

# EPR BESPOKE INSTALLATION PERMIT VARIATION


APPLICATION SUPPORT DOCUMENT

**Solvent Storage and Transfer  
Facility, Malvern**

Prepared for:  
**Equilibrium Chemical Services Ltd**

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## Contents

|  | <b>Page</b> |
|--|-------------|
| <b>1. INTRODUCTION</b>                     | <b>4</b>    |
| <b>2. DESCRIPTION OF VARIED ACTIVITIES</b> | <b>8</b>    |
| 2.1 Description of the Proposed Changes    | 8           |
| 2.2 Details of the Site                    | 9           |
| 2.2.1 Site Location and Setting            | 9           |
| 2.2.2 Facility Boundary                    | 9           |
| 2.2.3 Infrastructure and Design            | 10          |
| 2.3 Description of the Process             | 11          |
| 2.4 Raw Materials                          | 14          |
| 2.4.1 Waste Feedstocks                     | 14          |
| 2.5 Environmental Management System        | 17          |
| 2.5.1 Summary EMS                          | 18          |
| 2.5.2 Site Maintenance                     | 19          |
| 2.6 Operator Competence                    | 19          |
| 2.7 Site Security                          | 20          |
| 2.8 Accidents and Emergencies              | 20          |
| 2.8.1 Accident Management Plan             | 20          |
| 2.8.2 Incident Reporting                   | 21          |
| <b>3. EMISSIONS &amp; THEIR ABATEMENT</b>  | <b>23</b>   |
| 3.1 Emissions to Air                       | 23          |
| 3.2 Emissions to Controlled Water          | 23          |
| 3.3 Emissions to Sewer                     | 23          |
| 3.4 Emissions to Land                      | 23          |
| 3.5 Odour                                  | 23          |
| 3.6 Noise Impacts                          | 23          |
| 3.7 Fugitive Emissions                     | 24          |
| 3.8 Waste Generation and Management        | 24          |
| 3.8.1 Types and Amounts of Waste           | 24          |
| 3.8.2 Waste Storage                        | 24          |
| <b>4. ENVIRONMENTAL MONITORING</b>         | <b>25</b>   |
| 4.1 Emissions to Air                       | 25          |
| 4.2 Emissions to Controlled Water          | 25          |
| 4.3 Emissions to Sewer                     | 25          |
| 4.4 Emissions to Land                      | 25          |
| <b>5. IMPACT TO THE ENVIRONMENT</b>        | <b>26</b>   |
| 5.1 Impacts to Air                         | 26          |
| 5.2 Impacts to Land                        | 26          |

|     |                              |    |
|-----|------------------------------|----|
| 5.3 | Impacts to Controlled Waters | 26 |
| 5.4 | Impact to Sewer              | 26 |

### Index of Tables

| Table Ref | Table Title                                | Page |
|-----------|--|------|
| Table 2.1 | Permitted Activities                       | 8    |
| Table 2.2 | Wastes Accepted on Site EWC Code and Types | 14   |

### Index of Figures

| Figure Ref | Figure Title                    | Page |
|------------|---------------------------------|------|
| Figure 1.1 | Site Location                   | 5    |
| Figure 1.2 | Updated Facility Boundary       | 6    |
| Figure 1.3 | Internal Plant Layout           | 7    |
| Figure 2.1 | Exhaust Gas Condenser Schematic | 12   |
| Figure 2.2 | Process Schematic               | 13   |

### Annexes

| Annex Ref | Annex Title                             |
|-----------|---|
| Annex A   | Figures                                 |
| Annex B   | Technical Data                          |
| Annex C   | Environmental Risk Assessment           |
| Annex D   | Site Condition Report                   |
| Annex E   | Accident Management Plan                |
| Annex F   | Environmental Management System Summary |
| Annex G   | WAMITAB                                 |

## GLOSSARY OF TERMS

| <b>Term</b>               | <b>Definition</b>   |
|---------------------------|---|
| <b>ATEX</b>               | 'Atmospheres Explosibles' ATEX Directive  |
| <b>CIRIA</b>              | Construction Industry Research and Information Association - A neutral, independent, not-for-profit organisation.   |
| <b>DEFRA</b>              | Department for Environment, Food and Rural Affairs.   |
| <b>DSEAR</b>              | The Dangerous Substances and Explosive Atmospheres Regulations 2002   |
| <b>EA</b>                 | Environment Agency  |
| <b>EMS</b>                | Environmental Management System   |
| <b>EPR Regs 2016</b>      | Environmental Permitting (England and Wales) Regulations 2016 (as amended)  |
| <b>EWC</b>                | European Waste Catalogue  |
| <b>Fugitive emissions</b> | Emissions other than point source emissions, that arise from the process e.g. through leaks, and may cause pollution but do not have set limits in permit conditions.   |
| <b>HSE</b>                | Health and Safety Executive   |
| <b>HSG</b>                | Health and Safety Guidance  |
| <b>IBC</b>                | Intermediate Bulk Container   |
| <b>ISO14001</b>           | ISO 14000 is a family of standards related to environmental management that exists to help organizations (a) minimize how their operations (processes etc.) negatively affect the environment (i.e. cause adverse changes to air, water, or land); (b) comply with applicable laws, regulations, and other environmentally oriented requirements, and (c) continually improve in the above. |
| <b>PLC</b>                | A Programmable Logic Controller, PLC or Programmable Controller is a digital computer used for automation of electromechanical processes, such as control of machinery.   |
| <b>SCADA</b>              | SCADA (supervisory control and data acquisition) is a type of industrial control system (ICS). Industrial control systems are computer controlled systems that monitor and control industrial processes.  |
| <b>SGN</b>                | Sector Guidance Note  |
| <b>WAMITAB</b>            | WAMITAB is an organisation and charity that develops qualifications for those working in waste management   |

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## NON TECHNICAL SUMMARY

Equilibrium Chemical Services Ltd is making this variation to their Bespoke Waste Operation Permit (EPR/BB3900GS) under The Environmental Permitting (England and Wales) Regulations 2016 (as amended) (EPR Regs) for the proposed addition of a solvent distillation plant at their existing Solvent Storage and Transfer Facility site in Malvern, Worcestershire.

The existing Solvent Storage and Transfer Facility is located at Unit 5 Merebrook Industrial Estate, Hanley Road, Welland, Malvern, Worcestershire, WR13 6NP (Grid Reference SO 79588 42200). The distillation plant will be located in Unit 4 and as such, the permitted boundary of the facility will need to be extended.

The proposed development is for a small scale waste solvent distillation plant to treat the used solvents from a variety of industrial sources, that are received at the Unit 5 storage and transfer facility. The ability for Equilibrium Chemicals to provide an on-site solvent recovery service provides a key additional service to the business.

The proposed distillation plant is very small scale and will typically involve the processing of waste solvents in batches using a 2,200L capacity automatic solvent recycling machine, anticipated to include three batches a day. The waste operation process will be permitted by the Environment Agency as a Waste Operation and will be operated in accordance with the EPR Regs 2016 as amended.

### General Overview

The Merebrook site currently comprises on single portal framed building (Unit 5) that is used for the storage of solvents and other water based polymer chemicals and the permit boundary is being extended to include an additional (existing) single bay portal framed industrial building (Unit 4), to house the new distillation plant.

Unit 4 has concrete flooring and internal bunding for the new plant and for temporary storage of solvents to be transferred in / out of the building. Storage across the site will remain below the 50 tonne Part A(1) trigger thresholds and no more than 10 tonnes per day of hazardous waste will be treated.

Wastes will continue to be accepted only to Unit 5 (storage) and this permit variation seeks to increase the annual throughput to a maximum of 3,650 tonnes per annum.

The permit will therefore remain regulated as a Waste Operation.

The site infrastructure has been designed to be totally impermeable and benefits from sealed drainage.

### Emissions to Air

There will be no process emissions to air arising from the Waste Operation other than fugitive releases e.g. from overpressure valves which will only operate in an emergency situation.

### Emissions to Controlled Water

There will be no process emissions to controlled waste arising from the Waste Operation.

There are no internal drains within the storage building. Any spillage of material within the building will be retained and disposed of accordingly.

#### **Emissions to Sewer**

There will be no emissions to sewer from the permitted activities.

#### **Emissions to Land**

There will be no emissions to land arising from the Waste Operation.

## 1. INTRODUCTION

Equilibrium Chemical Services Ltd is making this variation to their Bespoke Waste Operation Permit (EPR/BB3900GS) under The Environmental Permitting (England and Wales) Regulations 2016 (as amended) (EPR Regs 2016) for the proposed addition of a solvent distillation plant at their existing Solvent Storage and Transfer Facility site in Malvern, Worcestershire.

The existing Solvent Storage and Transfer Facility is located at Unit 5 Merebrook Industrial Estate, Hanley Road, Welland, Malvern, Worcestershire, WR13 6NP (Grid Reference SO 79588 42200). The distillation plant will be located in Unit 4 and as such, the permitted boundary of the facility will need to be extended.

The proposed distillation plant is small scale and will typically involve the processing of waste solvents, that are received at the Unit 5 storage and transfer facility, in batches using a 2,200L capacity automatic solvent recycling machine, anticipated to include three batches a day. The waste operation process will be permitted by the Environment Agency as a Waste Operation and will be operated in accordance with the EPR Regs 2016 as amended.

The remainder of this application support document is structured accordingly:

- *Section 2:* Provides specific details associated with the Waste Operation Permit Variation;
- *Section 3:* Provides specific nature and detailed description of the emissions to air, water emissions and waste associated with the Facility;
- *Section 4:* Provides details of all environmental monitoring associated with the Facility;
- *Section 5:* Provides an Environmental Impact and Assessment of the Installation against the requirements of the Habitats Directive.

All technical appendices associated with the Installation are included and comprise the following:

- *Annex A:* Figures;
- *Annex B:* Technical Data;
- *Annex C:* Environmental Risk Assessment;
- *Annex D:* Site Condition Report;
- *Annex E:* Accident Management Plan;
- *Annex F:* EMS Summary; and
- *Annex G:* Operator Competence

The location of the Facility is provided overleaf in Figure 1.1.

The site layout and Facility boundary are provided in Figures 1.2 and 1.3.



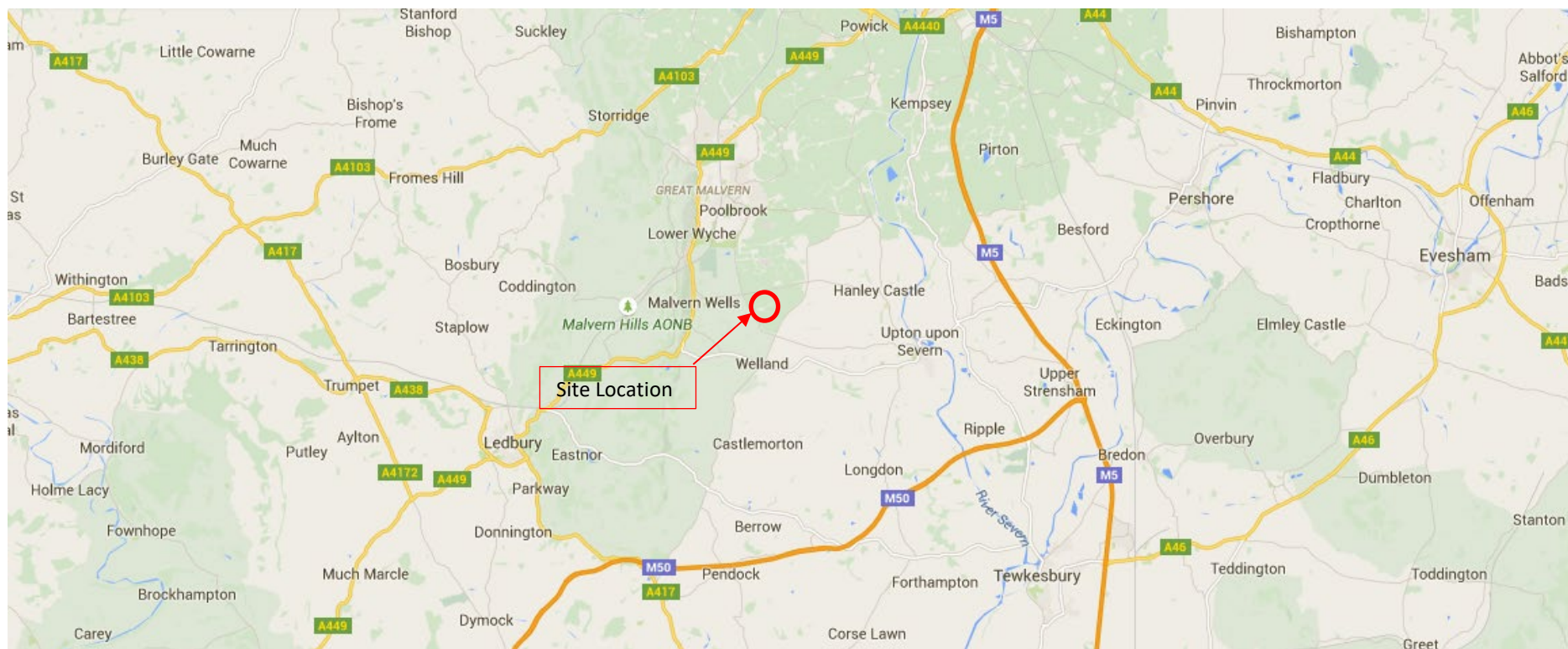


Figure 1.1: Site Location



Figure 1.2: Updated Facility Boundary



### Unit 4 Floor Plan

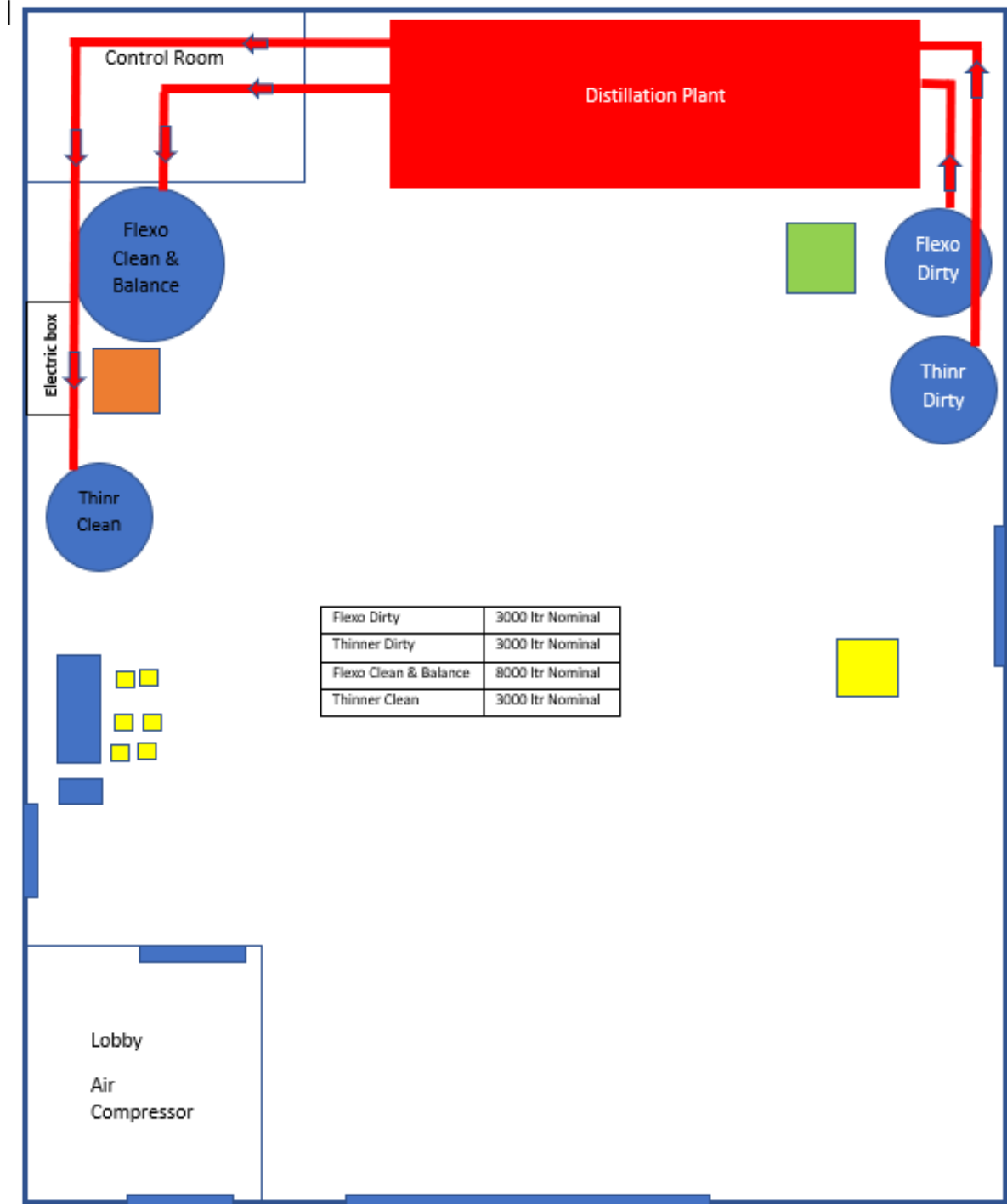


Figure 1.3: Internal Site Layout (Unit 4)

## 2. DESCRIPTION OF VARIED ACTIVITIES

### 2.1 Description of the Proposed Changes

Equilibrium Chemical Services Ltd (the 'Operator' or 'Applicant') is making a variation application for their existing Bespoke Waste Operation Permit at their Solvent Storage and Transfer Facility in Welland, Worcestershire.

The facility currently accepts no more than 2,000 tonnes per annum and stores less than 50 tonnes at any one time of post-consumer waste solvents for offsite recovery using distillation. This Permit variation seeks to:

- Add a solvent distillation processing facility
- Extend the waste operation permit boundary to include Unit 4 which will house the solvent processing facility
- Increase the throughput to a maximum 3,650 tonnes per annum (no more than 10 tonnes per day)

Wastes will continue to be accepted only to Unit 5 (storage) and this permit variation seeks to increase the annual throughput to a maximum of 3,650 tonnes per annum. No more than 50 tonnes of hazardous waste will be stored at any one time and no more than 10 tonnes per day of hazardous waste will be treated.

The proposed new activity will recover no more than 10 tonnes per day of hazardous waste, and does not therefore meet the trigger thresholds of a Part A(1) activity as defined by Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2016 (as amended) and the Permit will therefore remain regulated as a Waste Operation.

Due to the nature of the solvent distillation activity the process is defined as a R2 '*Solvent reclamation/regeneration*'.

The proposed changes to Schedule 1 – Operations of the sites existing permit are provided in Table 2.1 overleaf (marked in red).

| Table 2.1: Permitted Activities |   |  |
|---------------------------------|---|--|
| Activity Reference              | Description of specified activity and WFD Annex I and II Operations   | Limits of Specified Activity   |
| AR1                             | R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced)<br><br>R2: Solvent reclamation / regeneration | The maximum quantity of hazardous waste that can be stored at the site shall not exceed 50 tonnes at any one time.<br><br>Wastes shall be stored for no longer than 6 months prior to recovery.<br><br>The maximum quantity of hazardous waste that can be treated shall not exceed 10 tonnes per day. |

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|  |   |
|--|---|
|  | <p><del>There shall be no treatment of hazardous waste.</del></p> <p>There shall be no mixing of hazardous waste.</p> |
|--|---|

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The applicable technical guidance notes used in the preparation of this application document are:

- EA SGN 5.06: Guidance for the recovery and disposal of hazardous and non-hazardous waste;
- EA Chemical waste: Appropriate measures for the permitted facilities;
- EA Guidance - Control and monitor emissions for your environmental permit; and
- EA Guidance - Develop a management system: environmental permits.

Reference has also been made to HSG Guidance 51 - '*Storage of Flammable Liquids in Containers*', HSG Guidance 140 '*Safe use and handling of flammable liquids*' and HSG Guidance 176 '*Storage of flammable liquids in tanks*'.

The main environmental issues identified within the guidance documents have been built into the site operation procedures that will form the management systems and operating procedures for the site.

## 2.2 Details of the Site

### 2.2.1 Site Location and Setting

The location of the subject Site is shown on Figure A1, Annex A and centred at approximate National Grid Reference SO 79588 42200 (Unit 5 – Unit 4 centre is at National Grid Reference SO 79648 42200). The proposed site layout is shown in Section 1, Figure 1.3.

### 2.2.2 Facility Boundary

The permit boundary will need to be extended to incorporate Unit 4 which will house the solvent distillation process. A figure showing the proposed building configuration and updated permit boundary has been provided in Section 1, Figure 1.2.

The Site Condition Report that provides the baseline conceptual model for the site has been updated to include the new area (with supporting ground investigation data) and included within *Annex D* of this document.

The Site Condition Report does not indicate that the existing site presents a significant contamination risk, nor does it identify that any aspect of the new area (Unit 4) to be included in the permit boundary presents a potential risk to the environment.

All aspects of the new distillation process have been designed in accordance with the relevant EA Guidance (see 'Tanks and Bunds section below).

### 2.2.3 Infrastructure and Design

All existing waste acceptance and storage activities will continue to take place within the existing building (Unit 5) on site.

The new solvent distillation process will be housed in Unit 4 which is an existing single bay portal framed industrial building.

#### *Site Drainage*

There will be no internal drains located within Unit 4. Any spillages of liquids within the building will be retained within the internal bunding, and treated accordingly. In the event of a spillage, no materials should escape the premises and should be retained.

#### *Tanks and Bunds*

All tanks will be installed with secondary containment and designed to comply with the relevant parts of the following legislation, standards and guidance requirements:

- EA SGN 5.06: Guidance for the recovery and disposal of hazardous and non-hazardous waste;
- Chemical waste: Appropriate measures for permitted facilities, Environment Agency 2020;
- Oil storage regulations for businesses, Environment Agency, 2015;
- Oil Storage Regulations Guidance, Environment Agency and DEFRA 2016;
- Pollution prevention for businesses, Environment Agency and DEFRA 2019;
- Prevent groundwater pollution from solvents, Environment Agency and DEFRA 2016
- CIRIA C598: Chemical storage tank systems – Good practice;
- CIRIA C736: Design of containment systems for the prevention of pollution;
- HSG 51: The storage of flammable liquids in containers;
- HSG 140: Safe use and handling of flammable liquids; and
- HSG 176: Storage of flammable liquids in tanks.

All tanks, barrelling and IBCs will be located within bunds with a capacity which is greater than both 25% of the aggregate tank capacity and over 110% of the largest tank within the bund.

#### *Plant and Equipment*

The new distillation plant will include:

- Control centre mounted on machine (and separate PLC touch screen controls);
- Heating circuit by diathermic oil in forced circulation;
- Frame mounted, stainless steel boiler assembly (electrically powered) with flanged boiler cover (interlocked) and working level control (plus second safety level control);
- Overpressure valve for safety;

- Vacuum group consisting electric liquid ring pump, level controls and water-cooled vessel for the vacuum pump with exhaust gas condenser;
- 2 x distillate tanks (90 L) equipped with level controllers and extraction pump connected to the storage tank;
- 2 x waste solvent storage tanks (3,000 L each);
- 2 x clean solvent storage tanks (1 x 3,000 L, 1 x 8,000 L);
- Cooling and condensation circuit using water cooled, stainless steel vapor condenser connected to closed loop water chiller
- Residue unloading valve including IBC sensor
- External demister to eliminate particle carry over in case of foaming
- Photocell AFN safety device for nitrocellulose to provide automatic safety protection

### 2.3 Description of the Process

The site currently operates a small-scale waste storage and transfer facility for the receipt and transfer of containerised waste solvents which will not change as a result of this variation.

This Permit variation seeks to add a new solvent distillation process to the Permit in order to recycle and reuse three main types of waste solvents received, namely:

- Flexographic wash out solvent;
- Paint line flushing solvent; and
- Post press wash out solvent.

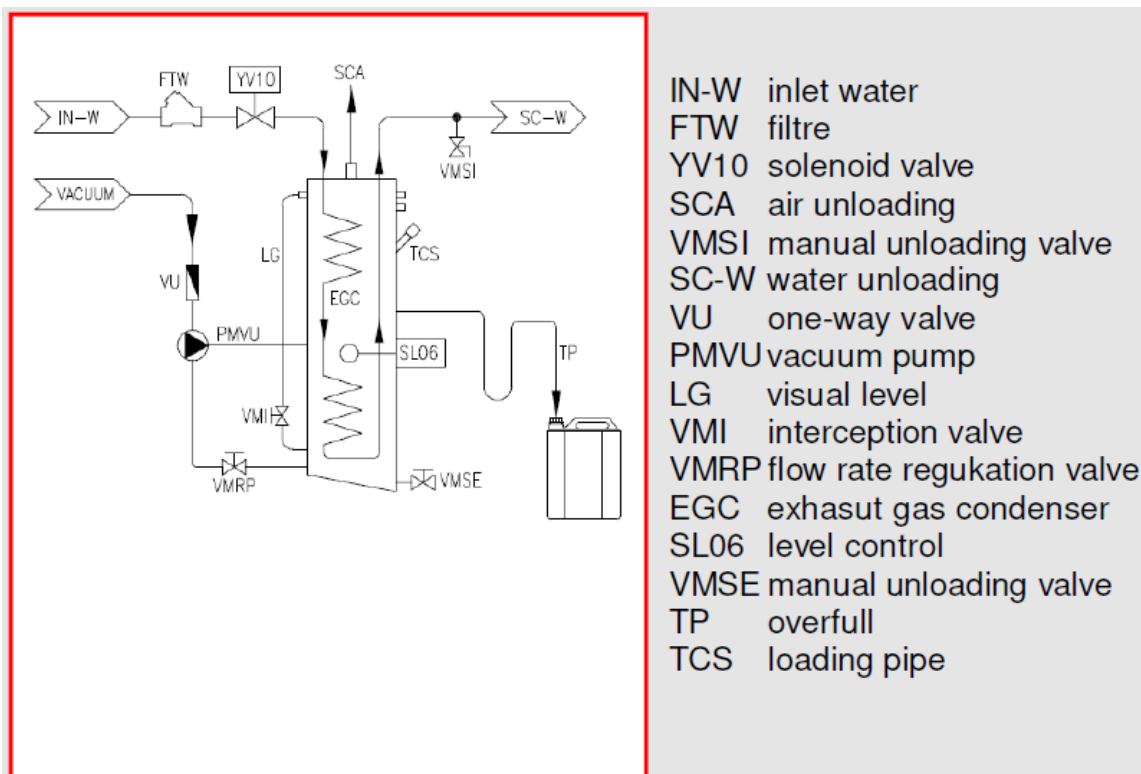
Once the solvent is received on site and accepted (subject to exiting waste acceptance procedures), it will be transferred to the new Unit 4 building housing the distillation plant for treatment. Each solvent stream will be processed as a single item with no cross contamination.

The distillation process separates contaminants such as resins, polymers, pigments, inks, oils etc from the original solvent thereby creating a clean solvent which can be collected and reused.

Waste solvent will be pump feed into one of two dedicated waste solvent tanks (3000 L each). The process then uses automatic waste solvent loading by vacuum fill and controlled by level control.

The solvent is boiled in a free-standing boiler (total volume 3280 L, useful loading capacity 2200 L) using a peripheral heating jacket filled with diathermic oil and heated by electrical heating elements.

The Unit is equipped with a liquid ring vacuum pump for recycling high boiling point solvents, allowing distillation under reduced pressure and therefore lower boiling points. This is equipped with an exhaust gas condenser which suppresses emissions and allows the system to operate without emissions to atmosphere (see Figure 2.1).



**Figure 2.1:** Exhaust Gas Condenser Schematic

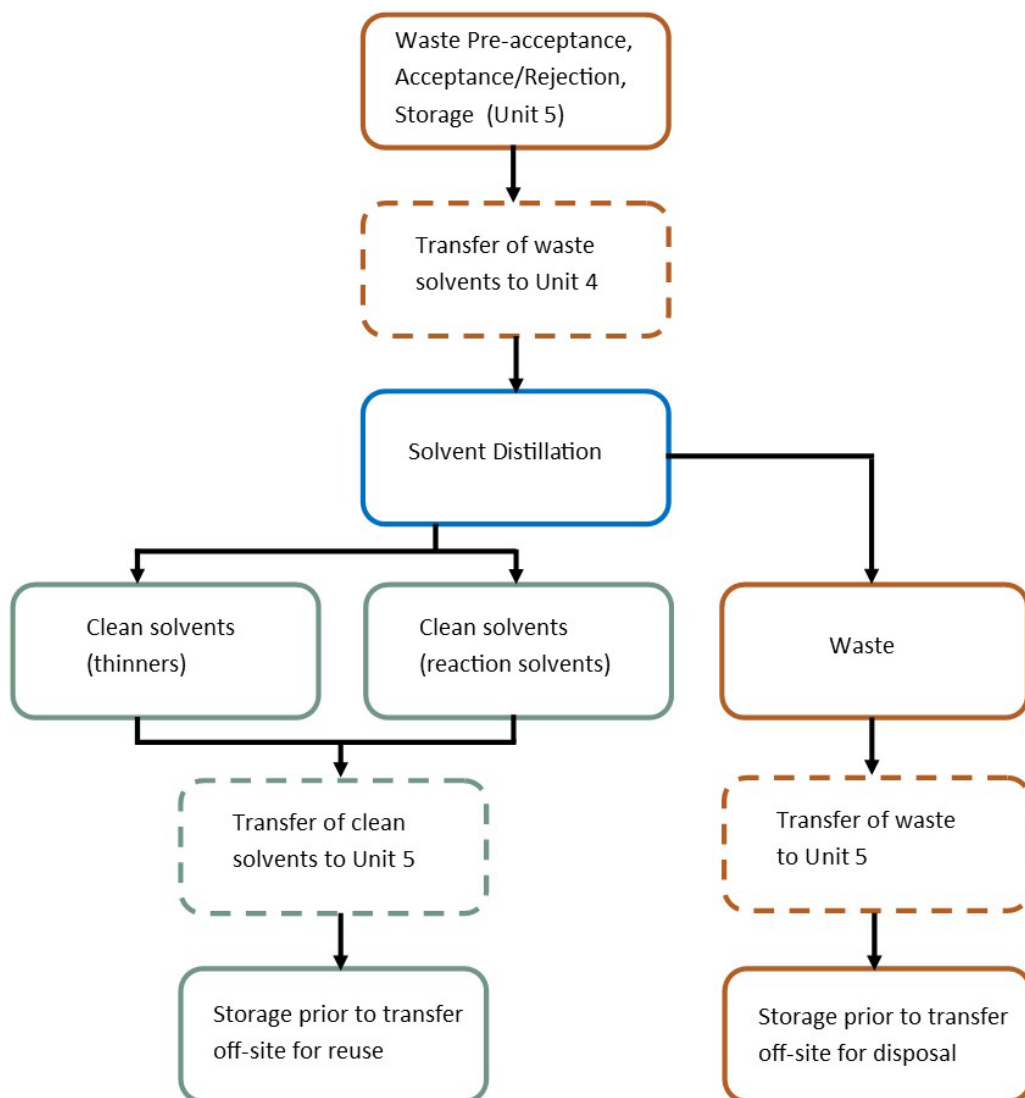
Rotating blades inside the boiler are implemented to keep the solvent to be treated constantly moving, allowing maximum extraction of the solvent, concentration of the residues and avoid the residues sticking to the boiler's sides and base.

Solvent vapours created by the boiling process are conveyed to a water-cooled condenser and the condensed solvent is then collected in distillate tanks and pumped automatically to the appropriate clean solvent storage tank prior to transfer to the existing storage facility (Unit 5).

Touch screen PLC controls are used to provide complete versatility to allow virtually any solvent to be treated and allows the operator to set operating parameters and view data.

A simplified process schematic can be found in Figure 2.2 below.





**Figure 2.2:** Simplified Process Schematic

The distillation process will be housed in Unit 4, separate from the existing Unit 5 which currently accepts and stores the waste solvents. As indicated above, the Unit 4 distillation process will include temporary storage of waste solvents for input to the distillation process and clean solvent outputs. Waste and clean solvents will be transferred to / from these tanks from / to Unit 5 via IBCs/drums. The new storage tanks in Unit 4 will comprise:

- 2 x stainless steel storage tanks for waste solvents – one for reaction solvent and one for thinners (total capacity 3,000 L each); and
- 2 x stainless steel storage tanks for clean solvents – one for reaction solvent (8,000 L) and one for thinners (total capacity 3,000 L).

The existing Unit 5 has been designed with appropriate reception, storage and quarantine areas that allow for the storage of up to (but less than) 50 tonnes of liquid solvents. As the waste solvent acceptance and distillation process will be turned around on a daily basis, the capacity of 50 tonnes remains sufficient.

All solvents will be transferred and stored on site in 205L barrels, 1000L Intermediate Bulk Containers (IBC's) and the new stainless steel tanks.

The site is 100% impermeable and provides secondary containment and emergency response equipment.

The plant has been designed in accordance with DSEAR requirements and meets all UK / HSE regulations.

## 2.4 Raw Materials

Raw materials for the new distillation process will be limited to diathermic oil for the boiler heating jacket and lubrication oil.

### 2.4.1 Waste Feedstocks

The facility's annual throughput will increase to a maximum of 3,650 tonnes of waste per annum (with treatment of no more than 10 tonnes per day of hazardous waste). Waste is delivered directly to site in 20 tonne batch loads and is unloaded directly into the Unit 5 building. Less than 50 tonnes of waste solvents will be stored on site at any time.

All solvents are delivered in 1000L IBC containers or 205L barrels.

All solvents being accepted into building will continue to be subject to Equilibrium Chemical Services Waste Pre-Acceptance, Waste Acceptance and Waste Rejection procedures in accordance with the site's existing Environmental Management System and operating procedures.

A detailed list of European Waste Catalogue (EWC) codes of wastes that will be accepted by the Installation is provided in Table 2.2.

| Table 2.2 : Wastes Accepted on Site (EWC Codes and Types) |   |
|---|---|
| Waste Code  | Description   |
| <b>07</b>   | <b>WASTES FROM ORGANIC CHEMICAL PROCESSES</b>   |
| <b>07 01</b>  | <b>wastes from the manufacture, formulation, supply and use (mfsu) of basic organic chemicals</b> |
| 07 01 03*   | organic halogenated solvents, washing liquids and mother liquors                                  |
| 07 01 04*   | other organic solvents, washing liquids and mother liquors  |
| 07 01 07*   | halogenated still bottoms and reaction residues   |
| <b>07 02</b>  | <b>wastes from the MFSU of plastics, synthetic rubber and man-made fibres</b>                     |
| 07 02 03*   | organic halogenated solvents, washing liquids and mother liquors                                  |
| 07 02 04*   | other organic solvents, washing liquids and mother liquors  |
| 07 02 07*   | halogenated still bottoms and reaction residues   |
| <b>07 03</b>  | <b>wastes from the MFSU of organic dyes and pigments (except 06 11)</b>                           |

|              |  |
|--------------|--|
| 07 03 03*    | organic halogenated solvents, washing liquids and mother liquors   |
| 07 03 04*    | other organic solvents, washing liquids and mother liquors   |
| 07 03 07*    | halogenated still bottoms and reaction residues  |
| <b>07 04</b> | <b>wastes from the MFSU of organic plant protection products (except 02 01 08 and 02 01 09), wood preserving agents (except 03 02) and other biocides</b>          |
| 07 04 03*    | organic halogenated solvents, washing liquids and mother liquors   |
| 07 04 04*    | other organic solvents, washing liquids and mother liquors   |
| 07 04 07*    | halogenated still bottoms and reaction residues  |
| <b>07 05</b> | <b>wastes from the MFSU of pharmaceuticals</b>   |
| 07 05 03*    | organic halogenated solvents, washing liquids and mother liquors   |
| 07 05 04*    | other organic solvents, washing liquids and mother liquors   |
| 07 05 07*    | halogenated still bottoms and reaction residues  |
| <b>07 06</b> | <b>wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics</b>  |
| 07 06 03*    | organic halogenated solvents, washing liquids and mother liquors   |
| 07 06 04*    | other organic solvents, washing liquids and mother liquors   |
| 07 06 07*    | halogenated still bottoms and reaction residues  |
| <b>07 07</b> | <b>wastes from the MFSU of fine chemicals and chemical products not otherwise specified</b>  |
| 07 07 03*    | organic halogenated solvents, washing liquids and mother liquors   |
| 07 07 04*    | other organic solvents, washing liquids and mother liquors   |
| 07 07 07*    | halogenated still bottoms and reaction residues  |
| <b>08</b>    | <b>WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS</b> |
| <b>08 01</b> | <b>wastes from MFSU and removal of paint and varnish</b>   |
| 08 01 11*    | waste paint and varnish containing organic solvents or other dangerous substances  |
| 08 01 12     | waste paint and varnish other than those mentioned in 08 01 11   |
| 08 01 13*    | sludges from paint or varnish containing organic solvents or other dangerous substances  |
| 08 01 14     | sludges from paint or varnish other than those mentioned in 08 01 13   |
| 08 01 15*    | aqueous sludges containing paint or varnish containing organic solvents or other dangerous substances  |
| 08 01 16     | aqueous sludges containing paint or varnish containing organic solvents or other hazardous substances  |
| 08 01 17*    | wastes from paint or varnish removal containing organic solvents or other dangerous substances   |
| 08 01 18     | wastes from paint or varnish removal other than those mentioned in 08 01 17  |
| <b>08 03</b> | <b>wastes from MFSU of printing inks</b>   |
| 08 03 12*    | waste ink containing dangerous substances  |
| 08 03 13     | waste ink other than those mentioned in 08 03 12   |

|              |  |
|--------------|--|
| <b>08 04</b> | <b>wastes from MFSU of adhesives and sealants (including water proofing products)</b>  |
| 08 04 09*    | waste adhesives and sealants containing organic solvents or other hazardous substances   |
| 08 04 10     | waste adhesives and sealants other than those mentioned in 08 04 09  |
| 08 04 11*    | adhesive and sealant sludges containing organic solvents or other hazardous substances   |
| 08 04 12     | adhesive and sealant sludges other than those mentioned in 08 04 11  |
| 08 04 13*    | aqueous sludges containing adhesives or sealants containing organic solvents or other hazardous substances   |
| 08 04 14     | aqueous sludges containing adhesives or sealants other than those mentioned in 08 04 13  |
| 08 04 15*    | aqueous liquid waste containing adhesives or sealants containing organic solvents or other hazardous substances  |
| 08 04 16     | aqueous liquid waste containing adhesives or sealants other than those mentioned in 08 04 15   |
| <b>08 05</b> | <b>wastes not otherwise specified in 08</b>  |
| 08 05 01*    | waste isocyanates  |
| <b>09</b>    | <b>WASTES FROM THE PHOTOGRAPHIC INDUSTRY</b>   |
| <b>09 01</b> | <b>wastes from the photographic industry</b>   |
| 09 01 03*    | solvent-based developer solutions  |
| <b>11</b>    | <b>WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY</b>  |
| <b>11 01</b> | <b>wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)</b> |
| 11 01 13*    | degreasing wastes containing dangerous substances  |
| 11 01 98*    | other wastes containing hazardous substances   |
| <b>12</b>    | <b>WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS</b>  |
| <b>12 01</b> | <b>wastes from shaping and physical and mechanical surface treatment of metals and plastics</b>  |
| 12 01 09*    | machining emulsions and solutions free of halogens   |
| <b>13</b>    | <b>OIL WASTES AND WASTES OF LIQUID FUELS (EXCEPT EDIBLE OILS, AND THOSE IN CHAPTERS 05, 12 AND 19)</b>   |
| <b>13 01</b> | <b>waste hydraulic oils</b>  |
| 13 01 13*    | other hydraulic oils   |
| <b>13 02</b> | <b>waste engine, gear and lubricating oils</b>   |
| 13 02 08*    | other engine, gear and lubricating oils  |
| <b>14</b>    | <b>WASTE ORGANIC SOLVENTS, REFRIGERANTS AND PROPELLANTS (EXCEPT 07 and 08)</b>   |
| <b>14 06</b> | <b>waste organic solvents, refrigerants and foam/aerosol propellants</b>   |
| 14 06 02*    | other halogenated solvents and solvent mixtures  |

|              |  |
|--------------|--|
| 14 06 03*    | other solvents and solvent mixtures  |
| 14 06 04*    | sludges or solid wastes containing halogenated solvents  |
| 14 06 05*    | sludges or solid wastes containing other solvents  |
| <b>15</b>    | <b>WASTE PACKAGING, ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED</b>  |
| <b>15 01</b> | <b>packaging (including separately collected municipal packaging waste)</b>  |
| 15 01 10*    | packaging containing residues of or contaminated by hazardous substances   |
| 15 01 11*    | metallic packaging containing a hazardous solid porous matrix (for example asbestos), including empty pressure containers  |
| <b>15 02</b> | <b>absorbents, filter materials, wiping cloths and protective clothing</b>   |
| 15 02 02*    | absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances                          |
| <b>16</b>    | <b>WASTES NOT OTHERWISE SPECIFIED IN THE LIST</b>  |
| <b>16 05</b> | <b>gases in pressure containers and discarded chemicals</b>  |
| 16 05 04*    | gases in pressure containers (including halons) containing hazardous substances  |
| 16 05 07*    | discarded inorganic chemicals consisting of or containing hazardous substances   |
| <b>16 07</b> | <b>wastes from transport tank, storage tank and barrel cleaning (except 05 and 13)</b>   |
| 16 07 09*    | wastes containing other hazardous substances   |
| <b>19</b>    | <b>WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE</b> |
| <b>19 02</b> | <b>wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)</b>  |
| 19 02 04*    | premixed wastes composed of at least one hazardous waste   |
| <b>20</b>    | <b>MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS</b>                                 |
| <b>20 01</b> | <b>separately collected fractions (except 15 01)</b>   |
| 20 01 13*    | solvents   |
| 20 01 27*    | paint, inks, adhesives and resins containing dangerous substances  |

## 2.5 Environmental Management System

Equilibrium Chemical Services operate and maintain a formal Environmental Management System which has been certified to meet the requirements of the International Standard BS EN ISO14001:2015 (see Annex F).

The Environmental Management System is organised so that adequate and continuous control is exercised over all activities affecting the environmental issues relating to the supply of materials and chemicals. Emphasis is placed on legal compliance, continuous improvement and the identification of actual and potential environmental issues and the initiation of remedial or preventive measures.

The EMS is designed to ensure:

- The identification of all foreseeable environmental impacts and risk that Equilibrium Chemical Services activities pose to the environment;
- Prevention or minimisation of any identified risks to practical minimum;
- Legal Compliance assurance;
- Identification of risks of pollution including those arising from operations, maintenance, accidents, incidents, non-conformances and complaints, and how these will be minimised; and
- Activities at the site will be managed in accordance with the management system, which will be subject to continuous review, audit and improvement. Specific detailed management system reviews will take place if there is a significant change to the activities, following an accident or if a non-compliance is found.

The key aspects of the EMS for the site include:

- Preventative maintenance;
- Operator requirements;
- Training and Competence;
- Emergency response and incident management; and
- Monitoring, measurement and reporting.

The Environmental Management System and procedures have been written to ensure that the environmental risk and impact of the normal running of the site activities are documented and minimised.

The company has established a third-party compliance assurance process that will, as a minimum, provide the following:

- All contractors and third-party processors hold the appropriate licenses and environmental permits to receive and process the wastes transferred from site;
- Equilibrium Chemical Services are compliant with their own internal Management Systems, testing and record keeping;
- All personnel working for the company are suitably competent and trained; and
- The requirements and conditions of the Environmental Permit are met and complied with.

### 2.5.1 Summary EMS

Equilibrium Chemical Services have developed a summary EMS for the operation of the site. This summary EMS defines the management of the site and provides the management controls for all aspects of the site.

The basic structure of the operational procedures has been designed around the best practice requirements of the EA guidance notes.

The company operates a suite of procedures for each of the key activities on site. An EMS Summary of these procedures has been included in *Annex F* and includes the following:

- Risks and opportunities;
- Management of the EMS;
- Pollution prevention planning;
- Competence and awareness;
- Communication;
- Control of documents and data;
- Operational planning and control;
- Emergency preparedness and response;
- Monitoring and measurement;
- Internal audit;
- Management review; and
- Improvement.

### 2.5.2 Site Maintenance

The key aspects of the maintenance management programme include:

- A programme of site inspections is carried out to ensure site inventory is managed in accordance with Sector Guidance and Regulatory Requirements;
- Spill kits and emergency response equipment is routinely inspected and maintained to optimum condition;
- Plant is inspected and maintained in accordance with manufacturers recommendations;
- Site Infrastructure is inspected and managed in accordance with the requirements of HSG 51, HSG 140 and HSG 176 and relevant EA Guidance SGN5.06 and Chemical waste appropriate measures, to ensure that floor slabs, secondary containment etc are capable of providing adequate protection.

The maintenance programme ensures that all equipment or infrastructure that is deemed essential in the prevention of pollution to the environment (e.g. hard-standing, bunds, abatement plant etc.) or the prevention of local nuisance impacts (e.g. noise abatement equipment etc.) is maintained and kept in good operating condition.

## 2.6 Operator Competence

The site is fully staffed during all operations. The primary role of day staff is to ensure and oversee plant operations, waste transfers, monitor the distillation process and management.

Additional activities include general site housekeeping and administration activities. Additional staff attending the site will be visiting engineers from the equipment manufacturers who are adequately trained to perform their duties at the site. The site maintains written operation instructions for all of the plant and monitoring equipment present on site and these will be updated to include the new distillation process.

All personnel working at the facility are trained in the necessary sections of the Environmental Management System.

All staff working for and on the behalf of the site, are suitably trained and competent. (e.g. professional maintenance engineers, electricians, equipment operators etc).

All operations on the site are managed by the Site Manager, who acts as both the '*competent person*' at the facility and the main process supervisor. The site manager has all necessary qualifications in place.

Equilibrium Chemicals employ a technically competent person (Chris Lloyd-Adams) who is deemed competent through qualification and holds the necessary Level 4 WAMITAB qualifications as required by the WAMITAB competency scheme. The WAMITAB registration details (awaiting issue of certificate) are shown in Annex G of this document.

## 2.7 Site Security

Site Security measures comprise;

- A site perimeter fence which is inspected periodically to ensure that the site security has not been compromised;
- A single gate entry controlling the sole access point to the site. This gatehouse will closed and locked between 18:00 – 08:00hrs;
- All storage and treatment activities will be carried out within locked and secured buildings which are manned at all times during working hours. At all other times the buildings are secured and locked; and
- CCTV monitoring of the external and internal areas of the Installation.

## 2.8 Accidents and Emergencies

### 2.8.1 Accident Management Plan

Equilibrium Chemical Services has developed its own Accident Management Plan based around the specific risks associated with the site operations and this has been updated to include the new distillation activity.

The key aspects of the Sites Accident Management Plan are:

- Reviewed by Site Management annually, and as soon as practicable after an accident;
- Considers hazards presented by:
  - emergency shut-down procedures;
  - actions in case of fire/explosion/emergencies;
  - contaminated firewater;
  - failure of any equipment;
  - spillages and uncontrolled releases;
  - flooding;



- Identify events or failures that could damage the environment;
- Assesses the likelihood and the potential environmental consequences from accidents at the site; and
- Proposes action to minimise the potential causes and consequences of accidents.

Equilibrium Chemical Services' Accident Management Plan has been included in Annex E. Specific emergency response procedures relating to the new plant will be developed by the operator in conjunction with the plant manufacturer. These procedures will be complete prior to operation of the new plant commencing at the site.

The site has been assessed in accordance with the Dangerous Substances and Explosive Atmosphere Regulations 2002 (DSEAR) and an updated fire / emergency plan will be prepared accordingly. ATEX rated equipment is implemented.

In accordance with the EA Guidance Fire Prevention Plans: Environmental Permits, a fire prevention plan is not required and has not been produced. An Emergency Management Plan Procedure is in place at the site (ECS-EO6) which contains information relevant for dealing with accidents including fire and a 'grab pack' is located at the site entrance including key site information, explanatory notes and the emergency procedures together with relevant supporting information (plans, drainage details, inventory of hazardous materials and location, location of fire hydrants and extinguishers, mains water and electricity isolation points).

### 2.8.2 Incident Reporting

The reporting of incidents and non-conformities forms a key component of the companies Environmental Management System.

Identified non-conformities under the system include, but are not limited to the following:

- Uncontrolled leaks and spillages of any materials with the potential to cause pollution to the environment;
- Non-compliance to any permitted condition or consent limit;
- Internal Audit findings (legal non-compliances, EMS procedural breaches, system non-compliances); and
- External and Internal Complaints.
- The company's EMS undergoes periodic external audit and review to ensure that both compliance and continuous improvement is achieved. The EMS requires that all identified incidents and non-conformities will be investigated and closed out.

All plant and equipment is PLC controlled, monitored and alarmed, thus ensuring that continuous plant diagnostics can be facilitated.

Furthermore, the site management system has documented procedures and registers to:

- Ensure that any members of the public/residents are alerted and informed if a significant plant issue arises (fire, explosion etc);

- Record, report and investigate any internal or external complaints to ensure that any necessary measures are taken to prevent, or where that is not possible to minimise, the causes; and
- Inform any members of the public about the nature of the site, key contacts and sources of further information.

## 3. EMISSIONS & THEIR ABATEMENT

### 3.1 Emissions to Air

There will be no source emissions to air arising from the new distillation plant. The plant is a fully enclosed, sealed process by nature.

Fugitive emissions may be released:

- from structural losses during operation (valves, connections, flanges, outlets)
- during loading / unloading
- when the boiler cover is opened

The distillation process will be housed within a building and will operate under vacuum which will reduce structural losses as the joints and connections will draw in air.

Overpressure valves on the new plant will only operate under abnormal operating conditions to release pressure for safety reasons.

### 3.2 Emissions to Controlled Water

There will be no process emissions to controlled waste arising from the Waste Operation.

There are no internal drains within the processing building. Any spillage of solvents within the processing building will be retained and disposed of accordingly.

No material will be able to escape the processing building.

### 3.3 Emissions to Sewer

There will be no emissions to sewer from the proposed development.

### 3.4 Emissions to Land

There will be no emissions to land arising from the proposed development.

### 3.5 Odour

This variation does not introduce any new wastes and the distillation process is a closed system operated under vacuum (benefitting from exhaust gas condenser to remove entrained solvents) within a building so is not expected to give rise to odour impacts on the neighbouring receptors.

### 3.6 Noise Impacts

The design of the new distilling plant (rated at 72 dB(A)) which will be located within a building, is not expected to give rise to noise impacts on the environment and neighbouring receptors. The site is not located in an area considered to be sensitive to noise.

### 3.7 Fugitive Emissions

All waste activities will be fully contained within the main processing building and the distillation process, by nature, is fully enclosed. Liquid decanting will take place within the buildings.

### 3.8 Waste Generation and Management

#### 3.8.1 Types and Amounts of Waste

The site has been designed to process up to 3,650 tonnes per annum and will not exceed 10 tonnes of hazardous waste treatment per day.

The inventory of wastes are managed at less than 50 tonnes at all times.

All solvents transferred onto site will be accepted and stored in Unit 5 and then transferred to Unit 4 for recovery in the new distillation process. Clean solvents will then be transferred back to Unit 5 for storage prior to transfer off site for reuse.

The site will produce residue waste from the process (approximately 70,000 litres per annum) which will be removed via clip top drums / IBC and transferred off-site for disposal/recovery by energy from waste plant. In addition, small quantities of maintenance and general site wastes will be produced.

#### 3.8.2 Waste Storage

The design of the new plant has taken into account the applicable HSE and EA guidance, fire / DSEAR risks and recognised best practice.

All waste will be stored within the existing Unit 5 building, and only stored temporarily in the distillation building (Unit 4) i.e. when transferred from IBCs (from Unit 5) into front end tanks ready for processing. All waste vessels, will be clearly identified, sealed and stored internally within a secured area protected by secondary containment (bundling).

## **4. ENVIRONMENTAL MONITORING**

### **4.1 Emissions to Air**

There are no point source emissions to air from the proposed development, therefore no monitoring is required.

### **4.2 Emissions to Controlled Water**

There are no point source emissions to controlled water arising from the process. Therefore, no monitoring is required.

### **4.3 Emissions to Sewer**

There are no point source emissions to sewer arising from the process. Therefore, no monitoring is required.

### **4.4 Emissions to Land**

There are no point source emissions to land arising from the process. Therefore, no monitoring is required.

## 5. IMPACT TO THE ENVIRONMENT

### 5.1 Impacts to Air

There will be no emissions to air arising from the proposed changes to the Waste Operation, other than the fugitive emissions noted in Section 3.1. Fugitive emissions will be reduced by housing the plant within a building and operating it under vacuum.

Therefore, there will be no impact to air from the proposed development.

### 5.2 Impacts to Land

There are no impacts to land relating to the proposed changes to the Waste Operation.

### 5.3 Impacts to Controlled Waters

There are no impacts to controlled water relating to the proposed changes to the Waste Operation.

### 5.4 Impact to Sewer

There are no impacts to sewer relating to the proposed changes to the Waste Operation.

## Annex A – Figures

## Annex B – Technical Data



## Annex C – Environmental Risk Assessment

## Annex D – Site Condition Report

## Annex E: Accident Management Plan

## Annex F: Environmental Management System Summary

## Annex G: WAMITAB Registration