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Lonza Wood Protection

HALES SAWMILLS (Market Drayton)

Engineering & Technical Services Report

New Treatment Facility IED BAT Assessment

Date 14th July 2014

Tanalith E™ WOOD PRESERVATIVE

Vacsol AQUA™ WOOD PRESERVATIVE

Lonza treat right – Product x Application = Performance

Reg No. 10611

BS EN ISO 14001 Reg No. EMS 539413

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BAT No.	BAT Statement	Current Status	Recommendations
1	The Operator should ensure that deliveries are carried out in such a way so as to minimise noise, spillage, leaks and emissions	Concentrated product is delivered by bulk tanker. The tanker discharge is completed with the rear of the tanker within the contained bunded area of the timber treatment facility. Additives are delivered and stored inside within the timber treatment facility and fully contained.	No further action should be required.
2	Storage areas for solvents and treatment chemicals should be under cover and protected from the elements to avoid or minimise environmental impact, except where stored materials are in suitable weather proof containers.	Plant, drip area and chemical storage is all under cover.	No further action should be required.
3	Storage areas for solvents and treatment chemicals should be hard surfaced and contained or bunded. The containment area or bund can incorporate the treatment vessel area depending on site layout etc or be a separate dedicted area.	Drip areas are finished below outside floor level of the building thus preventing possible loss of product to the outside of the treatment facility. The outside level of the surrounding area falls away from the treatment plant to minimise ingress of rain water. All product run off is collected and re-used in the process. Product storage is all contained within the main plant bunded area.	No further action should be required.

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4	Bulk storage tanks for chemicals and solvent-containing liquids should wherever practicable be back vented to the delivery tank during filling. Where this is impracticable, for example: due to long pipe runs, back pressure, or contractual agreements over deliveries, then, displaced air vents should be sited in such a way as to prevent the arising of offensive odour beyond the site boundary.	Not applicable to water based preservatives	No further action should be required.
5	Bulk storage tanks for solvent storage should normally be light coloured, in order to reduce thermal increase as a resulting from sunlight, (planning restrictions may apply).	Tanks are under cover and not in direct sunlight. Not applicable.	No further action required.
6	All new static bulk solvent storage tanks containing solvent with a composite vapour pressure that is likely to exceed 0.4kPa at 20deg C (293K) should be fitted with pressure vacuum relief valves. Pressure vacuum relief valves should be examined at a minimum of at least once every six months for signs of corrosion, contamination, incorrect seating and be cleaned and/or corrected as required.	Not applicable	No further action required.
7	Delivery connections to bulk storage tanks should be located within a bunded/contained area, fixed and locked when not in use.	Tanker offloading is within the plant contained area. Tanker discharge point can be physically locked off as required.	No further action should be required.

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8	All fixed storage tanks should be fitted with audible and/ or visual high-level alarms or volume indicators to warn of overfilling. Where practicable in relation to the viscosity of the material being handled or pumping system used, the filling systems should be interlocked to the alarm system to prevent overfilling	Volume measurement and separate high level audible alarms are fitted to the tanks. High level in the operational storage tanks stops filling and unintended increase in level also causes an alarm to be triggered.	No further action should be required.
9	Deliveries to bulk storage tanks should be supervised by trained personnel to avoid potential accidents and spillage.	Part of site operational procedures	No further action should be required.
10	Solvent and biocide containing materials should be stored in closed storage containers.	All biocide containing materials are held in closed or covered tanks.	No further action should be required.
11	The storage, handling and use of flammable materials should be in accordance with HSE requirements, in order to prevent accidents that may have environmental consequences.	No flammables used in the plant area	No further action required.
12	The treatment area which consists of the treatment vessels, working vessels, associated pipework and treatment vessel loading area consisting of the full rail line should be under cover and protected from the elements to avoid or minimise environmental impact.	Plant and drip areas are to be fully enclosed to give protection from the elements. Access to the treatment plant area is via access doors. An area to exchange timbers should be part of the building design.	No further action should be required.

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13	The treatment area should have an impermeable surface, spill containment kerbs, sealed construction joints and a bunded exterior to contain treatment solution. The condition of the impervious surface should be checked regularly and the intended maintenance recorded.	Seal bund and drip areas are part of the civil engineering design for the plant.	No further action should be required.
14	Wood packs should be stacked to maximise free draining of treatment solution:- Packs should be sloped in traditional horizontal treatment vessels, tilting treatment vessels and vessels which use techniques such as steam fixation may use horizontal packs.	Pack loading to maximise throughput and run off during the treatment process.	No further action should be required.
15	Wood should be separated in packs by spacers as per the site pinning plan to allow free movement of air during drying and to minimise capillary retention between surfaces.	Plant stickering configuration optimised by commodity	No further action required.
16	Shaped profiles should be positioned to prevent ponding of treatment solution.	Not applicable – moulded profiles not treated.	No further action required
17	Plant loading systems should not be constructed with flat areas or trap areas where treatment solution may pond.	Timber bogies are open construction	No further action required
18	Wood packs/pieces should be attached to the body of the plant loading system and secured to prevent "wood	Packs are strapped to the bogies.	No further action required

	lift" during treatment.		
19	Treatment vessels should be filled with wood packs/pieces to be treated to an optimum capacity to maximise treatment cycle efficiency.	Operational decision.	No further action required
20	The treatment vessel should be locked shut and sealed once the wood pack/plant loading system is loaded and before treatment takes place.	Standard operational practice and control system will also not start unless these conditions are met.	No further action required
21	Process controls should prevent the operation of the treatment vessel unless the vessel is locked and sealed.	Standard door safety features of closed, locked and low level test cock are all part of the design and linked in to the control system.	No further action should be required.
22	Process controls should prevent the treatment vessel from opening prior to completion of the treatment cycle and full removal back to storage of all treatment solution from the treatment vessel.	Standard door safety features of closed, locked and low level test cock are all part of the design and linked in to the control system.	No further action required
23	Process controls should include a display to show if liquid is present in the treatment vessel.	Control system shows levels in the tanks and also vessel empty switch has to be uncovered to enable the door hydraulics to unlock the doors. Low level test cock opening is the first part of the door opening operation and shows the operator if liquid is present.	No further action should be required.

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24	Where the treatment vessel door requires to be opened in an emergency situation to release pressure the door should be fitted with a catch-lock to prevent the release of fluid.	THIS POINT SHOULD BE IGNORED IT IS NOT SAFE TO DO THIS. CATCH LOCKS ARE NOT GUARANTEED TO DO THIS. Pressure should be released through opening the pressure release valve or main flood valve in manual.	No further action required
25	Treatment vessels are typically fitted with two safety relief valves, these valves should be designed to ensure that any discharge is directed to a tank of sufficient capacity.	One valve is required to control the pressure in the vessel as a process control if the control system doesn't shut down the pressure pump at the required set point and is directed back to inlet of the pressure pump. The other is a safety relief valve fitted to the vessel as an ultimate safety device.	No further action required
26	Plant loading systems should be removed from the treatment vessel by drawing back along a rail system; this rail system should be built on an impermeable surface and all treatment solution draining from the plant loading systems and attached packs should be directed back into the working vessel for re-use in the process.	Design complies with the requirements of this point. See plant drawing.	No further action should be required.
27	Packs may remain on plant loading systems to complete drying or they may be removed and placed in a post treatment drying area. All pack movements should occur on an impermeable surface which is drained back to a holding vessesl by use of a closed drainage system.	See comment above	No further action should be required.
28	Vehicles used to move packs within the post treatment drying area will become contaminated with treatment	Vehicle for moving timbers within the plant area should remain within the treatment facility and timbers	No further action should be required.

	solution and should remain in the post treatment drying area.	exchanged with vehicles that remain outside the facility.	
29	Vehicles in the post treatment drying area must be cleaned in the post treatment drying area prior to egress for service and repair. Cleaning water should be added to the treatment system.	Site procedures required to ensure this is done.	No further action should be required.
30	The post treatment drying area should have an impermeable surface, spill containment kerbs, sealed construction joints and a bunded exterior to contain treatment solution. The condition of the impervious surface should be checked regularly and the intended maintenance recorded.	See comments in point 26	See point 26
31	The post treatment drying area should be covered to prevent rainwater from falling onto the impermeable surface. Surface water from the roof area should be drained to either the treatment system to be used as make up water or to a sealed surface water drainage system.	Drying areas are covered. Rainwater harvesting to a 50,000 litre underground tank is part of the system design.	No further action should be required.
32	Treatment solution should be drained from the post treatment drying area but a closed drainage system and returned to the treatment system for re-use.	Solution will be recovered back to the treatment plant.	No further action should be required.

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33	The closed drainage systems related to the working vessel should be recorded on a clear diagrammatic record and should be inspected on an annual basis to prove the continuing efficiency of the system.	Treatment plant area should have no drains.	No further action required
34	Wood packs should remain on the post treatment drying area until such times as the packs are defined as dry.	Standard practice. System to record release of packs needs to be integrated in to site/ plant procedures.	No further action required
35	To be defined as dry, a pack shall be lifted by mechanical means and shall be suspended above the post treatment drying area for a minimum of 5 minutes. The pack should not form drips or drip treatment solution during this period.	System to record release of packs needs to be integrated in to site/ plant procedures.	No further action required
36	Operators should develop a reporting system which records the movement of a pack onto and off of the post treatment drying area this report should include:- a specific pack identifier, date and time of addition and removal, weather conditions and signature of person responsible for accepting dry condition.	Implement site procedure	No further action required
37	Once defined as dry, packs should be removed from the post treatment drying area. Vehicles used for pack movement should remain within the post treatment drying area.	Implement site procedure	No further action required
38	Motors on the treatment vessel should be fitted with VSD controls to minimise energy usage wherever	VSD's not part of the design. Pumps stop and start	No further action required

	possible.	based on set points rather	
39	Cleaning water should be minimised by using rotary spray nozzle heads or similar means and reused where technically possible.	Not applicable	No further action required
40	Where materials that are potentially harmful to the environment may be present in waste water, measures should be taken to prevent them from entering the water circuit. Water which has been in contact with treatment chemicals can be used as "make-up water".	All contaminated water is recovered.	No further action required
41	Ensure that all operations which generate emissions to air are contained and adequately extracted to suitable abatement plant, where this is necessary to meet specified emission limit values.	No emissions to air	No further action required
42	Ensure that potential emissions are recovered and reused where possible, e.g. returning collected particulate material to feedstock.	No emissions to air	No further action required
43	Ensure that emissions from combustion processes in normal operation are free from visible smoke and in any case do not exceed the equivalent of Ringelmann Shade 1 as described in British Standard BS 2742:2009.	No emissions to air	No further action required

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44	Ensure that emissions take place from the minimum practicable number of chimneys. This is particularly important when new plants are being designed or when changes are being made to existing processes. If practicable a multi-flue stack should be used.	No emissions to air	No further action required
45	Ensure that vent and chimney heights are sufficient to ensure adequate dispersion under all normal operating conditions.	No emissions to air	No further action required
46	Ensure that the minimum vent height is 3 metres above roof ridge height of any building within a distance of 5 times the uncorrected vent height and in no circumstances should it be less than 8 metres above ground level. (Note: workplace dust extraction units do not need to meet these requirements).	No emissions to air	No further action required
47	Be able to demonstrate to the regulator that all reasonably practicable steps are taken during start-up and shutdown, and changes of fuel or combustion load in order to minimise emissions.	No emissions to air	No further action required
48	Investigate the cause and nature of any persistent visible emissions and provide a report to the regulator.	No emissions to air	No further action required
49	Ensure that emissions of water vapour are free from droplet fallout.	No emissions to air	No further action required

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50	Ensure that liquid entrainment in the duct of wet abatement, leading to droplet fallout, does not occur as a result of the linear flow rate within the duct exceeding 9 m/s	No emissions to air	No further action required
51	Ensure that flues and ductwork are cleaned to prevent accumulation of materials, as part of the routine maintenance programme.	No emissions to air	No further action required
52	Normally the discharge of exhaust gases through a stack takes place at constant volume. When this occurs stacks should achieve a minimum efflux velocity of between 10-15 m/sec unless dispersion modelling allows a lower velocity to achieve air quality standards. Where the discharge volume varies then the design of the stack should be optimised around the most frequent emission rate.	No emissions to air	No further action required
53	Ensure that stacks are not fitted with any restriction at the final opening such as a plate, cap or cowl, with the exception of a cone which may be necessary to increase the exit velocity of the emissions.	No emissions to air	No further action required
54	Where possible, ductwork should be sufficiently lagged to prevent condensation of liquids within the duct in particular solvents.	No emissions to air	No further action required
55	Combustion processes should use low Nox burners.	Not applicable	

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56	All emissions are controlled, as a minimum, to avoid a breach of water quality standards (Calculations and/or modelling to demonstrate this may be required by the regulator).	There should be no emissions to water.	No further action required
57	Run-off from the installation should be controlled and managed and where necessary (given the nature of the run-off) treated before discharge in a suitable effluent treatment plant.	Not applicable	No further action required
58	All interceptors:-		
	- Are impermeable	Not applicable	No further action required
	- Are subject to visual inspection and any contamination removed at a frequency agreed with the regulator	Not applicable	No further action required
	- Have an annual maintenance inspection; prior to inspection all contents should be removed	Not applicable	No further action required
59	Procedures for dealing with the discharges from bunds should be in place.	Bund contents recovered to the process.	No further action required
60	Process effluent is kept separate from surface drainage unless agreed with the regulator.	Not applicable	No further action required
61	There should be no intentional point source emissions	Not applicable. Total containment is basis for safe	No further action required

	of List I and List II substances to groundwater.	operation.	
62	Operations should be controlled to minimise fugitive emissions.	Not applicable	No further action required
63	Where dusty materials are handled, dust should normally be controlled by covering of skips and vessels, using enclosed conveyors, spraying water on conveyors, minimising drops and by avoiding outdoor or uncovered stockpiles.	Not applicable	No further action required
64	For VOC where the operator uses the Emission and Fugitive limits or the Total Emission Limit Value for compliance the Fugitive VOC emissions must be determined in accordance with the Solvent Management Plan (Appendix 2). Once completed, it need not be done again until the equipment is modified in such a way as to effect the potential fugitive release of VOCs.	Not applicable	No further action required
	When transferring volatile liquid, one or more of the following techniques should be employed - subsurface filling via filling pipes extended to the bottom of the container, the use of vapour balance lines that transfer the vapour from the container being filled to the one being emptied, or an enclosed system with extraction to suitable abatement plant where abatement is	Not applicable	No further action required

	necessary to meet the emission limits.		
	Vent systems should be chosen to minimise breathing emissions (e.g. pressure/vacuum valves) and, where relevant, should be fitted with knock-out pots and appropriate abatement equipment.	Not applicable	No further action required
65	The operator should have a clear diagrammatic record of the routing of all installation drains, subsurface pipework, sumps and storage vessels including the type and broad location of the receiving environment.	See site plan.	No further action required
66	The operator should identify the potential risk to the environment from drainage systems recorded by BAT 65 and should devise an inspection and maintenance programme having regard to the nature and volume of waste waters, groundwater vulnerability and proximity of drainage systems to surface waters.	Risk should be low.	No further action required

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67	The operator should ensure that all operational and post treatment drying areas are equipped with an impervious surface, spill containment kerbs, sealed construction joints, and connected to a sealed drainage system or such alternative requirements as approved by the regulator.	Part of installation design.	No further action required
68	Oil and solid interceptors should be used if necessary for the drainage of open storage areas.	Not applicable	No further action required
69	All sumps should be impermeable and resistant to stored materials.	Sumps under vessel are directed back to the storage tank.	
70	All liquid storage tanks should be located within bunds that are designed, constructed and located following to appropriate standards and ensuring that the volume is more than 110% of the largest tank or 25 per cent of the total volume you are likely to store, whichever is greater.	Part of the installation design.	No further action required
71	Storage tanks should be fitted with high-level arms or volume indicators to warn of overfilling and where practicable the filling system should be interlocked to the alarm system to prevent overfilling. Delivery connections should be located within a bunded area, fixed and locked when not in use.	Operational storage tanks are fitted with level measurement and separate high level alarms both will prevent overfill of the storage tank. Delivery connections are within the contained area.	No further action required

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72	All tank bunds and sumps should be subject to regular visual inspection, as agreed with the regulator, and placed on a preventative maintenance programme. The content of bunds and sumps should be pumped out or otherwise removed as soon as is practicable after checking for contamination.	Inspection requirements to be agreed with the inspecting authority.	Agree program.
73	The operator should assess the pollution risks posed by the storage of solvents and devise control measures to minimise the pollution risk.	Not applicable	No further action required
74	For VOC where the operator uses the Emission and Fugitive limits or the Total Emission Limit Value for compliance the Fugitive VOC Emissions must be determined in accordance with the Solvent Management Plan. Once completed, it need not be done again unt the equipment is modified in such a way as to effect the potential fugitive release of VOCs.	Not applicable	No further action required
75	Operators should conduct odour assessments to determine whether emissions result in offensive odours at or beyond the installation boundary.	Not applicable	No further action required
76	If operations are identified as resulting in offensive odour, operators should devise an odour control programme of improvements and maintain an odour management plan.	Not applicable	No further action required

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78	Effective operational and maintenance systems should be employed on all aspects of the installation whose failure could impact on the environment. Such systems should be reviewed and updated annually.	Lonza offer a plant maintenance support scheme.	No further action required
79	Environmentally critical processes and abatement equipment (whose failure could impact on the environment) should be identified and listed. The regulator should be provided with a list of such equipment.	Not applicable	No further action required
80	For equipment referred to above:-		
	- Alarms or other warning systems should be provided, which indicate equipment malfunction or breakdown;	Part of the control system.	No further action required
	- Such warning systems should be maintained and checked to ensure continued correct operation, in accordance with the manufacturer's recommendations.	Part of plant maintenance program offered by Lonza	No further action required
	- Essential spares and consumables for such equipment should be held on site or be available at short notice from suppliers, so that plant breakdown can be rectified rapidly.	Part of plant maintenance program offered by Lonza	No further action required
81	Records of breakdowns should be kept and analysed by the operator to eliminate common failure modes.	Part of plant maintenance program offered by Lonza	No further action required

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82	A competent person(s) should be appointed to liaise with the regulator and the public with regard to complaints. The regulator should be informed of the designated individual(s).		Part of site management procedures
83	A formal structure should be provided to clarify the extent of each level of employee's responsibility with regard to the control of the process and its environmental impacts. This structure should be predominantly displayed on the company within the process building at all times. Alternatively, there must be a prominent notice referring all relevant employees to where the information can be found.		Part of site management procedures
84	Personnel at all levels should be given training and instruction sufficient to fulfil their designated duties under the above structure. Details of such training and instruction should be entered into an appropriate record and be made available for inspection by the regulator.	Plant operators and site management attend training programs offered by Lonza	No further action required
85	The potential environmental risks posed by the work of contractors should be assessed and instructions provided to contractors about protecting the environment while working on site.		Site procedures. Lonza Service Engineers are Safe Contractor accredited.
86	There should be written procedures for investigating incidents, (and near misses) which may affect the		Site procedure required if not in place.

	environment, including identifying suitable corrective action and following up.		
87	The operator should adopt procedures to control the specification of those types of raw materials within the main potential for environmental impact, such as the preservatives used in the process to order to minimise any such impact. An annual review of alternative raw materials should be carried out with regard to environmental impact. Wood preservatives containing substances of concern (as defined in the Biocidal Products Regulation (EU 528/2012) are subject to comparative risk assessment and socio-economic assessment before approval. Operators are not expected to assess these factors.	Lonza supplied products are subject to BPR approvals as required.	No further action required
88	Substances or mixtures which, because of their VOC content are assigned or need to carry risk phrases/hazard statements R45, R46, R49, R60 or R61 should be replaced, as far as possible by less harmful substances and mixtures within the shortest possible time.	Lonza supplied products are subject to HSE approvals and where possible less harmful constituents are used.	No further action required
89	A programme to monitor and record the consumption of preservative against product produced should be used to optimise the amount of preservative used.	Auto-treater plant control system holds this data and the system controls the timber treatment process to optimise product usage as needed to meet the required standards.	No further action required

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90	The operator should record materials usage and waste generation in order to establish internal benchmarks. Assessments should be made against internal benchmarks to maintain and improve resource efficiency.	Raw materials usage is part of the Auto-Treater control system report structure. Only waste items are empty IBCs that are rinsed clean and returned to Schutz for recycling/re-use.	No further action required
91	The operator should carry out a waste minimisation audit at least as frequently as the permit review period.	Part of site procedures.	No further action required
92	If an audit has not been carried out in the 2 years prior to submission of the application it should be completed within 18 months of the issue of the first PPC permit. The methodology used and an action plan for optimising the use of raw materials should be submitted to the regulator within 2 months of completion of the audit.	Agree with issuing authority.	No further action required
93	Specific improvements resulting from the recommendations of audits should be carried out within a timescale approved by the regulator.	Agree with issuing authority	No further action required
94	The operator should carry out a regular review of water use (water efficiency audit) at least as frequently as the permit review period. If an audit has not been carried out in the 2 years prior to submission of the application it should be completed within 24 months of the issue of the first PPC permit.	Rain water harvesting is an integral part of the design.	No further action required

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95	Using information from the water efficiency audit, opportunities for reduction in water use should be assessed and, where appropriate, should be carried out in accordance with a timescale approved by the regulator.		See above.
96	Information from audits should be used to establish benchmarks. Operators should keep records of such benchmarks and make measurement against them to reveal whether the process is being maintained "in control" or to track improvements.	Regular water readings should be taken to establish usage.	Incorporate in to site procedures.
97	The volume of mains and abstracted water used in the activities should be directly measured when the installation is operating under normal production conditions for a sufficient period to determine the base use of the activity. Thereafter, an annual exercise should be done to confirm the measurement. All measurements should be recorded and the records held on site.		See above
98	The operator should produce an inventory of the quality, nature, origin and where relevant, the destination, frequency of collection, mode of transport and treatment method of any waste which is disposed of or recovered.		Site records system
99	Operators should segregate the main waste types.		Site procedure

100	Operators should ensure that waste stored in containers that are durable for the substances stored and that incompatible waste types are kept separate.	
101	Ensure that waste storage areas are clearly marked and signed, and that containers are clearly labelled.	Site procedure
	Ensure that appropriate storage facilities are provided for substances that are flammable, sensitive to heat or light, etc and that incompatible waste types are kept separate.	
	Ensure that containers are stored with lids, caps and valves secured and in place. (This also applies to emptied containers).	Site procedures
	Ensure that procedures are in place to deal with damaged or leaking containers.	Site procedures
	Segregate waste wherever practicable.	Site procedures
	Identify the disposal route for all waste. This should be as close to the point of production as possible.	Site procedures
102	All reasonably practicable efforts should be made to minimise the amount of residual organic solvent bearing material left in drums and other containers after use. All organic solvent contaminated waste	Site procedures

	should be stored within closed containers.		
103	The operator should carry out an annual review to demonstrate that the best environmental options are being used for dealing with the waste streams listed in Table 5.2.		Site review.
104	At a minimum of every two years, the operator should investigate potential markets for the recovery/re-use of wastes that are currently disposed of to landfill.	Not applicable – should be no landfill waste as a general rule	No further action
105	The operator should produce a report annually on the energy consumption of the installation.		Measurement of electricity usage may be required.
106	The operator should monitor energy flows and target areas for reduction which should be updated annually. ("Sankey" diagrams and energy balances would be useful as aids).		Use of process control to stop start pumps are target intensities is way to reduce energy consumption.
107	The operator should ensure that all plant is operated and maintained to optimise the use and minimise the loss of energy.		Plant maintenance support scheme offered by Lonza .
108	The following techniques should be considered:-	Not applicable	No further action required

	- Heat recovery from different parts of the processes		
	- Minimisation of water use and closed circulating water systems		
	- Good insulation		
	- Plant layout to reduce pumping distances		
	- Phase optimisation of electronic control motors and fans		
	- Optimised efficiency measures for combustion plant		
	- Preventative maintenance programme targeting energy drops		
109	The following techniques should be considered:-	Not applicable	No further action required
	- Use of Combined Heat and Power (CHP)		
	- Generation of energy from waste		
	- Use of less polluting fuels		
110	There should be written procedures for investigating accidents and near misses, including identifying suitable		Site procedures

corrective action and following up.

111	The operator should maintain an accident management plan covering the matters listed above and to the satisfaction of the regulator. The plan should be available for inspection by the regulator.		Lonza offer the CareChem 24 service to assist in emergency situation management.
112	In the case of abnormal emissions arising from an accident, such as a spillage for example, the operator should:		
	- Investigate immediately an undertake remedial action as soon as practicable		Site procedure
	- Promptly record the events and actions taken		Site procedure
	- Ensure the regulator is made aware without delay		Lonza offer the CareChem 24 service to assist in emergency situation management and liaise with relevant bodies
113	Suitable solvent containment and spillage equipment should be readily available in all solvent handling areas.	Not applicable, no solvents used	No further action required
114	Adequate provision to contain potential liquid and solid spillage should be provided.		Recommend purchase of chemical spill kits

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115	Appropriate precautions should be taken to prevent ignition of flammable materials.	Not applicable	No further action required
116	All spillages should be cleared as soon as possible, solids by vacuum cleaning, wet methods, or other appropriate techniques may be used , however dry sweeping of dusty spillages should not be permitted.		Part of site procedures
117	The handling and use of flammable and explosive materials should be carried out in accordance with the requirements of the Dangerous Substances and Explosive Atmosphere Regulations S12776 2002.	Not applicable	No further action required
118	Areas where flammable organic solvents and organic solvent containing materials are handled or used should be suitably contained to minimise the potential spread for fire.	Not applicable	No further action required
119	Electrical zoning and static protection should be provided in all areas where flammable organic solvents are stored, used or handled.	Not applicable	No further action required
120	The Operator should identify key plant and equipment (or operations) with the potential to give rise to significant noise and take such measures as are necessary by way of mitigation and maintenance of existing plant and equipment in order to minimise noise having regard to Table 5.3 above	Add Noise levels of vac pump, compressors and pressure pump hydraulic power packs.	Noise survey recommended once installation completed.

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121	The operator should monitor emissions, make tests and inspections of the process and keep records; in particular the operator should keep records of audits, inspections, tests and monitoring, including all non-continuous monitoring, inspections and visual assessments. Monitoring may include process variables and operating conditions where relevant to emissions. In such cases current records should be kept on site and be made available for the regulator to examine.		Site auditing systems should be implemented.
122	The Operator should notify the regulator at least 7 days before any periodic monitoring exercise to determine compliance with emission limit values. The Operator should state the provisional time and date of monitoring, pollutants to be tested and the methods to be used.	Not applicable	No further action required
123	The results of non-continuous emission testing should be forwarded to the regulator within 8 weeks of the completion of the sampling. Results from continuous monitoring systems should be recorded and be made available for inspection by the regulator.	Not applicable	No further action required
124	All results submitted to the regulator should include details of process conditions at the time of monitoring, monitoring uncertainty as well as any deviations from the procedural requirements of standard reference	Not applicable	No further action required

methods and the error invoked from such deviations.

125	Results exceeding the emission limit value from any monitoring activity (both continuous and non-continuous) and malfunction or breakdown leading to abnormal emissions should be investigated and corrective action taken immediately. The Operator should ensure that the regulator is notified without delay, identifying the cause and corrective action taken. Where there is immediate danger to human health, operation of the activity should be suspended.	Not applicable	No further action required
126	Sampling points on new plant should be designed to comply with CEN or Other Standards, e.g. BS EN 13284-1 or BS ISO 9096:2003 for sampling particulate matter in stacks.	Not applicable	No further action required
127	Where available, operators should use monitoring equipment and instruments certified to MCERTS and use a stack-testing organisation accredited to MCERTS standards or such alternative requirements as approved by the regulator.	Not applicable	No further action required

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128	Exhaust flow rates of waste gases should be consistent with the efficient capture of emissions, good operating practice and meeting the requirements of the legislation relating to the workplace environment.	Not applicable	No further action required
129	The introduction of dilution air to achieve emission concentration limits should not be permitted.	Not applicable	No further action required
130	Dilution air may be added where justified for waste gas cooling or improved dispersion. In such cases, monitoring should be carried out upstream of the dilution air input or procedures designed to correct for the ratio of input air to the satisfaction of the regulator.	Not applicable	No further action required
131	Monitoring to determine compliance with emission limit values should be corrected to the following standard reference conditions: temperature, 273.15 K (O°C), pressures 101.3kPa (1 atmosphere) and measured wet, no correction for water vapour.	Not applicable	No further action required
132	Periodic visual assessment of releases should be undertaken as required by the regulator to ensure that all final releases are colourless, free from persisttent visible emisions and free from droplets.	Not applicable	No further action required
133	For releases of FOVs calibration and compliance monitoring must meet the following requirements as appropriate:-	Not applicable	No further action required

	In the case of continuous measurements the emission limit values should be considered to be complied with if: a) none of the averages over 24 hours of normal operation exceeds the emission limit values, and b) none of the hourly averages exceeds the emission limit values by more than a factor of 1.5. In the case of periodic measurements the emission limit values should be considered to be complied with if, in one monitoring exercise: a) the average of all the readings does not exceed the emission limit values; and b) none of the hourly averages exceeds the emission limit values by more than a factor of 1.5.		
134	Where VOC abatement equipment is fitted, the following BAT photographs indicate any additional continuous monitoring and recording requirements for that specific abatement equipment/	Not applicable	No further action required

	Any measurement of total organic Carbon should be with a heated FID method (in line with revised EN 13649).		
135	The frequency of manual sampling for VOC from abated releases must be at least annually.	Not applicable	No further action required
136	The appropriateness of the monitoring requirements will vary depending upon the sensitivity of the receiving water and should be proportionate to the scale of the operations, nature of the discharge and receiving water. For each release point the following information is required: - the specific volume flow from the process to sewer/controlled water - the sensitivity of the receiving water - the volume of discharge compared to the percentage dry river flow of the receiving water	Not applicable	No further action required
137	Increased monitoring should be carried out where substances to which the local environment may be susceptible could be released from the installation, e.g. where releases of biocides occur.		Monitoring requirements will be defined by local authority

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Lonza Wood Protection

138	A full analysis, to include the substances listed in Part 1 of Schedule 1 of the EP Regulations and equivalent regulations in Scotland and Northern Ireland, should be carried out annually on a representative sample from each release point, unless it is agreed with the regulator that this is appropriate.		No release points if plant installation is fully contained.
139	The following should be monitored and recorded: - Quantity nature and origin of the waste - The physical description of the waste - A description of the composition of the waste - Any relevant hazardous properties (hazard and risk phrases) - European Waste Catalogue code - Handling precautions and substance with which it cannot be mixed - Disposal routes for each waste category		Site procedures where applicable
140	The definitions provided must be used in all calculations relating to the Solvent Management Plan (SMP)	Not applicable	No further action required
141	For all installations, the SMP should be used to	Not applicable	No further action required

	determine the solvent consumption annually		
142	For all installations using the omission and fugitive limits, the SMP should be used for determining the fugitive emissions. Once completed, it need not be repeated until the equipment is modified.	Not applicable	No further action required
143	For all installations using the reduction scheme, the SMP should be used to determine the actual emissions annually.	Not applicable	No further action required
144	For all installations using the total emission limit value the SMP must be ued to determine the Total Emission and the Solvent Input annually. In addition, the SMP should be used for determining the fugitive emissions. Once completed, it need not be repeated until the equipment is modified.	Not applicable	No further action required