



Operator	Bischof & Klein (UK) Ltd
Installation Address	Hortonwood 2, Telford, Shropshire, TF1 7XX.
Grid Reference	368365 313076
Registered Office	Hortonwood 2, Telford, Shropshire, TF1 7XX.

Bischof & Klein (UK) Limited is hereby permitted by Telford & Wrekin Council to carry on printing process under Section 6.4(A2)(a) and Section 7 of the Environmental Permitting (England & Wales) Regulations 2010 and other activities as listed and described below within the installation boundary marked red on the attached plan reference Appendix 3 and in accordance with the following conditions.

Provenance	Relevant Dates
Date Application Made (Deemed application)	date
Date 'Duly Made'	26.10.2010
Date Permit First Issued	23.2.2013
Date of Variations	N/A
Date of Latest Variation	08.03.16

This permit consists of 31 numbered pages

Description of the Installation

The installation consists of a four printing presses utilised for the production of flexible packaging for commercial industry using flexographic printing presses and solvent borne inks. The following description divides the Installation into its activities and elements both those scheduled under the above regulations and those non scheduled elements required to be regulated because of their polluting potential and that have a direct association and a technical connection to the scheduled activities.

All process steps encompassed within the printing activity are supported by specific equipment specifications, process controls, planned maintenance, quality assurance and product verification procedures. The printing activities, that include the use of solvent borne materials, have dedicated cycle times at all stages, defined operating efficiency targets, planned preventative maintenance programs, and in built breakdown criteria.

As a whole the installation falls within Section 6.4(A2)(a) and Section 7 of the Environmental Permitting (England & Wales) Regulations 2010 (as amended): as it has a Volatile Organic Compound (VOC) consumption greater than 200 tonnes per year it is a defined Solvent Emissions Directive (SED) activity.

The installation comprises the following activities and elements:

- 1 Polythene extrusion element
- 2 Raw material storage and ink preparation element
- 3 The Flexographic Printing activity
- 4 Waste Storage and solvent recovery element
- 5 Conversion of printed substrate element

The following text divides the installation as described above into its constituent parts, both those scheduled activities under the above regulations and those non scheduled activities required to be permitted because of their polluting potential and direct association and technical connection with the scheduled activities.

1. Polythene extrusion element

Polyethylene polymer granules are brought in from specialist suppliers and stored in one of the 14 50 tonne or one of 2 the 43 tonne capacity external silos. The granules are transferred from the silo and loaded into dedicated hoppers onto one of the 7 extruding machines, the polythene is heated and blown.

The substrate is corona treated once blown by a high voltage discharge to aid ink adhesion. Ozone gas is given off in the process and emitted direct to atmosphere.

This film is then wound into reels and stored prior to transport to the other side of the factory for printing. Some orders do not require printing. In this case the reels are supplied to the customer unprinted.

It is noted that whilst there is a direct association to the subsequent printing process, in that much of the material produced is then subsequently printed.

The Polythene extrusion element of the installation is technically connected and directly associated with the activities falling within Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2010

2. Raw Material Storage and ink preparation element

Ink and solvent that are purchased and delivered to the site are stored in an externally located fenced and locked compound to the rear of the factory building. All deliveries take the form of 205 litre sealed containers and 1 tonne IBC Where applicable, these are transported into the mixing room or decanted into 20 litre drums for ease of transport.

Raw materials in the form of inks are removed from the raw material storage area as and when required by press operators. The access to the Ink store is kept locked when not in use.

Ink preparation

Inks and solvent are transported to the fully bunded mixing room and temporarily stored for use. Specific formulations of ink are mixed according to the desired specification and are measured out on programmable scales to ensure consistency. The inks are stored in 205 litre drums, most mixing takes place in containers of no more than 20 litres. All solvent and ink materials are dispensed in a totally enclosed system to the mixing vessel. Rarely, inks or solvents will be added to a mixture by hand.

Given the enclosed mixing system, there is only passive venting (via ductwork to atmosphere) from the mixing room that is located at low level to collect any build up of VOC's in the mixing room. Therefore all emissions are fugitive.

Press returns storage

Excess ink returned from the presses is stored in the press returns store for future use either directly or by mixing with other ink. Press return inks are mostly stored in small sealed pails. The press returns store is a purpose built bunded area and any fugitive emission is vented to atmosphere and not to the RTO.

The Raw material Storage and Ink preparation element of the installation is technically connected and directly associated with the activities falling within Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2010 (as amended).

3. Flexographic printing activity

FOUR printing presses are operated at the site each prepared in much the same way utilising the same printing techniques, although presses have differing colour capabilities. The printing presses are prepared using the appropriate 'stereo' (a suitable design to be imprinted on the substrate). Ink and solvent are mixed to a specific ink formulation, typically containing about 65% solvent. The press ready ink is pumped into the machine at the ink tray from enclosed storage drums. The press is then operated and the stereo is coated with the ink and the appropriate substrate fed into the machine. The stereo impresses the desired design onto the substrate. The printed substrate then passes to a dedicated hot air 'flash off' drier and the print cures. The printed substrate is then wound onto reels for distribution to the customer.

The press is then washed down with solvent before commencing the next batch. All solvent used for cleaning purposes is collected for recycling. Ink and solvent wastes are recycled where possible.

The flexographic printing presses operated at the site are:

- 402 - Novoflex 8 colour
- 403 - Miraflex 8 colour
- 404 - Miraflex 8 colour (installed Dec 14)
- 405 - Miraflex 10 colour (installed July 15)

Abatement of VOC emissions

Emissions from the printing presses are ducted directly to a regenerative thermal oxidiser, a VOC abatement system capable of complying with emission limit values (ELV) contained within the permit. The abatement is based upon the thermal destruction of volatile organic compounds (VOCs) at 800°C using three ceramic beds (a 3 canister RTO).

The RTO is considered to achieve BAT in terms of VOC abatement. The technology is proven, robust, readily maintained and has low operating costs due to its 'autothermal operation' using the incoming VOC as the incineration fuel source rather than gas.

The RTO is optimised to maximise VOC destruction and has > 95% VOC destruction efficiency and minimise combustion gas releases. CO_x and NO_x releases are minimised by the unit's control systems. The RTO is fully interlocked and includes internal alarm systems to monitor operating efficiency.

Thermal incineration of waste gases is the chosen means of demonstrating compliance with emission limit values contained within the permit.

Flexographic printing is a scheduled Activity within Section 6.4(A2)(a) and Section 7 of the Environmental Permitting (England & Wales) Regulations 2010 (as amended).

4. Waste storage and solvent recovery element

All waste materials associated with activities using solvent borne substances are stored in appropriately sealed drums or containers and stored in the specified waste storage area marked on the plan in Appendix 4.

All liquid wastes containing VOCs are stored in the yard in a designated waste storage area marked on the plan in Appendix 4 with a bunded area capable of containing 110% of the volume of the largest container present. The area is uncovered, but handles rainwater via an interceptor.

Solid wastes from the installation are stored in a dedicated skip stored within the dedicated waste storage area.

The waste storage element of the installation is technically connected and directly associated with the activities falling within Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2010 (as amended).

Solvent Recovery Plant

The Flexowash solvent recovery plant is a small distilling oven that operates at approximately 80°C and is used to directly recover solvent from waste ink. The recovery plant distils the solvent in vapour form from the ink, which is then condensed and captured into a fully enclosed tank. Recovered solvent is then decanted directly into containers for re-use. Solvent is recovered from waste inks from the printing activities and any recovered solvent is re-introduced back into that activity.

Solid or sludge wastes are taken to the appropriate waste storage areas and are kept fully contained before being removed by an approved waste disposal contractor. The room in which the solvent recovery plant is located vents externally without abatement, however the solvent recovery plant itself is ducted into the RTO.

The solvent recovery element of the installation is technically connected and directly associated with the activities falling within Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2010.

Equipment Cleaning Tank (Wash Room)

The equipment-cleaning tank / wash room is used to clean various items associated with the printing presses. Solvent is circulated in the enclosed tank and sprayed over the items to be cleaned. The duration of the cleaning process is controlled by a timer. The solvent is collected in the base of the tank and reused until contaminated by a high level of solids. When replaced, the contaminated solvent is re-processed through the Solvent Recovery Plant. The cleaning tank is extracted to the RTO.

Cylinder/Plate stripping

The Cylinder/Plate stripping is the removal of printing plates from the printing cylinder. Water based cleaning solution is applied manually to dissolve the adhesive between the plates/stereos and cylinder. The plates/stereos are then placed in a tank of water based cleaning solution to remove any adhesive residue. This tank has a lid, which is kept closed and only opened to allow access.

The cleaning tank has no direct extraction to atmosphere fugitive emissions are passively vented either via open doors into the internal workspace or via an open exterior door to atmosphere.

5. Conversion of Printed Substrate element

Some of the printed substrate is subjected to conversion, whereby a dedicated conversion line cuts, rotates and folds the plastic into bags and then uses adhesive to glue the ends of the bags up. The adhesive is solvent based, as ethyl acetate is added to the adhesive before it poured into a trough on the line. The use of VOC in association with this adhesive line is less than 5 tonnes and so it is not a separate scheduled activity. Emission is extracted to the RTO abatement plant.

The conversion of printed substrate element of the installation is technically connected and directly associated with the activities falling within Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2010 (as amended).

Table 1. Quantities of Materials Used

Raw Material	Usage (2015) (tonnes/annum)	Activity/Element
Solvent 7210	580	2,3,5
No. 28 Printing Solvent	2	2,3,5
Ethyl Acetate P Grade in Bulk	190	5
Normal Propyl Acetate	0.5	2,3,5
Ethoxy Propanol	3	2,3,5
Propan -1-ol	0.3	2,3
Adhesive (prior to addition of Ethyl Acetate)	N/A	1
Polythene Film (Substrate)	N/A	1
Printing inks (as purchased) at 65% solvent	157	2.3.5



Table 2. List of plant and equipment concerned with the installation

Plant or Equipment used	Activity/Element	Machine reference numbers	Abatement	Emission Points
402 Novoflex 8 colour press	3	402	RTO	A1
403 Mireflex 8 colour press	3	403	RTO	A1
404 Mireflex 8 colour press	3	404	RTO	A1
405 Mireflex 10 colour press		405	RTO	A1
Mixing Room	2	Mixing Room	Fugitive	Fugitive
Solvent Recovery Plant	4	'Still'	RTO	A1
Equipment Cleaning Tank	4	'Wash Room'	RTO	A1

Extruder Descriptor	Activity/Element	Plant Reference	Associated Plant	Additional Plant
W&H Coex Extruder	1	340	Chiller Unit	Corona Treatment Unit Pair of Winder Units
W&H Coex Extruder	1	352	In Line Printer	Corona Treatment Unit Single Winder Units
W&H Coex Extruder	1	342	Chiller Unit	Corona Treatment Unit Pair of Winder Units
W&H Mono Extruder	1	360	Inkjet Printer	Single Winder Unit
W&H Mono Extruder	1	370	-	Corona Treatment Unit Pair of Winder Units
W&H Mono Extruder	1	372	Chiller Unit	Corona Treatment Unit Pair of Winder Units
W&H Mono Extruder	1	373	Chiller Unit	Corona Treatment Unit Pair of Winder Units

*the emission stack from the RTO has a failsafe safety relief valve that triggers to protect the device, in such circumstances the emissions are direct to atmosphere. Similarly, in the event of fan failure for the extraction system, each press has a bypass to an alternate emission point.



Plant concerned with preventing emissions to atmosphere

Table 3 (below) identifies the abatement plant or production equipment that discharges to atmosphere via the identified emission stack. Equipment and emission stacks that emit direct to atmosphere are unabated emission points. Emissions that are vented internally to the installation are not listed and should be assumed to be fugitive emissions.

Table 3 Abatement plant and Emissions

Plant or Equipment used	Abatement Type	Emission Points	Pollutants
Regenerative Thermal Oxidiser (RTO)	Incineration	A1	VOC, NOx, CO, smoke
Mixing Room	Fugitive	A2	VOC
Press return storage room	Fugitive	A3	VOC
Cylinder/plate stripping	Fugitive	A4	VOC
Solvent recovery plant	Incineration	A1	VOC
Equipment cleaning tank	Incineration	A1	VOC

Legend: VOC – Volatile Organic Compound,
CO - Carbon Monoxide,
NOx – Oxides of Nitrogen

Permit Conditions

Plant & Equipment

- 1.1 The permitted installation shall consist only of that plant and equipment listed in Table 2 (above). No other relevant plant or equipment capable of emitting pollutants to air shall be used without the prior written consent of the regulator.
- 1.2 Printing presses shall not be used unless the regenerative thermal oxidiser (RTO) and local exhaust ventilation (LEV) are operational and at the correct temperature in accordance with condition 3.4 unless it is otherwise agreed with the regulating authority.

Emission Limits and Controls

- 2.1 There shall be no visible emissions from the permitted installation.
- 2.2 Emissions from the permitted installation, other than steam or condensed water vapour, shall be free from persistent mist and free from persistent fume.
- 2.3 Emissions from final point of discharge to atmosphere serving the emission points listed in Table 3 shall not exceed the following concentrations of the substances and chemicals listed in Table 4 below:

Table 4 – Permissible emission limit concentrations

Pollutant	Concentration
Carbon Monoxide (CO)	100 mgm ³ as a 15 min mean
Volatile Organic Compounds (VOC)*	50 mgm ³ as a 15 min mean
Nitrogen Oxides (NOx)	100 mgm ³ as a 15 min mean

*Volatile Organic Compounds, (as Carbon).

The concentrations for the pollutants in table 4 (above) shall only apply where the emission point listed in Table 3 specifically identifies the pollutant as being emitted.

- 2.4 The concentrations of the substances listed in condition 2.3 shall be expressed at reference conditions. 273K, 101.3kPa, without correction for water vapour content and the results of the monitoring shall be expressed in milligrams per cubic metre (mg/m³) and averaged over 15 minutes unless otherwise stated.
- 2.5 No piece of plant or equipment mentioned in condition 1.1 above (or any replacement used for the same purpose) shall be operated with an emission point direct to atmosphere unless specifically allowed within this permit or specifically agreed in writing with the regulator.
- 2.6 The introduction of dilution air to achieve compliance with emission limit values (ELV) shall not be permitted.



In the event that an emission stack can be demonstrated to be compliant with condition 2.3 above, dilution air may be added to render harmless a visible or odorous emission.

- 2.7 All emissions from the plant listed in Table 2 shall be ducted to suitable abatement plant capable of meeting the same standard as is indicated in condition 2.3.
- 2.8 Any bypass of the abatement plant shall be deemed an emergency and steps shall be taken to stop the process (or part thereof). The Council shall be immediately notified of any breakdown of the RTO or the LEV / ductwork system, other than power cuts.
- 2.9 Fuel used for any combustion plant (denoted by the word 'smoke' appearing in the list of pollutants) listed in Table 3 shall have a sulphur content of no more than 1% wt/wt sulphur in fuel, or, if gas oil is used, no more than 0.1%.

Monitoring, Sampling and Measurement of Emissions

- 3.1 The installation shall be observed for visible emissions at least once per day, or more often as may be prescribed in writing by the regulating authority, from a point providing an unimpeded view of the emissions points for the prescribed process. In the event of visible emissions being observed, immediate action shall be taken to (determine the cause of) and resolve the malfunction responsible for the emission, and, if necessary, action shall be taken to abate the emission.

Contingency arrangements shall be instigated to prevent or reduce to a minimum any further visible emissions caused by the malfunction. The regulator shall be notified of any such occurrence as soon as practicable.

The results of the observations shall be recorded in the logbook (required to be kept by condition 3.2), along with details of remedial action taken.

- 3.2 A logbook shall be established and maintained which contains a record of all visual observations made in accordance with condition 3.1 and the results of the monitoring programme carried out in accordance with conditions 3.4 and 3.5. The records shall include the time and date of the observations, the location from which the observations were made, the wind direction, the weather conditions, the likely source of the emissions to air, details of any corrective action taken, and the name and position within the Company of the person undertaking the observations. The logbook shall be kept available for inspection by an authorised officer from the regulating authority at the premises occupied by the Company, and the records shall be retained for at least two years. The log may be paper based or electronic.

The results of all continuous monitoring shall be recorded (in a form to be agreed with the regulator within 3 months of issue of the permit), and retained for at least two years. These results shall be made available for inspection by an authorised officer of regulating authority on request. All results from periodic monitoring exercises shall be retained for at least two years from the date of the

same. The log book shall also include any other information or documentation as may be required to be kept by other conditions within this permit.

- 3.3 Emissions from the final point of discharge to atmosphere from the RTO shall be sampled for concentrations of the substances listed within table 4 annually.

All Sampling shall be carried out in accordance with recognised standards as agreed with the regulator prior to monitoring taking place. The date of sampling shall be notified to the regulator at least 7 days prior to the sampling taking place. Results shall be expressed in accordance with the requirements of condition 2.4 and the results of monitoring to be supplied to the regulating authority within 28 days of completion of the monitoring. Further, monitoring reports shall be submitted in both paper copy as a summary and in full in an electronic format.

- 3.4 The operator shall continuously monitor the temperature of the RTO and shall ensure that the minimum temperature is 800°C with a tolerance of $\pm 10^\circ\text{C}$ for start up. The RTO is to be fitted with an audible and visual alarm to be triggered in the event that the device ceases to operate within this $\pm 10^\circ\text{C}$ temperature range.

Any sounding of an alarm shall be recorded in the log book required to be kept in accordance with condition 3.2.

- 3.5 The operator shall continuously monitor and record carbon monoxide emissions from the RTO; the emission limit shall be 100mg/Nm³ measured as 15 minute mean.

- 3.6 The operator shall construct an inventory of solvent use within the installation. The inventory shall be carried out by recording:

- (i) The mass of solvent contained in inks, coatings, diluents and cleaners in the initial stock (I_s) at the start of the accounting period, plus,
- (ii) The mass of solvent contained in inks, coatings, diluents and cleaners in the purchased stock (P_s) during the accounting period,
- (iii) Minus the mass of solvent contained in inks, coatings, diluents and cleaners in the final stock (F_s) at the end of the accounting period.

Then Total Solvent Input (I_1) = $I_s + P_s - F_s$

The inventory shall specifically and separately identify any VOCs carrying any of the R-Phrases as prescribed within the Solvent Emissions (England & Wales) Regulations 2004.

Further, having calculated total solvent Input (I_1), the operator shall then calculate solvent consumption by subtracting from the Input figures any solvent that is sent out for recovery.

Hence: C (consumption) = $I_1 - O_s$



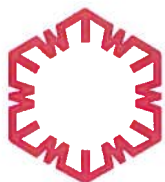
The inventory and consumption data shall be submitted to the regulating authority on the 1st April for the preceding 12 months solvent use, every year. (see Appendix 1).

Materials Handling

- 4.1 The raw materials used in the installation and all waste materials produced from the activities therein shall be handled with care to prevent or reduce to an absolute minimum any emissions to air.
- 4.2 Spillages of liquids and finely divided materials shall be cleaned up immediately. Liquid spillages shall be contained and cleaned up by the use of a suitable absorbent material. Spillages of finely divided or powdery materials shall be cleaned with an industrial grade vacuum cleaner or by wet cleaning methods. Dry sweeping shall not be permitted.
- 4.3 The fixed storage tank in the raw material store which is used for ethyl acetate (or any other VOC) shall be fitted with a high level alarm, which shall be interlocked to the filling system to prevent overfilling.
- 4.4 All raw materials and waste materials shall be delivered only into the storage and waste storage areas marked and designated on the plan in Appendix 4 and nowhere else within the installation.

Raw material or waste noted to be outside the designated areas shall be considered a spillage and shall be dealt with in accordance with condition 4.2.

- 4.5 Drums and containers containing liquid materials, whether full, partly full or empty, shall be stored in a secure, well-ventilated storage area as noted in condition 4.4 (above). All full, partly full or empty drums and containers shall be kept tightly closed to prevent any emissions to air.
- 4.6 Mixing of inks with solvents shall be carried out in covered or enclosed mixing vessels or within areas where LEV extraction is present which is ducted to suitable abatement plant, if required to meet the emission limits stipulated in condition 2.3.
- 4.7 The emissions from the emptying of mixing vessels and from the transfer to printing machines shall be adequately contained to minimise emissions of fugitive VOCs, by the use of closed transfer systems. This shall be achieved by the use of enclosed mobile containers, containers with close-fitting lids, or, enclosed containers with pipeline delivery. Programmable scales shall be used during the mixing and preparation of inks to reduce solvent usage.
- 4.8 Application of cleaning solvents shall only be:
 - From a contained device or automatic system when applied directly on to machine rollers, or
 - Dispensed by piston type dispenser or similar contained device, when used on wipes, or Via the use of Pre-impregnated wipes which shall be held within an enclosed container prior to use.



- 4.9 Solvent Wipes and other items contaminated with solvent shall be placed in a suitably labelled metal bin fitted with a self-closing lid. Bins shall be emptied at least daily. Special bins ('flame containers' or similar) that allow air to circulate beneath and around them to aid cooling shall be used for materials that may undergo spontaneous combustion.

- 4.10 Where cleaning solvents are decanted into other containers they shall only be contained in self-closing containers.

A review programme shall be undertaken to determine whether organic solvent free cleaning fluids or significantly less volatile organic solvent cleaning fluids can be used (with or without the addition of mechanical, chemical or thermal enhancements) in preference to the traditional solvent based cleaners in use at the date of issue of this permit. The evaluation shall be completed within 3 months of issue of the permit and shall provide details of potential substitute cleaning materials. Where materials are identified that can replace existing cleaning solvents, these shall be placed in use within 3 months of completing the review programme.

The review programme itself shall be repeated every two years from the date of issue of this permit. A copy of the review programme shall be kept with the log book required to be kept by condition 3.2.

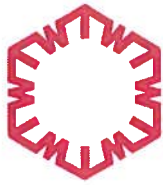
- 4.11 Where fixed equipment is cleaned in-situ (e.g. print rollers and plates), the area shall be kept enclosed whilst cleaning is carried out. At all times during the cleaning operations the LEV and the RTO shall be fully operational.

Where equipment is cleaned off-line (such as plates, drums, rollers and ink trays) it shall be carried out in enclosed cleaning systems, such as in the Wash Room. Enclosed cleaning systems shall be sealed to prevent emissions whilst in operation, except during purging at the end of the cleaning cycle. Purging of any cleaning systems in use shall only be through the fully operational LEV and incinerator

- 4.12 Residual ink contained in parts of the press shall be removed prior to cleaning.

Dispersion of Contained Emissions

- 5.1 The final efflux velocity of all emissions to air from any contained source must not be less than 15 m/sec.
- 5.2 Chimneys and vents listed in Table 3 from which it is necessary to achieve dispersion of the residual pollutants shall discharge vertically straight upwards and shall not be fitted with any restrictive plates, caps or cowls at the final opening.
- 5.3 The stack serving the RTO shall discharge vertically at a height of not less than 18m above ground level, as calculated and submitted in 1998 to the Council in accordance with the document entitled, "The Determination of Discharge Stack Heights for Polluting Emissions", published by the HMIP.



- 5.4 Any emission stack bypassing the RTO (or any replacement or additional arrestment plant used for the same purpose) shall be maintained at a height of no less than 1m above the roof ridge.

General Conditions

- 6.1 Regular cleaning and effective preventative maintenance in accordance with the manufacturer's instructions shall be employed on all plant, equipment and ductwork concerned with the emission, capture, transport and control of emissions to atmosphere. This shall include annual inspections of the ductwork serving the LEVs and RTO. Such cleaning and maintenance procedures shall be updated from time to time as may be necessary to account for changes in working practice or plant and machinery or solvents used. Records of such preventative maintenance shall be kept readily available for inspection.

Spares and consumables, in particular, those subject to continual wear, shall be held on site, or shall be available at short notice so that plant breakdowns can be rectified rapidly.

- 6.2 Staff at all levels shall receive the necessary formal training and instruction in their duties relating to control of the process and emissions to air. Records shall be kept which detail all relevant training provided to staff, the records shall be made available for inspection by an authorised officer from the regulating authority. Records of training shall be retained for two years.
- 6.3 If there is any intention to make any relevant change to any aspect of the installation from that described in this permit, or any other aspect which may affect the substances or concentration of substances set out in condition 2.3 being emitted to air, the regulating authority shall be notified of the proposed changes at least 4 weeks before the changes take place.
- 6.4 Any malfunction which results in emissions to atmosphere which are likely to cause an adverse effect on the local community shall be reported to the regulator as soon as reasonably practicable, and a record shall be made of the incident within the logbook required by condition 3.2.
- 6.5 The operator shall respond to any written request made by the Regulator for the purposes of complying with your obligation to report your pollutant releases and off-site waste transfers pursuant to the directly applicable EU duty in accordance with Article 5 of EC Regulation No 166/2006 concerning the establishment of a European Pollutant Release and Transfer Register. As a permit condition, your failure to respond in accordance with such annual E-PRTR will hereby constitute a breach of your permit.



Air Quality

- 7.1 If so required by the Borough of Telford and Wrekin, the operator shall prepare a list of all emission points, and related pollutant emissions to atmosphere based on Table 2 (above). The operator shall provide details (where known) of the emissions of those pollutants to atmosphere as a result of any sampling that may be carried out (see condition 3.3 (above). Where sampling is not carried out, the operator shall prepare an estimate of the emissions to atmosphere based on data collected in accordance with conditions 3.6 and 8.2.

Where sampling is carried out, no correction for atmospheric pressure or water vapour need be made.

If so required by Borough of Telford and Wrekin, the operator shall also submit for each point of emission to atmosphere details of stack height, volume flow rate and stack diameter, as well as the height, width and length of the building to which the stack (or stacks) are attached.

If so required by Borough of Telford and Wrekin, the results shall be tabulated and submitted in Microsoft Excel format and shall be sent to the following email address (or another to be specified by the regulator):

environmental.health@telford.gov.uk

Such information shall be submitted as and when requested by the regulator.

Solvent Emissions Directive Requirements

- 8.1 The total emissions of VOCs, which are not vented through the abatement equipment listed in Table 2, shall not exceed 20% of the solvent inputs, as determined from the Solvent Management Plan.
- 8.2 Based on the data compiled for condition 3.6 and the descriptions in Appendix 1, the operator shall calculate the percentage of fugitive emissions applicable to the installation.

To demonstrate compliance with fugitive emission values in required in condition (8.1) above, the operator shall determine the fugitive emissions (F) from the activity using the following:

$$F = I1-O1-O5-O6-O7-O8$$

Or

$$F=O2+O3+O4+O9$$

Definitions of the outputs ("Os" are shown in Appendix 1. Each can be determined by direct measurement of the quantities or, an equivalent calculation can be made by other means, for instance by using the capture efficiency of the process.

The Fugitive Emission value as a percentage of the Solvent Input (I) is determined by

$$\text{Fugitive Emission Value} = 100 \times F/I$$

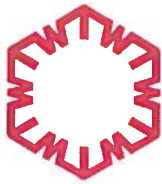
$$\text{Where the Solvent Input (I)} = I1 + I2$$

Fugitive emission values must be determined for the activity, and must be repeated when any equipment or process modification is carried out. (see Appendix 1).

- 8.3 At no time shall the operator introduce any substance or preparation into the installation that is labelled with the risk phrase of R45, R46, R49, R60 or R61, without the prior written consent of the regulator. Substances or preparations already in use shall be replaced with non-designated substances in accordance with a scheme to be submitted to the regulator within 3 months of issue of this permit.
- 8.4 The operator has currently selected the emission limit route for demonstrating compliance with the requirements of the solvent emissions directive. Should the operator wish to change the compliance method to the alternative reduction scheme route, an application in writing must be submitted to the regulator along with an appropriate calculation demonstrating compliance with the required Target Emission.

9 Land Contamination

- 9.1 Before this permit can be surrendered the operator shall provide the regulator with a validated report showing that all contamination of the site by chemicals listed in Table 1 of any variant of this permit have been so treated as to bring the site back to the same state as before the issue of this permit.
- 9.2 To this end the operator shall;
Within six months of the issue of this permit provide a ground contamination report that shows the levels of chemicals listed in Table 1 of this permit that have leached into the site before the issue of this permit.
or;
Provide the regulator with a certificate that the operator agrees that all ground contamination of the site with the chemicals listed in Table 1 will be removed from the site before the permit is surrendered.
- 9.3 All containers used for solvents and inks used in the process shall be stored and used in bunded areas which are capable of holding 110% of the largest container used for such storage whether the container is full or nominally empty.
- 9.4 The operator shall
- Devise and record a management plan for ensuring that the installation site hard covering is maintained in such a manner as to remain impervious to any of the items listed in Table 1.



- All drains within the installation shall be identified and a written management plan shall be implemented for ensuring that any items listed in Table 1 are prevented from entering the drains.
- submit to the regulator a management plan for the control of solvents and inks when they are moved outside any bunded area.

9.5 On completion of the management plans required in condition 9.4 the operator will instigate any improvement measures identified as being required in that plan.

10 Noise Emissions

10.1 The operator shall:

- Carry out a survey of the installation and identify any plant or equipment likely to give rise to noise. The survey shall specifically identify plant or equipment capable of being heard at the installation boundary.
- Annually review the noise survey of the installation such that any changes to the plant or equipment noted in Table 2 (above) are identified and the survey updated appropriately.
- Construct a noise management plan based on the survey which shall include the following:
 - ≈ A statement of policy with regard to dealing with complaints
 - ≈ A documented complaint procedure for the investigation, analysis, determination, and solution to noise problems
 - ≈ Details of routine maintenance undertaken in particular to deal with noise issues
- Construct a register of complaints regarding noise emissions from the installation

The operator shall update the information annually or upon written request from the regulator. All documentation required to be produced by this condition shall be retained in the log book required to be kept in accordance with condition 9.5.

10.2 It shall be an absolute requirement that any new plant or equipment brought into the installation, or any plant or equipment that undergoes significant modification, shall demonstrate Best Available Technique (BAT).

Unless already meeting BAT requirements, the operator shall demonstrate that sound power levels for substantially changed plant or equipment shall be lower than for existing. The procedure listed in condition 10.3 below shall be used.

10.3 No new plant or equipment shall be permitted within the installation except where:

- (i) The plant or equipment can be demonstrated to have a minimal environmental impact. For the purpose of this condition 'minimal' shall be taken to mean that, the plant or equipment, if monitored under requirements of BS4142:2014, has a rating level of 0dB (when compared to the background level), or is otherwise inaudible.

or



- (ii) Where plant or equipment cannot be demonstrated to meet the standard above, a full noise survey shall be carried out and the results modelled to show the specific impact of the new plant or equipment on the environment. The modelling exercise shall take account of any relevant noise abatement measures. The results of the modelling shall be submitted to the regulator and shall demonstrate BAT.
The modelled plant or equipment shall be permitted within the installation only where written consent of the regulator has been obtained.

- 10.4 In the event of the regulator receiving a complaint of noise associated with any element or activity within the installation boundary, the operator shall:
- (i) Be required to investigate the source of the complaint.
 - (ii) Carry out such monitoring, surveys or modelling of the source of the complaint to demonstrate, to the satisfaction of the regulator, either:
 - (a) that the complaint is unfounded, or
 - (b) the complaint has substance.

Where (ii)(b) above is found to be the case, the operator shall arrange to carry out such works or change procedures or processes in such a way, that a re-assessment carried out in (ii) above comes to the conclusion in (ii)(a).

All time scales in relation to aspect of this condition to be set by the regulator in the event of complaint being received. Typically, 10.4(i) shall take no longer than 48hrs from the date of notification, whilst 10.4(ii) may take considerably longer dependent on the work required to be undertaken.

11 Waste Minimisation

11.1 The operator shall:

- Maintain an inventory covering the principal types of raw materials used (as listed in Table 1) to be submitted to the regulator annually based on consumption of raw materials for the previous year.
- Review alternatives for the principal types of raw materials used with regard to their environmental impact. Such reviews shall be submitted to the regulator every four years.
- Maintain records to demonstrate that quality control procedures are used to minimise any potential environmental impact of raw materials. Notably this shall include ensuring that raw materials are free from contamination, and are supplied and stored in a manner such that contamination cannot occur
- Undertake to complete any long term studies needed into the less polluting options and make any material substitutions identified within the review period. Such studies will be identified as and when required by the regulator and requested in writing.

All information required by this condition shall be submitted to the regulator annually, or where such information is requested every four years from the date of issue of the permit as may be required for long term studies. All such information shall be retained by the operator and kept with the log book required to be kept in accordance with condition 3.2.

- 11.2 The operator shall demonstrate that a systematic approach to the reduction of waste at source is being used.

The operator shall carry out a waste minimisation audit every 6 years. The methodology used and an action plan for optimising the use of raw materials shall be submitted to the regulator within 2 months of completion of the audit.

Specific improvements resulting from the recommendations of audits shall be carried out within a timescale approved by the regulator.

- 11.3 The operator shall, within 4 weeks of submitting the information required by condition 11.1, also calculate the following indicators of waste minimisation performance expressed as a ratio:

- (i) tonnes of polythene material melted v tonnes of good product
 - (ii) tonnes of printed product v tonnes of good product.
 - (iii) tonnes of town's water consumed in the operations v tonnes of good product.
 - (iv) the amount of water recycled expressed as a percentage of total water usage in the operations.
 - (v) tonnes solvent used v mass of solids in lay down weight of coatings.
- All such information shall be retained by the operator and kept with the log book required to be kept in accordance with condition 3.2.

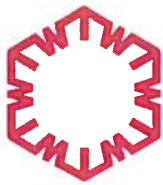
Where any of the above parameters are not specifically monitored, arrangements shall be made to undertake monitoring of the use of the material within 8 weeks of issue of this permit.

12 Energy Efficiency

- 12.1 The operator shall ensure that the appropriate measures have been implemented to ensure the required quality of polythene film is produced in the most energy efficient manner. Special attention shall be given to melt temperature control. The operator shall monitor temperature readings to ensure that temperature control is optimised.

Thereafter, the operator shall ensure, as far as is reasonably practicable, that the optimum temperature for the production of polythene film is maintained whilst the extruders are operational.

- 12.2 Where gas-fired heating systems are used within the installation, particular attention shall be paid to good cleaning and maintenance of burner systems.
- 12.3 The operator shall produce an annual report on the energy consumption of the installation. The report shall monitor energy usage for the installation and identify target areas for reduction and shall be updated annually. ("Sankey" diagrams and energy balances would be useful as aids.)
- 12.4 The operator shall ensure that all plant listed in Table 2 is operated and maintained to optimise the use and minimise the loss of energy.



12.5 The operator shall within 4 weeks of submitting the information required by condition 12.4, also calculate the following indicators of energy efficiency performance expressed as a ratio:

- (i) Electricity v good tonnes produced.
- (ii) Natural gas v good tonnes produced.

All such information shall be retained by the operator and kept with the log book required to be kept in accordance with condition 3.2.

Where any of the above parameters are not specifically monitored, arrangements shall be made to undertake monitoring of the use of the energy source within 8 weeks of issue of this permit.

12.6 In respect of energy efficiency, the operator shall meet the requirements of either:

- (i) Climate Change Agreement (CCA), or
 - (ii) Direct Participation Agreement (DPA);
- in addition to the requirements of conditions 12.1 to 12.6 (above).

Where neither (i) nor (ii) above are complied with the operator shall notify the regulator immediately.

13 Prevention of Accidents

13.1 The operator shall produce an accident management plan that identifies the hazards, assesses the risks and identifies the measures required to reduce the risk of potential events or failures that might lead to an environmental impact. The plan shall identify:

- the actions to be taken to minimise these potential occurrences; and
- the actions to deal with such occurrences so as to limit their consequences

In the case of abnormal emissions arising from an accident, such as a spillage for example, the operator shall:

- investigate immediately and undertake remedial action as soon as practicable.
- promptly record the events and actions taken.
- ensure the regulator is made aware, as soon as practicable.

In the event of an accident occurring, the operator shall follow the prescribed instructions within the accident management plan. In an emergency situation it shall be sufficient to demonstrate that any divergence from the plan was necessary either:

- in the interests of health and safety.
- as a result of instructions from a suitably qualified member of the emergency services (fire, ambulance, police).
- as a result of instructions from a duly authorised officer of the Health and Safety Executive.
- as a result of instructions from the regulator.
- As a result of instructions from a duly authorised officer of the Environment Agency.

The accident management plan shall be reviewed annually and a copy shall be submitted to the regulator upon written request. A copy of the accident management plan shall be kept with the logbook required to be kept be condition 3.2.

The information shall be recorded in a form to be agreed with the regulator but can include both electronic and hard copies, and shall be retained for at least two years. This information shall be made available for inspection by an authorised officer of regulating authority on request. Where information is updated or modified, copies of the modified information shall replace those held within the logbook.

14 Decommissioning the Installation

14.1 A site decommissioning plan shall be submitted to the regulator within 4 months of issue of this permit. The plan shall be prepared and updated as may be necessary due to changes in plant, equipment or materials used within the installation. In any event the plan shall be reviewed and resubmitted every 3 years from the date of the first submission. The plan shall include:

- A complete methodology to be adopted in the decommissioning of the installation, to include:
 - Removal of key plant or machinery likely to be contaminated.
 - Removal of contamination associated with the plant and machinery.
 - Minimising any contamination from the installation buildings during demolition.
 - Removal of contaminated subsurface infrastructure as may be necessary.
- An assessment of the impact of decommissioning on the nearest sensitive receptors.
- The Preparation of a ground contamination report to include the testing of soil within the decommissioned installation to demonstrate contamination levels are no greater than those submitted in Operators application site reports.

In relation to this permit, any reference to the 'Local Authority' or 'the regulator' shall mean the Borough of Telford and Wrekin. Any information required by this authorisation to be sent to the Local Authority or the regulator shall be sent to the address noted below:

Signed.....
SCIENTIFIC OFFICER

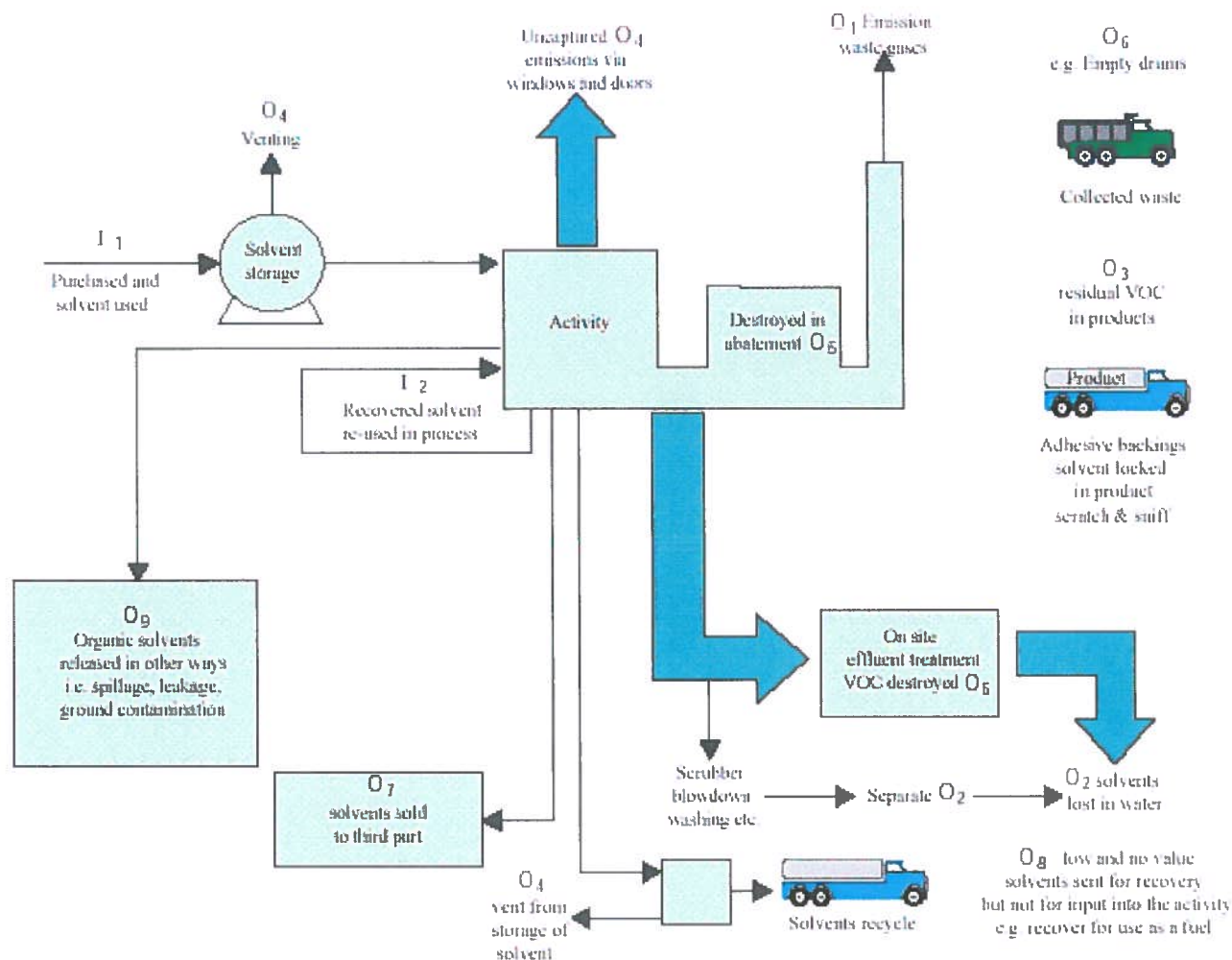
Date.....8th March 2016.....

Authorised by the Borough of Telford and Wrekin
To sign in that behalf

Borough of Telford & Wrekin
Pollution Control Section
Social Care
P.O. Box 214
Civic Offices
Telford TF3 4LE



Appendix 1: Solvent Management Diagram



Solvent management plan

$$\text{Consumption} = I_1 - O_8$$

$$\text{Actual solvent emission} = I_1 - O_5 - O_6 - O_7 - O_8$$

$$\text{Fugitive emission (F)} = I_1 - O_1 - O_5 - O_6 - O_7 - O_8$$

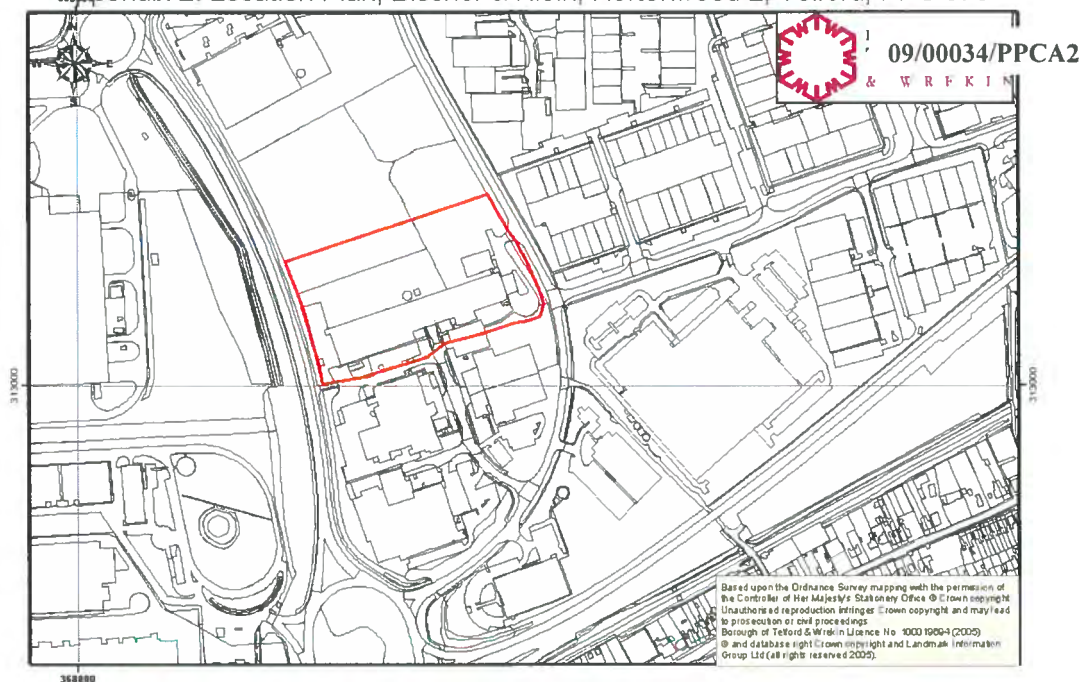
$$\text{or } F = O_2 + O_3 + O_4 + O_9$$

Solvent Emission Directive (SED) activities

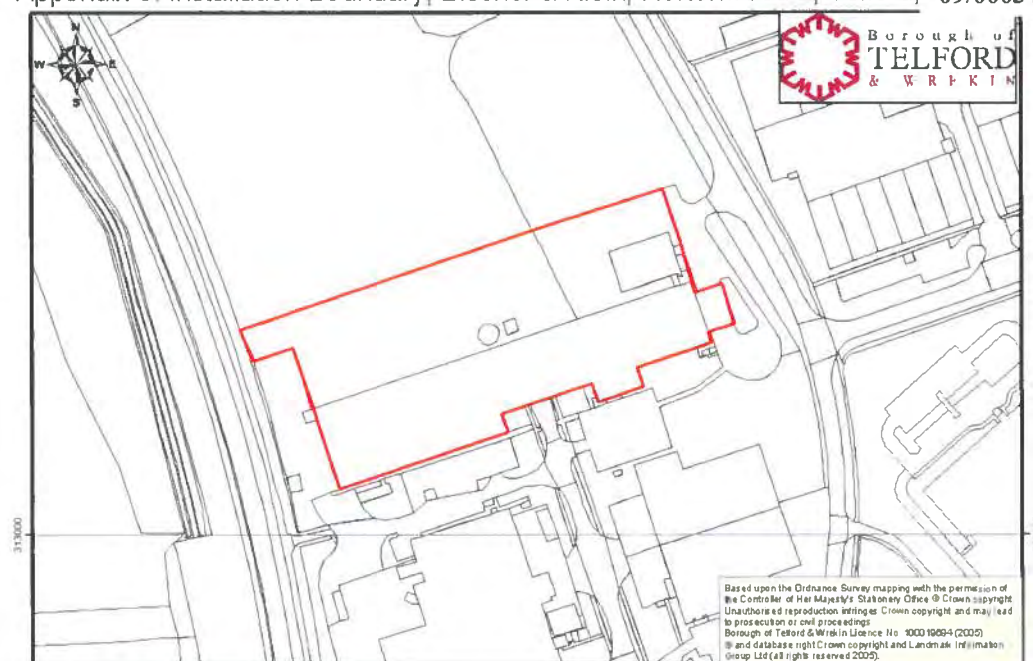
$$\text{Fugitive emission value} = \frac{F}{I_1 + I_2} \times 100\%$$

$$\text{Total emission} = O_1 + \text{Fugitive emission (F)}$$

Appendix 2: Location Plan, Bischof & Klein, Hortonwood 2, Telford, PPC 073



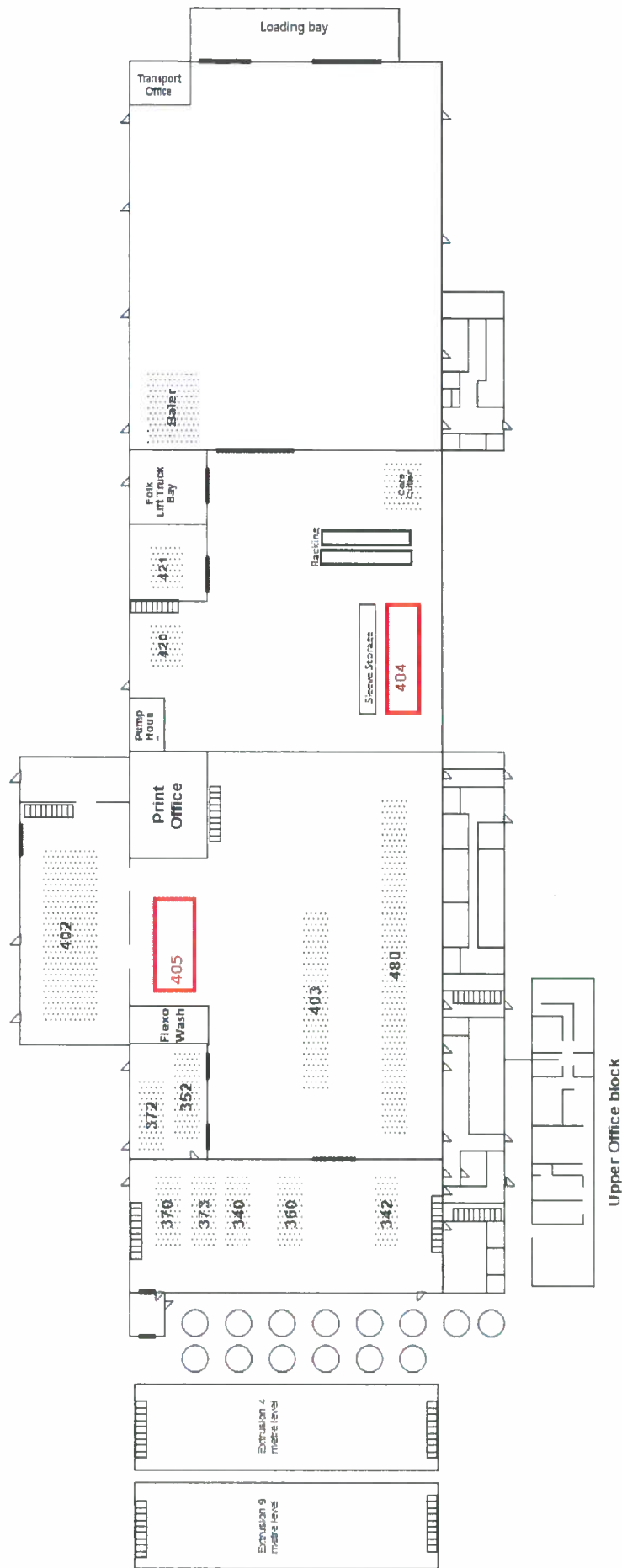
Appendix 3: Installation Boundary, Bischof & Klein, Hortonwood 2, Telford, 09/00034/PPCA2



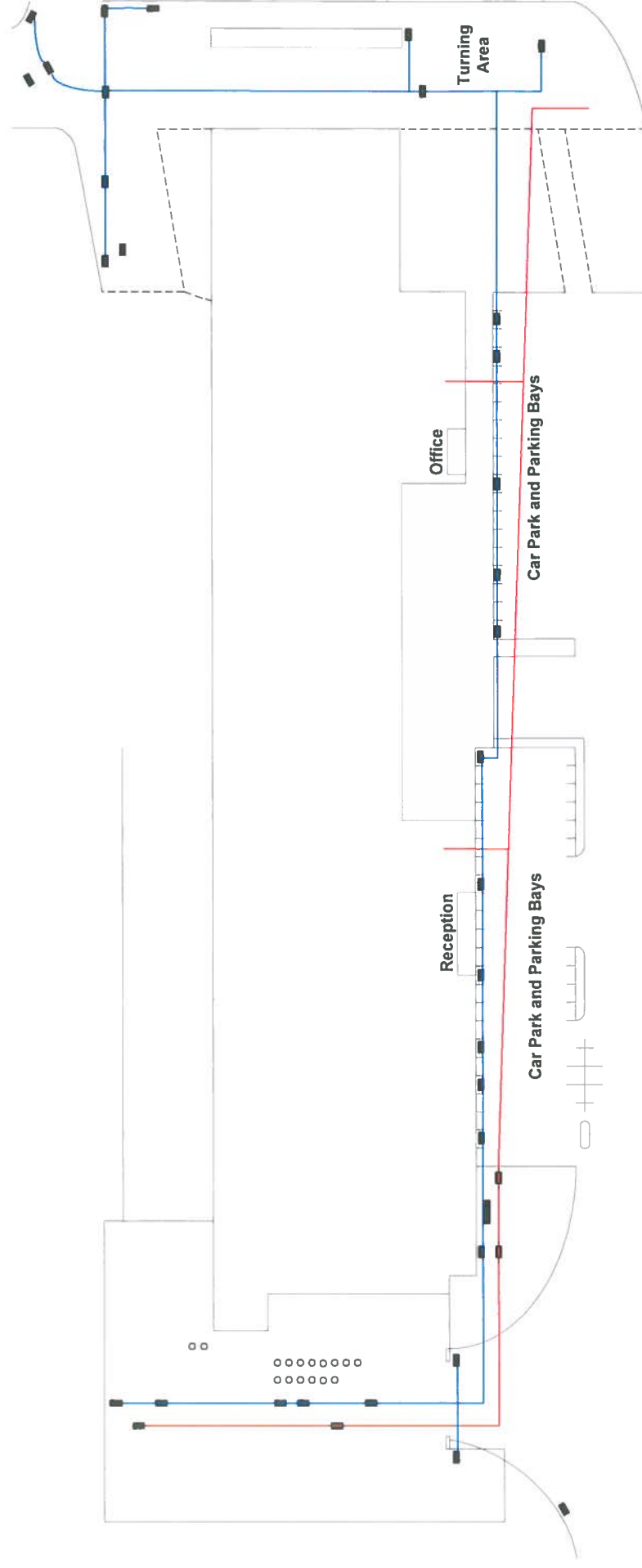


Appendix 4:

Factory Plan



Appendix 5: Site Drainage Plan





Glossary of Terms/Definitions:

Activity	One or more stationary technical units falling within the defined sections of the Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2007
Coating	Means a preparation, including all the organic solvents or preparations containing organic solvents necessary for its proper application, which is used in a vehicle refinishing activity to spray onto a motor vehicle.
ELV	Emission Limit Values, those values stipulated in the SED or in guidance for emission of particular pollutants to atmosphere.
Halogenated Organic solvent	shall mean an organic solvent which contains at least one atom of bromine, chlorine, fluorine or iodine per molecule
Installation	One or more stationary technical units comprising at least one activity or activities falling within the description of Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2007 within a defined area.
LEV	Local Exhaust Ventilation – ducting and hoods normally associated with small uncontained plant or equipment.
Organic solvent	Means any VOC which is used alone or in combination with other agents, and without undergoing a chemical change, to dissolve raw materials, products or waste materials, or is used as a cleaning agent to dissolve contaminants, or as a dissolver, or as a dispersion medium, or as a viscosity adjuster, or as a surface tension adjuster, or a plasticiser, or as a preservative.
Organic compound	Means any compound containing at least the element carbon and one or more of hydrogen, halogens, oxygen, sulphur, phosphorus, silicon or nitrogen, with the exception of carbon oxides and inorganic carbonates and bicarbonates.
EPR	Environmental Permitting Regulations , the new pollution control regime replacing that under PPC.
Regulator	Means the Pollution Control Section of the Telford & Wrekin Council. When contacting the regulator it is not sufficient to contact any other part of the council other than the Pollution Control Section at the address specified in the additional notes or at the telephone numbers provided.



R-Phrase

Means the same as in Directive 67/548/EEC as follows:

R Phrase	Definition
R40	Limited evidence of carcinogenic effects
R45	May cause cancer
R46	May cause heritable genetic damage
R49	May cause cancer by inhalation
R60	May impair fertility
R61	May cause harm to the unborn

Designated risk phrase the designation or label given to a coating or preparation (as a whole). The mere fact that a preparation or coating contains r-phase chemicals does not in itself always make a material r-phrase.

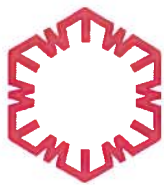
SED Solvent Emissions Directive or 'COUNCIL DIRECTIVE 1999/13/EC of 11 March 1999 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations'.

STU Stationary Technical Unit shall have the same meaning as in the Pollution Prevention and Control Regulations, but in summary shall mean, one machine used for the purpose of printing on flexible packaging or one machine used in connection with that activity, e.g. an RTO. There must be at least 1 STU per activity, but it is possible to have multiple STU's still comprising only one activity.

Volatile Organic Compound (VOC) Shall mean any organic compound having at 293,15 K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under the particular conditions of use. For the purpose of the Solvents Emissions Directive, the fraction of creosote which exceeds this value of vapour pressure at 293.15 K shall be considered as a VOC.

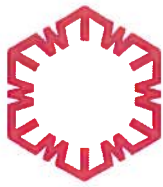
Cyclone An inertial gas cleaning device, which separates dust from the gas stream when the direction of the gas flow is changed and the dust continues in the original direction by virtue of its inertia and is deposited on a collection surface / catch pot. The inlet gas is channeled into a spiral flow. Centripetal forces operating in the spiral provide the change of direction and the larger particles above a critical mass will be deposited on the cyclone walls.

Bag filter These are fabric filters and are comprised of a filter medium, usually manufactured in the form of bags, through which material over a certain size cannot pass. There are three types: mechanical shakedown, reverse air jet and pulse jet.



Bags are capable of filtration of finer particles than cyclones, but do not perform well with wet particulate such as wood with a moisture content > 20% (i.e. they clog up).

Indicative monitoring	Monitoring which measures the performance of the abatement plant, rather than the quantity of dust etc emitted. In the case of bag filtration, this is normally achieved by alarming the pressure drop across the abatement plant, so that an alarm is set off should a bag / sleeve split.
Ringelmann Chart	A chart set by British Standard B.S.2742:1969 which divides smoke into 4 shades by colour. Shades 2 to 3 are dark and 4 is black.
RTO	Regenerative Thermal Oxidiser: Heat from the combustion of waste VOCs is recycled onto a ceramic bed to provide pre-heating to the process and reduce the input of primary fuel.
IBC	Intermediate Bulk Container: A 1000 litre container mounted on a euro-pallet and provided with a means of connecting the container into the process directly. It removes the need to decant liquids from one place to another and the attendant risk of spillage.



This note does not comprise part of the permit, but contains guidance relevant to it.

Inspections

Regular inspections will be made by officers of Telford & Wrekin Council (without prior notice), in order to check and ensure full compliance with this permit.

BAT (Best Available Techniques)

Article 2(11) of the IPPC Directive defines "best available techniques" as follows:

"the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent, and where that is not practicable, generally to reduce emissions and the impact on the environment as a whole".

- "techniques" shall include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned,
- "available" techniques shall mean those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator,
- "best" shall mean most effective in achieving a high general level of protection if the environment as a whole.

In determining the best available techniques, special consideration should be given to the items listed in Annex IV of the Directive.

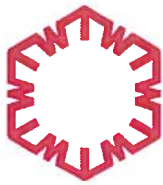
Health and Safety at Work and Other Statutory Requirements

Compliance with this permit does not necessarily infer compliance with any other legislation.

Notification of Operation Changes

The operator will be liable to prosecution if they operate otherwise than in accordance with the conditions and plant described in this permit.

The operator shall contact the regulator to discuss any proposed changes.



Enforcement

The operator will be liable to enforcement action where: -

- a) the operator fails to comply with or contravenes any permit condition;
- b) a change is made to the installation operation without prior notification of the change to the regulator;
- c) intentional false entries are made in any record required to be kept under the conditions of the permit;
- d) false or misleading statement is made.

Any enforcement action is taken in accordance with the regulator's enforcement policy.

Annual Subsistence Charge

A subsistence charge is payable on the 1st April each year. An invoice will be issued by the regulator providing further details of how to pay. The charges are based on a risk based system. Details of the risk assessment can be found at <http://www.defra.gov.uk/environment/quality/pollution/ppc/localauth/fees-risk/fees.htm>

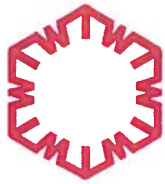
Appeal against Regulatory Action

The operator can appeal against regulatory action by the regulator to the Secretary of State for Environment, Food & Rural Affairs. Appeals must be sent to the Secretary of State on a form found at

http://www.planning-inspectorate.gov.uk/pins/environment/environment/environmental_appeals/environmental_permitting_appeal_form.pdf

Guidance on the appeal procedure can be found at

http://www.planning-inspectorate.gov.uk/pins/environment/environment/environmental_appeals/environmental_permitting_guidance_notes.pdf



There are time limits for making an appeal as follows:

- a) in relation to an appeal against a revocation notice, before the notice takes effect;
- b) in relation to the withdrawal of a duly-made application under paragraph 4(2) of Schedule 5, not later than 15 working days from the date of the notice served under that paragraph;
- c) in relation to a variation notification, a suspension notice, an enforcement notice or a landfill closure notice, not later than 2 months from the date of the notification or notice;
- d) in any other case not later than 6 months from the date of the decision or deemed decision.

Please note:

An appeal will not suspend the effect of the conditions appealed against; the conditions must still be complied with.

In determining an appeal against one or more conditions, the Act allows the Secretary of State in addition to quash any of the other conditions not subject to the appeal and to direct the local authority either to vary any of these other conditions or to add new conditions.

Contact Numbers for the Regulator

The Regulator is the Pollution Control Section of Telford & Wrekin Council. They can be contacted on 01952 381818. You may also contact them by email at any time. Environmental.health@telford.gov.uk

Correspondence Address

All correspondence to Telford & Wrekin Council relating to this information shall be addressed

Environmental Health, Telford & Wrekin Council, Darby House, P.O. Box 214, Telford, TF3 4LE