product.

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)	Reference period	Monitoring frequency	Monitoring standard or method
B5 on site plan (figure 1) in Schedule 2	Stack from furnace F-601 from higher olefins plant	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	200 mg/m ³ ^H	Average over sampling period	Every 6 months	BS EN 14792
		Sulphur dioxide	3 kg/hr ^H	Maximum monthly average	Continuous	Using calculation method agreed in writing with the Agency
		Sulphur dioxide	10 tonnes per year ^H	Calculated mass emission	Annual	Using calculation method agreed in writing with the Agency
Process vents	Process vents from higher olefins	No parameters set	No limits set	-	-	Permanent sampling access not required
Relief valves	Relief valves from higher olefins	No parameters set	No limits set	-	-	Permanent sampling access not required
B6 on site plan (figure 1) in schedule 2	Stack from furnace F-301 from polymerisation and heptene recovery plant	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	350 mg/m ³ ^H	Average over sampling period	Every 6 months	BS EN 14792
		Sulphur dioxide	3 kg/hr ^H	Maximum monthly average	Continuous	Using calculation method agreed in writing with the Agency
		Sulphur dioxide	2 tonnes per year ^H	Calculated mass emission	Annual	Using calculation method agreed in writing with the Agency
B7 on site plan (figure 1) in schedule 2	Stack from furnace F-501 from polymerisation and	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	330 mg/m ³ ^H	Average over sampling period	Every 6 months	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)	Reference period	Monitoring frequency	Monitoring standard or method
	heptene recovery plant	Sulphur dioxide	3 kg/hr ^H	Maximum monthly average	Continuous	Using calculation method agreed in writing with the Agency
		Sulphur dioxide	3 tonnes per year ^H	Calculated mass emission	Annual	Using calculation method agreed in writing with the Agency
Process vents	Process vents from polymerisation and heptene recovery plant	No parameters set	No limits set	-	-	Permanent sampling access not required
Relief valves	Relief valves from polymerisation and heptene recovery plant	No parameters set	No limits set	-	-	Permanent sampling access not required
B8	MEK tank 516	No parameters set	No limits set	-	-	Permanent sampling access not required
B9	Butanol tank 544	No parameters set	No limits set	-	-	Permanent sampling access not required
B10	Butanol tank 511	No parameters set	No limits set	-	-	Permanent sampling access not required
B11	Butanol tank 588	No parameters set	No limits set	-	-	Permanent sampling access not required
B12 on site plan (figure 1) in Schedule 2	Stack from furnace F-701 from MEK plant	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	130 mg/m ^{3H}	Average over sampling period	Every 6 months	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)	Reference period	Monitoring frequency	Monitoring standard or method
		Sulphur dioxide	3 kg/hr ^H	Maximum monthly average	Continuous	Using calculation method agreed in writing with the Agency
		Sulphur dioxide	21 tonnes/year ^H	Calculated mass emission	Annual	Using calculation method agreed in writing with the Agency
B13	MEK tank 586	No parameters set	No limits set	-	-	Permanent sampling access not required
B14	MEK tank 514	No parameters set	No limits set	-	-	Permanent sampling access not required
B15	MEK tank 515	No parameters set	No limits set	-	-	Permanent sampling access not required
B16 on site plan (figure 1) in Schedule 2	Stack from furnace F-702 from MEK plant	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	130 mg/m ³ ^H	Average over sampling period	Every 6 months	BS EN 14792
		Sulphur dioxide	3 kg/hr ^H	Maximum monthly average	Continuous	Using calculation method agreed in writing with the Agency
		Sulphur dioxide	15 tonnes/year ^H	Calculated of mass emission	Annual	Using calculation method agreed in writing with the Agency
Process vents	Process vents from MEK plant	No parameters set	No limits set	-	-	Permanent sampling access not required
Relief valves	Relief valves from MEK plant	No parameters set	No limits set	-	-	Permanent sampling access not required

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
B17	Chlorine scrubber T-550Y vent on butyl polymers	No parameters set	No limits set	-	-	Access not required
B18	Bromine scrubber T650 vent on butyl polymers	No parameters set	No limits set	-	-	Access not required
B19	Tower T-107X vent on butyl polymers	Methyl chlorine	4 kg/tonne product	Calculated annual average	Annually	Using calculation method agreed in writing with the Agency
B20	Drum D126 vent on butyl polymers					
B21	Hexane tank 595 vent on butyl polymers	Hexane	0.5 kg/tonne product from completion of phase III of the RTO project	Calculated mass emission	Annually ^D	Using calculation method agreed in writing with the Agency
B22	Condenser vent to cement tanks 591, 592 and 593 on butyl polymers					
B33	Drum D508 vent on butyl polymers					
B34 on site plan (figure 1) in Schedule 2	Stack from regenerative thermal oxidiser on butyl polymers	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	50 mg/m ³	Average over sampling period	Every 6 months	BS EN 14792
		Carbon Monoxide	50 mg/m ³	Average over sampling period	Every 6 months	BS EN 15058 or ISO 12039

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
		VOCs	75 mg/m ³ E	Average over sampling period	Every 3 months	BS EN 12619:1999
Process vents	Process vents from butyl polymers	No parameters set	No limits set	-	-	Permanent sampling access not required
Relief valves	Relief valves from butyl polymers	No parameters set	No limits set	-	-	Permanent sampling access not required
<p>A Limits do not apply during start up.</p> <p>B Permanent means of access for sampling/monitoring is not required where limits have not been set.</p> <p>E Limit does not apply when the RTO is not in service.</p> <p>G The operation this of this emission point will be permitted for 3 months following discontinuance of its regular use, or as agreed with the Agency.</p> <p>H These limits do not apply when the emissions are being assessed for compliance under the agreed Integrated Emissions Management Technique incorporated into permit EPR/BR6996IC.</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
T1: transfer of effluent to Esso Petroleum Company Limited wastewater treatment system via Separator 3 effluent line and separator.	Process water streams, drainage from potentially contaminated process, loading and storage areas via the dirty water sewer. Once through cooling water via the clean water sewer. Treated sewage effluent via 12 th St Separator.	No parameters set	No limits set	-	-	Permanent sampling access not required

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
T2 transfer of effluent from polymerisation plant to Esso Petroleum Company Limited wastewater treatment system via Separator 2	Process water streams, drainage from process areas	No parameters set	No limits set	-	-	Permanent sampling access not required
T3 transfer of clean water effluent from polymerisation plant to Esso Petroleum Company Limited wastewater treatment system via Separator 2	Clean water from non-process areas	No parameters set	No limits set	-	-	Permanent sampling access not required

Table S3.3 Annual limits for EMCL permitted activities		
Substance	Medium	Limit (including unit)
Sulphur dioxide	Air	54 tonnes in a year

Table S3.5 Appropriate measures for odour	
Measure	Date
<p>The operator shall maintain the odour management plan as described in submission dated November 2009.</p> <p>The operator shall review the plan annually and record at least once a year or as soon as practicable after a complaint (whichever is the earlier), whether changes to the plan should be made and make any appropriate changes to the plan identified by a review.</p>	From date of approval by Environment Agency.

Table S3.4 Noise monitoring requirements				
Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Perimeter noise survey	Noise	Annually	BS 4142:2014	-

Table S3.6 Appropriate measures for noise	
Measure	Date
<p>The operator shall maintain the noise management plan as described in submission dated 16 December 2008.</p> <p>The operator shall review the plan annually and record at least once a year or as soon as practicable after a complaint (whichever is the earlier), whether changes to the plan should be made and make any appropriate changes to the plan identified by a review.</p>	From date of approval by Environment Agency.

Table S3.7 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Fugitive emissions of VOCs from permitted activities	VOCs	-	LDAR programme as implemented and updated under permit EPR/BR69961C	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.

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 – oxides of nitrogen Parameters as required by condition 3.5.1.	B5, B6, B7, B12, B16, B34	Every 12 months	20/12/07
Emissions to air – sulphur dioxide Parameters as required by condition 3.5.1	B5, B6, B7, B12, B16	Every 12 months	20/12/07
Emissions to air – methyl chloride Parameters as required by condition 3.5.1	B19, B20	Every 12 months	20/12/07
Emissions to air – hexane Parameters as required by condition 3.5.1	B21 – B33	Every 12 months	20/12/07
Emissions to air – carbon monoxide Parameters as required by condition 3.5.1	B34	Every 12 months	20/12/07
Emissions to air – VOCs Parameters as required by condition 3.5.1	B34	Every 12 months	20/12/07
Noise monitoring Parameters as required by condition 3.5.1	Perimeter noise survey	Every 12 months	20/12/07

Table S4.2: Annual production/treatment	
Parameter	Units
Solvent products	Tonnes
Intermediary products	Tonnes
Speciality chemical products	Tonnes

Table S4.3 Performance parameters		
Parameter	Frequency of assessment	Units
Water usage	Annually	Tonnes
Energy usage (electrical)	Annually	MWh
Energy usage (all fuels)	Annually	MJ
Raw material usage	Annually	Tonnes
Specific Energy Consumption	Annually	MWh/tonne of production
Specific Energy Consumption	Annually	GJ/tonne of production
Imports (i.e. feedstocks)	Annually	Tonnes
Waste disposed of off site per tonne of product produced	Annually	Tonnes/tonne of production

Table S4.4 Reporting forms		
Media/parameter	Reporting format	Date of form
Air	Form Air 1 or other form as agreed in writing by the Environment Agency	24/10/07
Water usage	Form Water Usage 1 or other form as agreed in writing by the Environment Agency	24/10/07
Production	Form Production 1 or other form as agreed in writing by the Environment Agency	24/10/07
Other performance indicators	Form Performance 1 or other form as agreed in writing by the Environment Agency	24/10/07

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	EPR/ZP3839MG
Name of operator	ExxonMobil Chemical Limited
Location of Facility	Fawley Refinery
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	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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 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.

“annually” means once every year.

“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.

“average over the sampling period” means the average value of three consecutive measurements of at least 30 minutes each [or as agreed in writing with the Environment Agency].

“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.

“BAT-AELs” means BAT-associated emission levels, i.e. the emission levels associated with the best available techniques for emissions to air and/or water, as set out in

“Common waste water and waste gas treatment/management systems in the chemical sector BAT Conclusions or CWW” means Commission Implementing Decision (EU) 2016/902 of 30 May 2016 establishing Best Available Techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for Common Waste Water And Waste Gas Treatment/ Management Systems in the Chemical Sector

“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.

“emissions to land” includes emissions to groundwater.

“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.

“flaring” means high-temperature oxidation to burn combustible compounds of waste gases from industrial operations with an open flame.

“fugitive emissions” means diffuse VOC emissions from ‘point’ sources.

“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.

“Hazardous property” has the meaning in Annex III of the Waste Framework Directive.

“Hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

“Large Volume Organic Chemicals BAT Conclusions or LVOC” means The Commission Implementing Decision (EU) 2017/2117 of 21 November 2017 establishing Best Available Techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the Production of Large Volume Organic Chemicals.

“LDAR” means Leak Detection and Repair, a managed scheme and programme for testing potential sources of fugitive emissions, from operational plant at the installation, and repairing or carrying out other actions to

prevent, or where that is not possible, minimise continued emissions from those sources. The LDAR programme at the installation shall be consistent with the requirements of the Institute of Petroleum (Energy Institute) Protocol.

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

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

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

“RTO” means Regenerative Thermal Oxidiser

“Total Organic Carbon” means Total Organic Carbon. In respect of releases to air this means the gaseous and vaporous organic substances, expressed as TOC.

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.

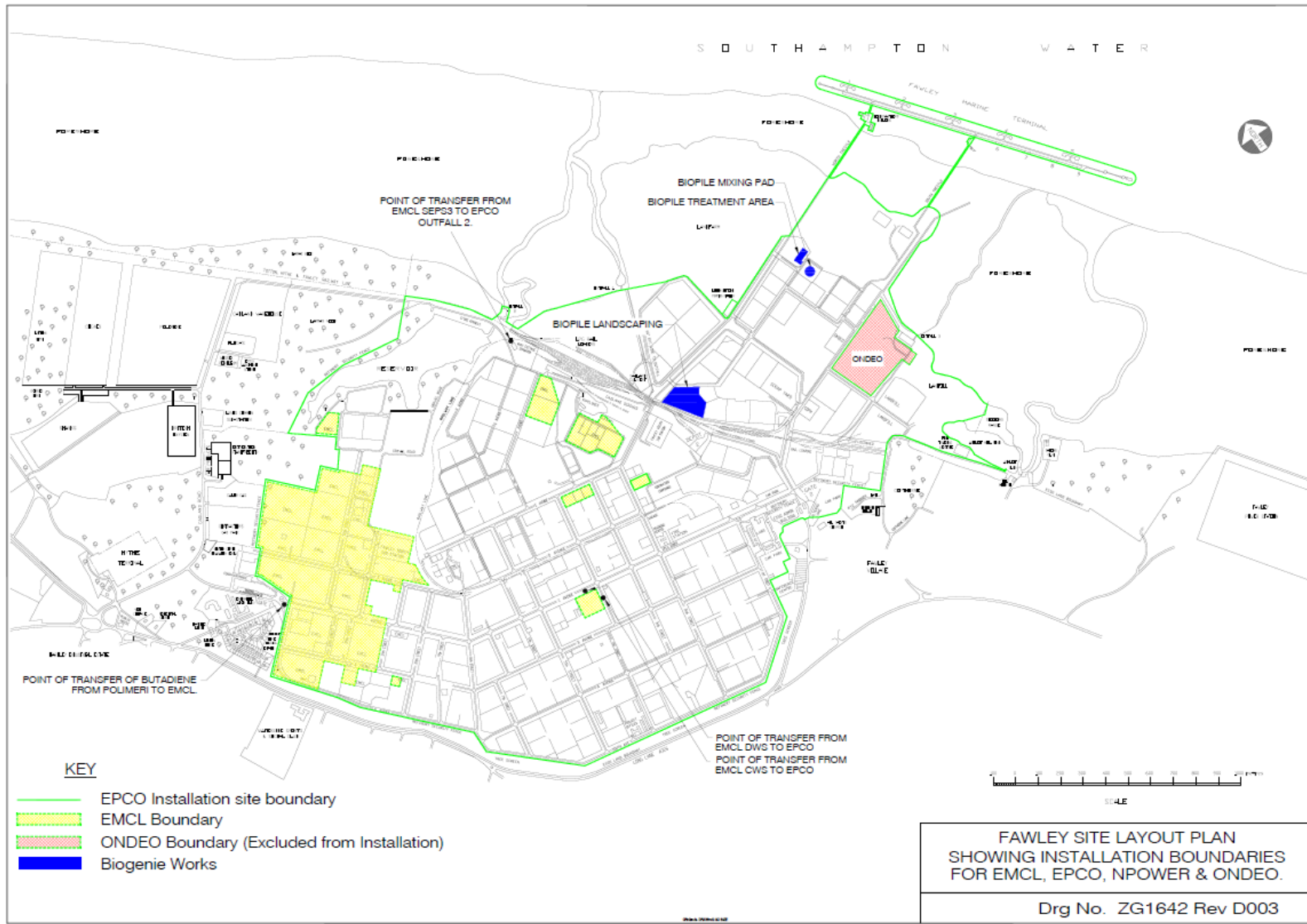
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- 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 gas engines or gas turbines, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 15% 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.

“year” means calendar year ending 31 December.

“yearly average” means the average over a period of one year of validated hourly averages obtained by continuous measurements.

Schedule 7 – Site plan



END OF PERMIT

Permit number
EPR/ZP3839MG