	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**
Kapitler for BAT-konklusjoner	**BAT-konklusjon nr.**	**BAT-konklusjoner med beskrivelse av teknikk**
1. GENERAL BAT CONCLUSIONS		
1.1. **Overall environmental performance**	BAT 1.	In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the following features: **I.** commitment of the management, including senior management; **II.** definition, by the management, of an environmental policy that includes the continuous improvement of the environmental performance of the installation; **III.** planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment; **IV**. implementation of procedures paying particular attention to: (a) structure and responsibility, (b) recruitment, training, awareness and competence, (c) communication, (d) employee involvement, (e) documentation, (f) effective process control, (g) maintenance programmes, (h) emergency preparedness and response, (i) safeguarding compliance with environmental legislation;

		V. checking performance and taking corrective action, paying particular attention to: (a) monitoring and measurement (see also the JRC Reference Report on Monitoring of emissions to air and water from IED-installations – ROM), (b) corrective and preventive action, (c) maintenance of records, (d) independent (where practicable) internal or external auditing in order to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained; **VI.** review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness; **VII.** following the development of cleaner technologies; **VIII.** consideration for the environmental impacts from the eventual decommissioning of the plant at the stage of designing a new plant, and throughout its operating life; **IX.** application of sectoral benchmarking on a regular basis. **X.** waste stream management (see BAT 2); **XI.** an inventory of waste water and waste gas streams (see BAT 3) **XII.** residues management plan (see description in Section 6.6.5); **XIII.** accident management plan (see description in Section 6.6.5). **XIV.** odour management plan (see BAT 12);

		XV. noise and vibration management plan (see BAT 17); *Applicability* The scope (e.g. level of detail) and nature of the EMS (e.g. standardised or non-standardised) will generally be related to the nature, scale and complexity of the installation, and the range of environmental impacts it may have (determined also by the type and amount of wastes processed).
	BAT 2.	In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below. **a.** Set up and implement waste characterisation and pre-acceptance procedures **b.** Set up and implement waste acceptance procedures **c.** Set up and implement a waste tracking system and inventory **d.** Set up and implement an output quality management system **e.** Ensure waste segregation **f.** Ensure waste compatibility prior to mixing or blending of waste **g.** Sort incoming solid waste
	BAT 3.	In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the following features:

	(i) information about the characteristics of the waste to be treated and the waste treatment processes, including: (a) simplified process flow sheets that show the origin of the emissions; (b) descriptions of process-integrated techniques and waste water/waste gas treatment at source including their performances; **(ii)** information about the characteristics of the waste water streams, such as: (a) average values and variability of flow, pH, temperature, and conductivity; (b) average concentration and load values of relevant substances and their variability (e.g. COD/TOC, nitrogen species, phosphorus, metals, priority substances / micropollutants); (c) data on bioeliminability (e.g. BOD, BOD to COD ratio, Zahn-Wellens test, biological inhibition potential (e.g. nitrification)) (see BAT 52); **(iii)** information about the characteristics of the waste gas streams, such as: (a) average values and variability of flow and temperature; (b) average concentration and load values of relevant substances and their variability (e.g. organic compounds, POPs such as PCBs); (c) flammability, lower and higher explosive limits, reactivity; (d) presence of other substances that may affect the waste gas treatment system or plant safety (e.g. oxygen, nitrogen, water vapour, dust).
BAT 4.	In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques given below. **a.** Optimised storage location **b.** Adequate storage capacity **c.** Safe storage operation **d.** Separate area for storage and handling of packaged hazardous waste

	BAT 5.	In order to reduce the environmental risk associated with the handling and transfer of waste, BAT is to set up and implement handling and transfer procedures. *Description* Handling and transfer procedures aim to ensure that wastes are safely handled and transferred to the respective storage or treatment. They include the following elements: - handling and transfer of waste are carried out by competent staff; - handling and transfer of waste are duly documented, validated prior to execution and verified after execution; - measures are taken to prevent, detect and mitigate spills; - operation and design precautions are taken when mixing or blending wastes (e.g. vacuuming dusty/powdery wastes). Handling and transfer procedures are risk-based considering the likelihood of accidents and incidents and their environmental impact.
1.2. **Monitoring**	BAT 6.	For relevant emissions to water as identified by the inventory of waste water streams (see BAT 3), BAT is to monitor key process parameters (e.g. waste water flow, pH, temperature, conductivity, BOD) at key locations (e.g. at the inlet and/or outlet of the pretreatment, at the inlet to the final treatment, at the point where the emission leaves the installation).
	BAT 7.	BAT is to monitor emissions to water with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.
	BAT 8.	BAT is to monitor channelled emissions to air with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.

BAT 9.	BAT is to monitor diffuse emissions of organic compounds to air from the regeneration of spent solvents, the decontamination of equipment containing POPs with solvents, and the physico-chemical treatment of solvents for the recovery of their calorific value, at least once per year using one or a combination of the techniques given below. **a.** Measurement **b.** Emissions factors **c.** Mass balance
BAT 10.	BAT is to periodically monitor odour emissions. *Description* Odour emissions can be monitored using: - EN standards (e.g. dynamic olfactometry according to EN 13725 in order to determine the odour concentration or EN 16841-1 or -2 in order to determine the odour exposure); - when applying alternative methods for which no EN standards are available (e.g. estimation of odour impact), ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality. The monitoring frequency is determined in the odour management plan (see BAT 12). *Applicability* The applicability is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.

	BAT 11.	BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water, with a frequency of at least once per year. *Description* Monitoring includes direct measurements, calculation or recording, e.g. using suitable meters or invoices. The monitoring is broken down at the most appropriate level (e.g. at process or plant/installation level) and considers any significant changes in the plant/installation.
1.3. **Emissions to air**	BAT 12.	In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements: - a protocol containing actions and timelines; - a protocol for conducting odour monitoring as set out in BAT 10; - a protocol for response to identified odour incidents, e.g. complaints; - an odour prevention and reduction programme designed to identify the source(s); to characterise the contributions of the sources; and to implement prevention and/or reduction measures. *Applicability* The applicability is restricted to cases where an odour niusance at senstitive receptors is expected and/or has been substantiated.
	BAT 13.	In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques given below. **a.** Minimising residence times **b.** Using chemical treatment **c.** Optimising aerobic treatment

	BAT 14.	In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques given below. Depending on the risk posed by the waste in terms of diffuse emissions to air, BAT 14d is especially relevant. **a.** Minimising the number of potential diffuse emissions sources **b.** Selection and use of high-integrity equipment **c.** Corrosion prevention **d.** Containment, collection and treatment of diffuse emissions: **e.** Dampening **f.** Maintenance **g.** Cleaning of waste treatment and storage areas **h.** Leak detection and repair (LDAR) programme
	BAT 15.	BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques given below. **a.** Correct plant design **b.** Plant management
	BAT 16.	In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques given below. **a.** Correct design of flaring devices **b.** Monitoring and recording as part of flare management
1.4. **Noise and vibrations**	BAT 17.	In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements: **I.** a protocol containing appropriate actions and timelines; **II.** a protocol for conducting noise and vibration monitoring; **III.** a protocol for response to identified noise and vibration events, e.g. complaints;

		IV. a noise and vibration reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures. *Applicability* The applicability is restricted to cases where a noise or vibration nuisance at senstitive receptors is expected and/or has been substantiated.
	BAT 18.	In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques given below. **a.** Appropriate location of equipment and buildings **b.** Operational measures **c.** Low-noise equipment **d.** Noise and vibration control equipment **e.** Noise attenuation
1.5. **Emissions to water**	BAT 19.	In order to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques given below. (BAT-konklusjoner for utfyllende liste for BAT 19) **a.** Water management **b.** Water recirculation **c.** Impermeable surface **d.** Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels **e.** Roofing of waste storage and treatment areas **f.** Segregation of water streams **g.** Adequate drainage infrastructure **h.** Design and maintenance provisions to allow detection and repair of leaks

		i. Appropriate buffer storage capacity
	BAT 20.	In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of the techniques given below. ***Preliminary and primary treatment, e.g.*** a. Equalisation b. Neutralisation c. Physical separation, e.g. screens, sieves, grit separators, grease separators, oil-water separation or primary settlement tanks ***Physico-chemical treatment, e.g.*** d. Adsorption e. Distillation/rectification f. Chemical precipitation g. Chemical oxidation h. Chemical reduction i. Evaporation j. Ion exchange process k. Stripping ***Biological treatment, e.g.*** l. Activated sludge process m. Membrane bioreactor ***Nitrogen removal*** n. Nitrification/denitrification when the treatment includes a biological treatment ***Solids removal, e.g.*** o. Coagulation and flocculation p. Sedimentation q. Filtration (e.g. sand filtration, microfiltration, ultrafiltration) r. Flotation

		See Table 6.1 for BAT-associated amissions levels (BAT-AELs) for direct discharges to a receiving water body. See Table 6.2 for BAT-associated emission levels (BAT-AELs) for indirect discharges to a receiving body. Se fanen under for tabeller.
1.6. **Emissions from accidents and incidents**	BAT 21.	In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given below, as part of the accident management plan (see BAT 1). **a.** Protection measures **b.** Management of incidental/accidental emissions **c.** Incident/accident registration and assessment system
1.7. **Material efficiency**	BAT 22.	In order to use materials efficiently, BAT is to substitute materials with waste. *Description* Waste is used instead of other materials for the treatment of wastes (e.g. waste alkalis or waste acids are used for pH adjustment, fly ashes are used as binders). *Applicability* Some applicability limitations derive from the risks of contamination posed by the presence of impurities (e.g. heavy metals, POPs, salts, pathogens) in the waste that substitutes other materials. Another limitation is the compatibility of the waste substituting other materials with the waste input (see BAT 2).
1.8. **Energy efficiency**	BAT 23.	In order to use energy efficiently, BAT is to use both of the techniques given below. **a.** Energy efficiency plan **b.** Energy balance record

1.9. **Reuse of packaging**	BAT 24.	In order to reduce the quantity of waste sent for disposal, BAT is to maximise the reuse of packaging, as part of the residues management plan (see BAT 1). *Description* Packaging (drums, containers, IBCs, palettes, etc.) is reused for containing waste, when it is in good condition and sufficiently clean, depending on a compatibility check between the substances contained (in consecutive uses). If necessary, packaging is sent for appropriate treatment prior to reuse (e.g. reconditioning, cleaning). *Applicability* Some applicability restrictions derive from the risks of contamination of the waste posed by the reused packaging.
2. BAT CONCLUSIONS FOR THE MECHANICAL TREATMENT OF WASTE		Unless otherwise stated, the BAT conclusions presented in Section 2 apply to the mechanical treatment of waste when it is not combined with biological treatment, and in addition to the general BAT conclusions in Section 1.
2.1. **General BAT conclusions for the mechanical treatment of waste**		
2.1.1. Emissions to air	BAT 25.	In order to reduce emissions to air of dust, and of particulate-bound metals, PCDD/F and dioxin-like PCBs, BAT is to apply BAT 14d and to use one or a combination of the techniques given below. **a.** Cyclone **b.** Fabric filter **c.** Wet scrubbing **d.** Water injection into the shredder See Table 6.3 for BAT-associated emission level (BAT AEL) for channelles dust emissions to air from the mechanical treatment of waste.
2.2. **BAT conclusions for the mechanical treatment in shredders of metal waste**		Unless otherwise stated, the BAT conclusions presented in this section apply to the mechanical treatment in shredders of metal waste, in addition to BAT 25.

2.2.1. Overall environmental performance	BAT 26.	In order to improve the overall environmental performance, and to prevent emissions due to accidents and incidents, BAT is to use BAT 14g and all of the techniques given below: **a.** implementation of a detailed inspection procedure for baled waste before shredding; **b.** removal of dangerous items from the waste input stream and their safe disposal (e.g. gascylinders, non-depolluted EoLVs, non-depolluted WEEE, items contaminated with PCBsor mercury, radioactive items); **c.** treatment of containers only when accompanied by a declaration of cleanliness.
2.2.2. Deflagrations	BAT 27.	In order to prevent deflagrations and to reduce emissions when deflagrations occur, BAT is to use technique a. and one or both of the techniques b. and c. given below. **a.** Deflagration management plan **b.** Pressure relief dampers **c.** Pre-shredding
2.2.3. Energy efficiency	BAT 28.	In order to use energy efficiently, BAT is to keep the shredder feed stable. *Description* The shredder feed is equalised by avoiding disruption or overload of the waste feed which would lead to unwanted shutdowns and start-ups of the shredder.
2.3. **BAT conclusions for the treatment of WEEE containing VFCs and/or VHCs**		Unless otherwise stated, the BAT conclusions presented in this section apply to the treatment of WEEE containing VFCs and/or VHCs, in addition to BAT 25.
2.3.1. Emissions to air	BAT 29.	In order to prevent or, where that is not practicable, to reduce emissions of organic compounds to air, BAT is to apply BAT 14d, BAT 14h and to use technique a. and one or both of the techniques b. and c. given below. **a.** Optimised removal and capture of refrigerants and oils **b.** Cryogenic condensation: **c.** Adsorption

		See Table 6.4 for BAT-associated emission levels (BAT-AELs) for channelled TVOC and CFC emissions to air from the treatment of WEEE containing VFCs and/or VHCs.
2.3.2. Explosions	BAT 30.	In order to prevent emissions due to explosions when treating WEEE containing VFCs and/or VHCs, BAT is to use either of the techniques given below. **a.** Inert atmosphere **b.** Forced ventilation
2.4. **BAT conclusions for the mechanical treatment of waste with calorific value**		
2.4.1. Emissions to air	BAT 31.	In order to reduce emissions to air of organic compounds, BAT is to apply BAT 14d and to use one or a combination of the techniques given below. **a.** Adsorption **b.** Biofilter **c.** Thermal oxidation **d.** Wet scrubbing See Table 6.5 for BAT-associated emission level (BAT-AEL) for channelled TVOC emissions to air from the mechanical treatment of waste with calorific value.
2.5. **BAT conclusions for the mechanical treatment of WEEE containing mercury**		Unless otherwise stated, the BAT conclusions presented in this section apply to the mechanical treatment of WEEE containing mercury, in addition to BAT 25.

2.5.1. Emissions to air	BAT 32.	In order to reduce mercury emissions to air, BAT is to collect mercury emissions at source, to send them to abatement and to carry out adequate monitoring. *Description* This includes all of the following measures: - equipment used to treat WEEE containing mercury is enclosed, under negative pressureand connected to a local exhaust ventilation (LEV) system ; - waste gas from the processes is treated by dedusting techniques such as cyclones, fabricfilters, and HEPA filters, followed by adsorption on activated carbon (see Section 6.6.1); - the efficiency of the waste gas treatment is monitored; - mercury levels in the treatment and storage areas are measured frequently (e.g. once everyweek) to detect potential mercury leaks. See Table 6.6 for BAT-associated emission level (BAT-AEL) for channelled mercury emission to air from the mechanical treatment of WEEE containing mercury.
3. BAT CONCLUSIONS FOR THE BIOLOGICAL TREATMENT OF WASTE		Unless otherwise stated, the BAT conclusions presented in Section 3 apply to the biological treatment of waste, and in addition to the general BAT conclusions in Section 1. The BAT conclusions in Section 3 do not apply to the treatment of water-based liquid waste.
3.1. **General BAT conclusions for the biological treatment of waste**		

3.1.1. Overall environmental performance	BAT 33.	In order to reduce odour emissions and to improve the overall environmental performance, BAT is to select the waste input. *Description* The technique consists of carrying out the pre-acceptance, acceptance, and sorting of the waste input (see BAT 2) so as to ensure the suitability of the waste input for the waste treatment, e.g. in terms of nutrient balance, moisture or toxic compounds which may reduce the biological activity.
3.1.2 Emissions to air	BAT 34.	In order to reduce channelled emissions to air of dust, organic compounds and odorous compounds, including H2S and NH3, BAT is to use one or a combination of the techniques given below. **a.** Adsorption **b.** Biofilter **c.** Fabric filter **d.** Thermal oxidation **e.** Wet scrubbing See Table 6.7 for BAT-associated emission levels (BAT-AELs) for channelled NH3, odour, dust and TVOC emissions to air from the biological treatment of waste.
3.1.3. Emissions to water and water usage	BAT 35.	In order to reduce the generation of waste water and to reduce water usage, BAT is to use all of the techniques given below.
		a. Segregation of water streams
		b. Water recirculation
		c. Minimisation of the generation of leachate
3.2. **BAT conclusions for the aerobic treatment of waste**		Unless otherwise stated, the BAT conclusions presented in this section apply to the aerobic treatment of waste, and in addition to the general BAT conclusions for the biological treatment of waste in Section 3.1.

3.2.1. Overall environmental performance	BAT 36.	In order to reduce emissions to air and to improve the overall environmental performance, BAT is to monitor and/or control the key waste and process parameters. *Description* Monitoring and/or control of key waste and process parameters, including: - waste input characteristics (e.g. C to N ratio, particle size); - temperature and moisture content at different points in the windrow; - aeration of the windrow (e.g. via the windrow turning frequency, O2 and/or CO2 concentration in the windrow, temperature of air streams in the case of forced aeration); - windrow porosity, height and width. *Applicability* Monitoring of the moisture content in the windrow is not applicable to enclosed processes when health and/or safety issues have been identified. In that case, the moisture content can be monitored before loading the waste into the enclosed composting stage and adjusted when it exits the enclosed composting stage.
3.2.2. Odour and diffuse emissions to air	BAT 37.	In order to reduce diffuse emissions to air of dust, odour and bioaerosols from open-air treatment steps, BAT is to use one or both of the techniques given below. **a.**Use of semipermeable membrane covers **b.** Adaptation of operations to the meteorological conditions
3.3. **BAT conclusions for the anaerobic treatment of waste**		Unless otherwise stated, the BAT conclusions presented in this section apply to the anaerobic treatment of waste, and in addition to the general BAT conclusions for the biological treatment of waste in Section 3.1.

3.3.1. Emissions to air	BAT 38.	In order to reduce emissions to air and to improve the overall environmental performance, BAT is to monitor and/or control the key waste and process parameters. *Description* Implementation of a manual and/or automatic monitoring system to: - ensure a stable digester operation; - minimise operational difficulties, such as foaming, which may lead to odour emissions; - provide sufficient early warning of system failures which may lead to a loss of containment and explosions. This includes monitoring and/or control of key waste and process parameters, e.g.: - pH and alkalinity of the digester feed; - digester operating temperature; - hydraulic and organic loading rates of the digester feed; - concentration of volatile fatty acids (VFA) and ammonia within the digester and digestate; - biogas quantity, composition (e.g. H2S) and pressure; - liquid and foam levels in the digester.
3.4. **BAT conclusions for the mechanical biological treatment (MBT) of waste**		Unless otherwise stated, the BAT conclusions presented in this section apply to MBT, and in addition to the general BAT conclusions for the biological treatment of waste in Section 3.1. The BAT conclusions for the aerobic treatment (Section 3.2) and anaerobic treatment (Section 3.3) of waste apply, when relevant, to the mechanical biological treatment of waste.
3.4.1. Emissions to air	BAT 39.	In order to reduce emissions to air, BAT is to use both of the techniques given below. **a.** Segregation of the waste gas streams **b.** Recirculation of waste gas

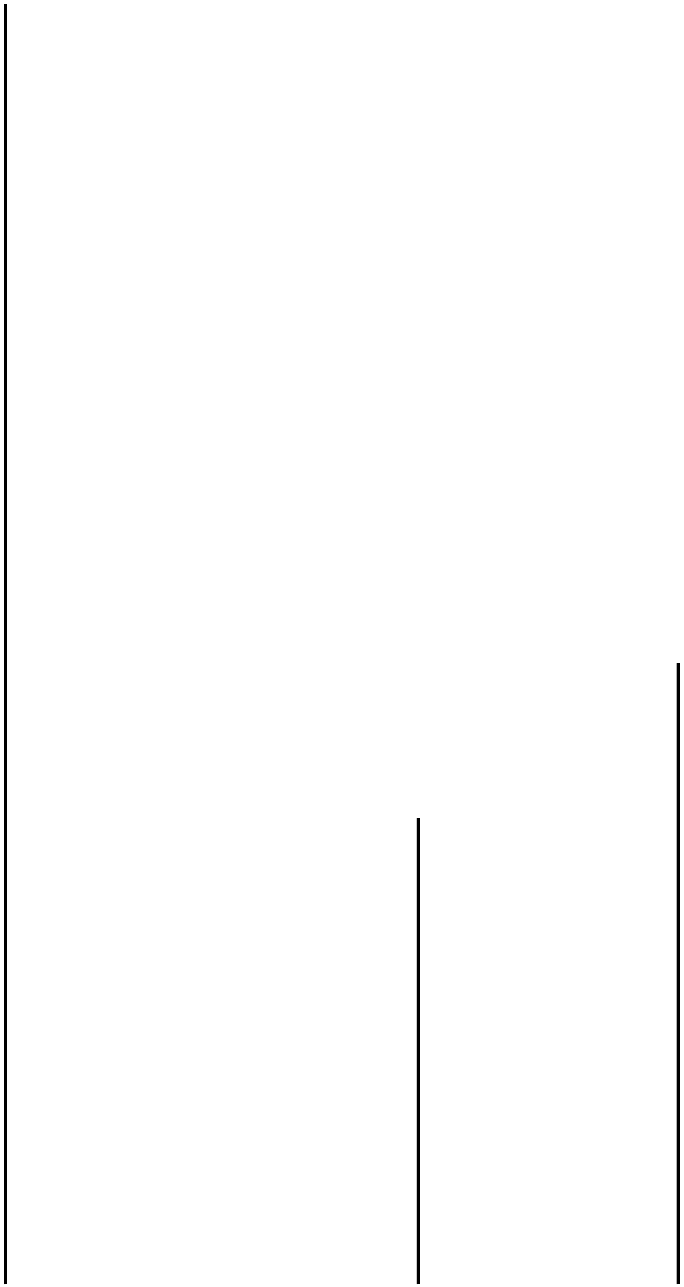
4. BAT CONCLUSIONS FOR THE PHYSICO-CHEMICAL TREATMENT OF WASTE		Unless otherwise stated, the BAT conclusions presented in Section 4 apply to the physico-chemical treatment of waste, and in addition to the general BAT conclusions in Section 1.
4.1. **BAT conclusions for the physico-chemical treatment of solid and/or pasty waste**		
4.1.1. Overall environmental performance	BAT 40.	In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2). *Description* Monitoring the waste input, e.g. in terms of: - content of organics, oxidising agents, metals (e.g. mercury), salts, odorous compounds; - H2 formation potential upon mixing of flue-gas treatment residues, e.g. fly ashes, with water.
	BAT 41.	In order to reduce emissions of dust, organic compounds and NH3 to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below. **a.** Adsorption **b.** Biofilter **c.** Fabric filter **d.** Wet scrubbing See Table 6.8 for BAT-associated emission level (BAT-AEL) for channelled emissions of dust to air from the physico-chemical treatment of solid and/or pasy waste.
4.2. **BAT conclusions for the re-refining of waste oil**		

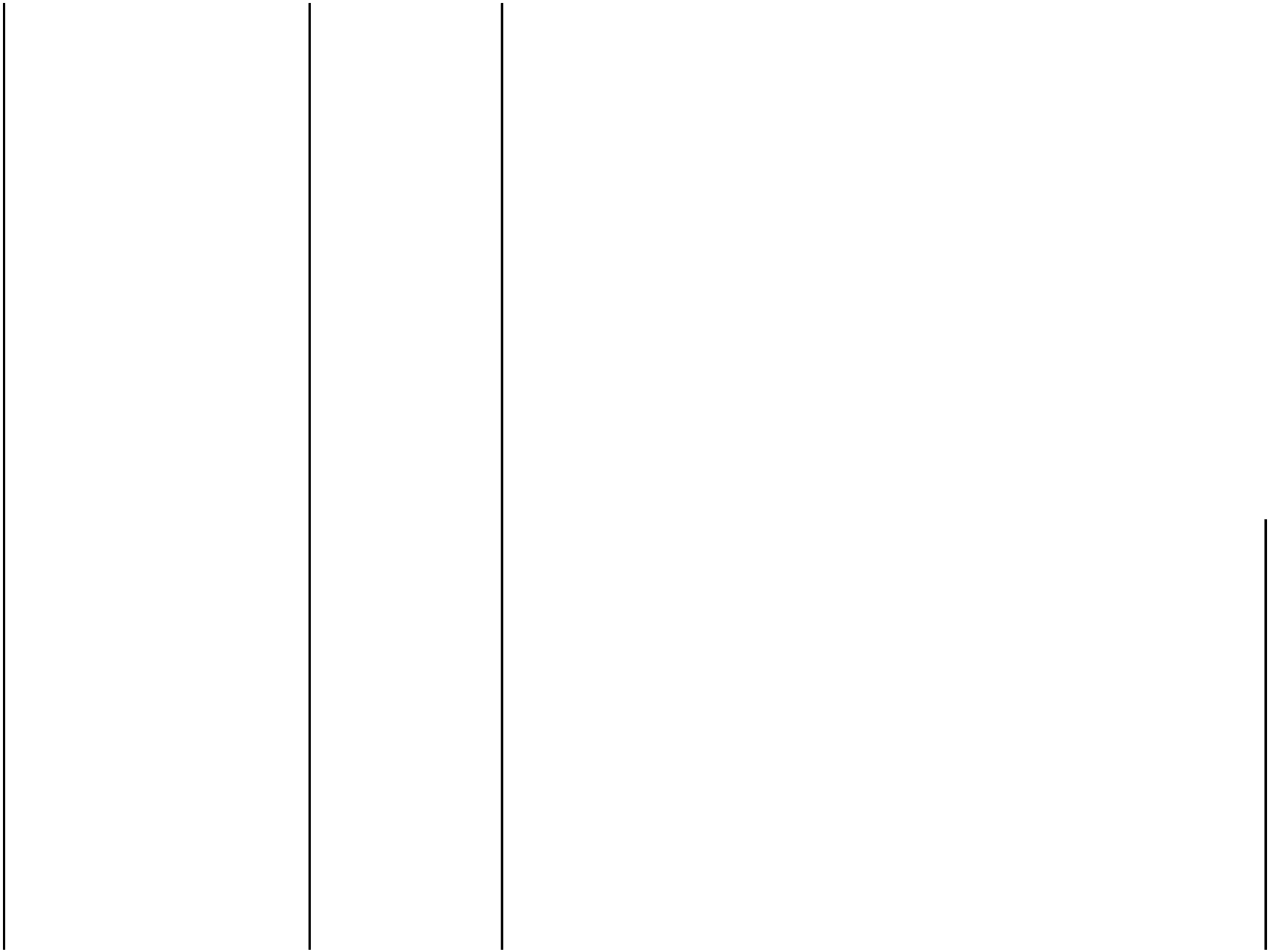
4.2.1. Overall environmental performance	BAT 42.	In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2). *Description* Monitoring of the waste input in terms of content of chlorinated compounds (e.g. chlorinated solvents or PCBs).
	BAT 43.	In order to reduce the quantity of waste sent for disposal, BAT is to use one or both of the techniques given below. **a.** Material recovery **b.** Energy recovery
4.2.2. Emissions to air	BAT 44.	In order to reduce emissions of organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below. **a.** Adsorption **b.** Thermal oxidation **c.** Wet scrubbing The BAT-AEL set in Section 4.5 applies. The associated monitoring is given in BAT 8.
4.3. **BAT conclusions for the physico-chemical treatment of waste with calorific value**		
4.3.1. Emissions to air	BAT 45.	In order to reduce emissions of organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below. **a.** Adsorption **b.** Cryogenic condensation **c.** Thermal oxidation **d.** Wet scrubbing The BAT-AEL set in Section 4.5 applies. The associated monitoring is given in BAT 8.

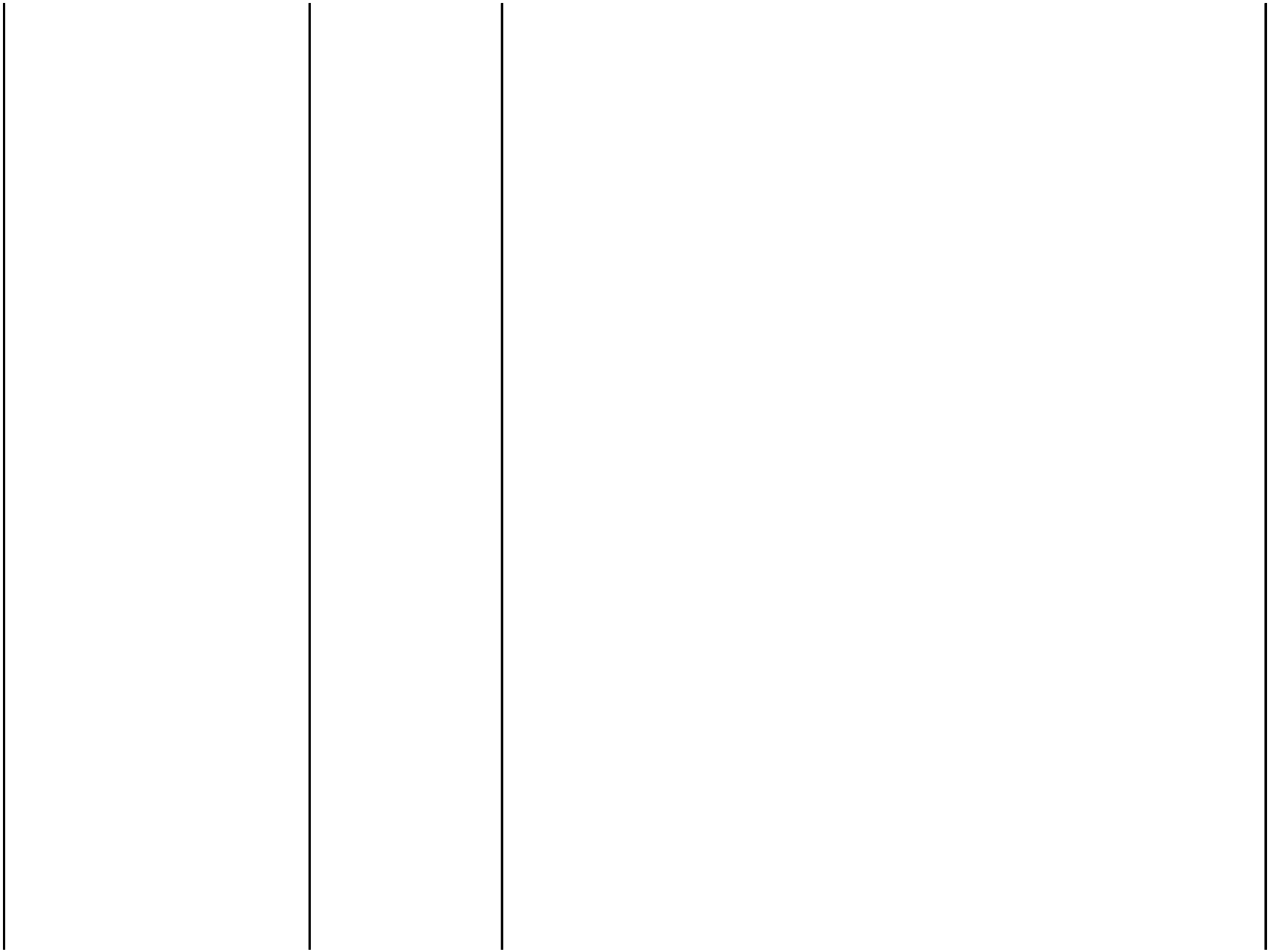
4.4. **BAT conclusions for the regeneration of spent solvents**		
4.4.1. Overall environmental performance	BAT 46.	In order to improve the overall environmental performance of the regeneration of spent solvents, BAT is to use one or both of the techniques given below. **a.** Material recovery **b.** Energy recovery
4.4.2. Emissions to air	BAT 47.	In order to reduce emissions of organic compounds to air, BAT is to apply BAT 14d and to use a combination of the techniques given below. **a.** Recirculation of process off-gases in a steam boiler **b.** Adsorption **c.** Thermal oxidation **d.** Condensation or cryogenic condensation **e.** Wet scrubbing The BAT-AEL set in Section 4.5 applies. The associated monitoring is given in BAT 8.
4.5. **BAT-AEL for emissions of organic compounds to air from the re-refining of waste oil, the physico- chemical treatment of waste with calorific value and the regeneration of spent solvents**		See Table 6.9 for BAT-associated emission level (BAT-AEL) for channelled emissions of TVOC to air from the re-refining of waste oil, the physico-chemical treatment of waste with calorific value and the regenration of spent solvents.
4.6. **BAT conclusions for the thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil**		

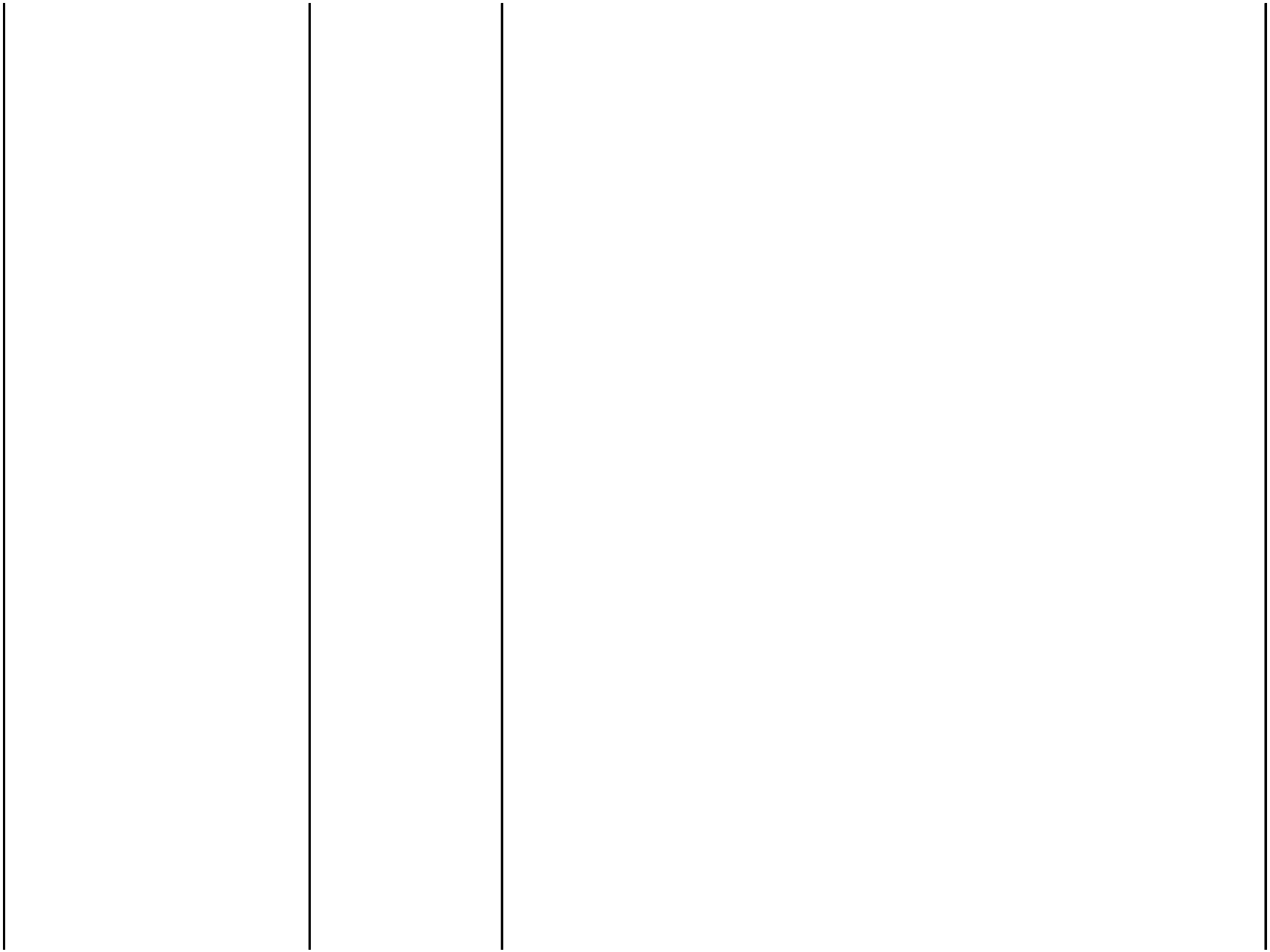
4.6.1. Overall environmental performance	BAT 48.	In order to improve the overall environmental performance of the thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil, BAT is to use all of the techniques given below. **a.** Heat recovery from the furnace off-gas **b.** Indirectly fired furnace **c.** Process-integrated techniques to reduce emissions to air
4.6.2. Emissions to air	BAT 49.	In order to reduce emissions of HCl, HF, dust and organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below. **a.** Cyclone **b.** Electrostatic precipitator (ESP) **c.** Fabric filter **d.** Wet scrubbing **e.** Adsorption **f.** Condensation **g.** Thermal oxidation The associated monitoring is given in BAT 8.
4.7. **BAT conclusions for the water washing of excavated contaminated soil**		
4.7.1. Emissions to air	BAT 50.	In order to reduce emissions of dust and organic compounds to air from the storage, handling, and washing steps, BAT is to apply BAT 14d and to use one or a combination of the techniques given below. **a.** Adsorption **b.** Fabric filter **c.** Wet scrubbing The associated monitoring is given in BAT 8.
4.8. **BAT conclusions for the decontamination of equipment containing PCBs**		

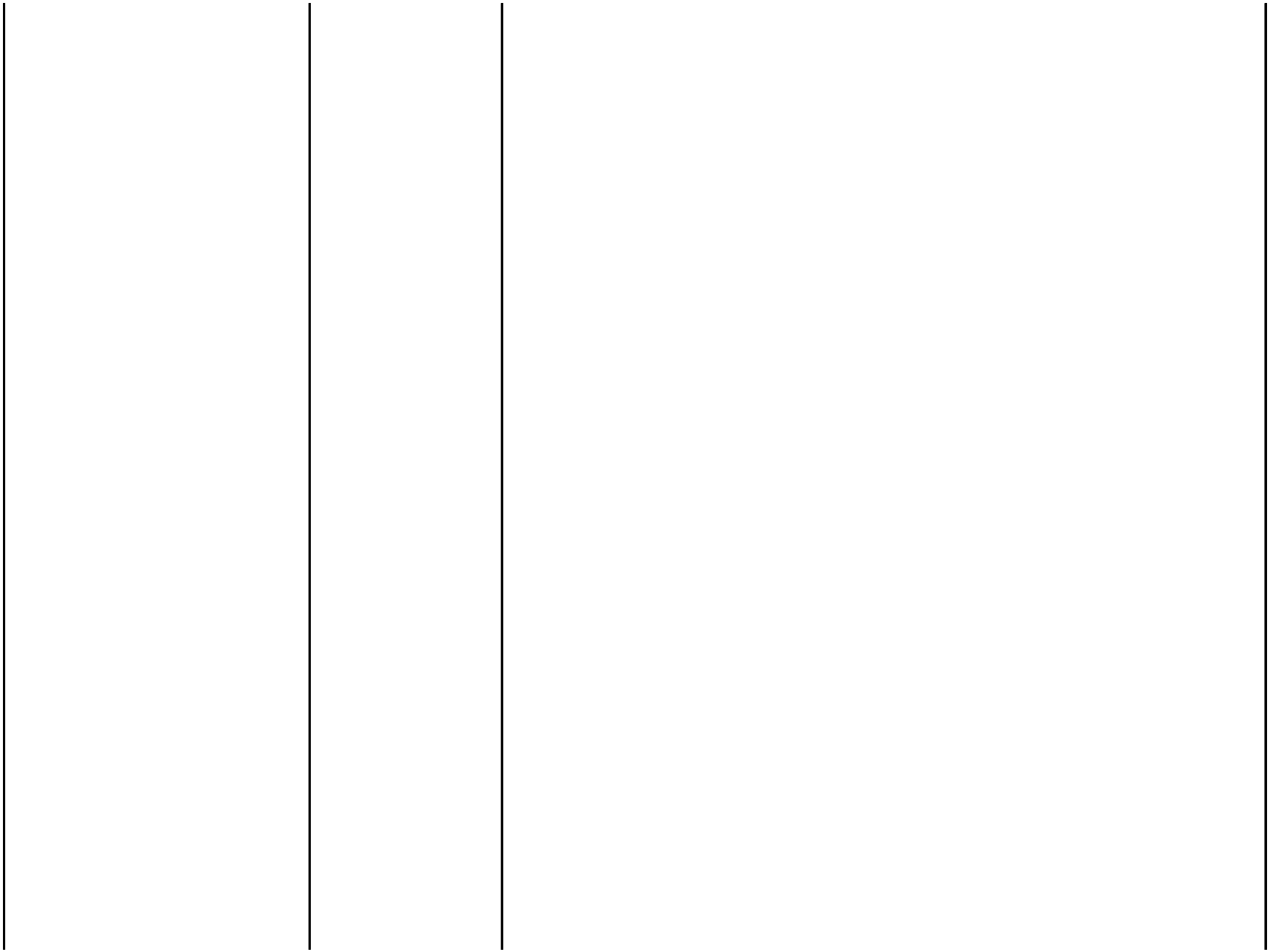
4.8.1. Overall environmental performance	BAT 51.	In order to improve the overall environmental performance and to reduce channelled emissions of PCBs and organic compounds to air, BAT is to use all of the techniques given below. **a.** Coating of the storage and treatment areas **b.** Implementation of staff access rules to prevent dispersion of contamination **c.** Optimised equipment cleaning and drainage **d.** Control and monitoring of emissions to air **e.** Disposal of waste treatment residues **f.** Recovery of solvent when solvent washing is used The associated monitoring is given in BAT 8.
5. BAT CONCLUSIONS FOR THE TREATMENT OF WATER-BASED LIQUID WASTE		Unless otherwise stated, the BAT conclusions presented in Section 5 apply to the treatment of water-based liquid waste, and in addition to the general BAT conclusions in Section 1.
5.1. **Overall environmental performance**	BAT 52.	In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2). *Description* Monitoring the waste input, e.g. in terms of: - bioeliminability (e.g. BOD, BOD to COD ratio, Zahn-Wellens test, biological inhibition potential (e.g. inhibition of activated sludge)); - feasibility of emulsion breaking, e.g. by means of laboratory-scale tests.
5.2. **Emissions to air**	BAT 53.	In order to reduce emissions of HCl, NH3 and organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below. **a.** Adsorption **b.** Biofilter **c.** Thermal oxidation **d.** Wet scrubbing See Table 6.10 for BAT-associated emission levels (BAT-AELs) for channelled emissions of HCl and TVOC to air from the treatment of water-based liquied waste.

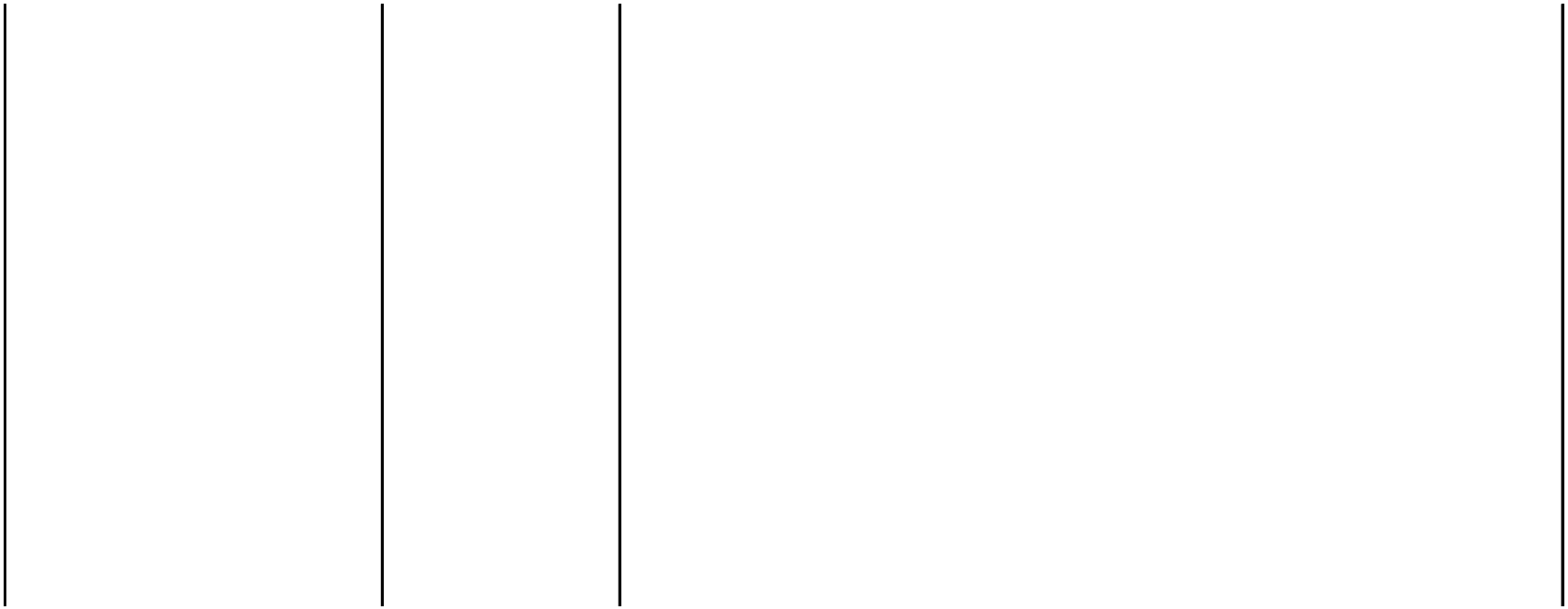












Dato for innfylling: 12.02.20	
Driften er i tråd med dette punktet *- beskriv hvordan*	**Driften er ikke i tråd med dette punktet** *- beskriv hvorfor ikke, evt. angi om det ikke er aktuelt.*
Rokke utarbeider hvert år retningslinjer for investering i miljøtiltak som ligger innenfor de økonomiske rammebetinngelser. Det foreligger prosedyrer som dekker punktene i paragraf IV.	Et EMS er under utarbeidelse. Benytter ROS-analyser for forbedring av anlegges miljøprestasjon.

Sigevann føres til renseanlegg. Rokke er med i et forprosjekt omhandlende kartlegging, deponigass og mulig utnyttelse.	
	Er ikke på plass, men Halden kommune generelt har utarbeidet en strategi med målsetting om utslipp mot 2030.
Følger lovverk og forbedrer driften kontinuerlig.	
	Drift av avfallsanlegget vil foregå i minst 15-20 år framover. Har ikke vurdert miljøpåvirkninger ved avvikling av driften annet enn ved 30 års etterdrift.
Har dialog med andre tilsvarende selskaper. Viser til BAT 2. Spillvann sendes til renseanlegg. Avgasser bli avfaklet. Har dekkende plan. Minimerer restproduketer til deponi.	
Ja. Har rutiner for melding av ulykker.	
	Har ikke luktproblemer, men har plan for håndtering av dette hvis det skulle bli aktuelt.

	Støynivået er ansett som lavt og under godkjente verdier. Vibrasjoner er ansett som ikke aktuelt.
Analyser og deklarering skal foreligge før leveranse til avfallsanlegget. Analyser og deklarering skal foreligge før leveranse til avfallsanlegget. Avfall er målt inn i deponiet. Tar stikkprøver av hvert 100. last deponi. Hvert lass blir visuelt kontrollert ved tipping. Det bygges hall for lagring av avfall i første havldel av 2020. Sikring ved stikkprøver og tipping på bestemte lokasjoner. Alt avfall blir sortert.	

Spillvann går til renseanlegget. Rokke følger grenseverdier satt i påslippstillatelsen. Prøver blir tatt etter renseanleggets påslippstillatelse. Måler gjennomsnittemperatur og gjennomsnittstrømming.	Måler ikke b), c) og d)
Bygger haller for å minimalisere flyavfall. Lagres i henhold til konsesjon. Alle underpunkter ivaretas. Bygger eget kaldtlager.	

Alle punkter ivaretas.	
Overvåkes ved månedlige vannprøver i henhold til påslippstillatelse.	
Overvåkes i henhold til påslippstillatelse.	
	Ikke relevant. Måles ikke.

	Ikke relevant. Måles ikke. Ikke relevant. Måles ikke. Ikke relevant. Måles ikke.
	Måles ikke.

Har årlig overvåkning av vann og strøm. Skal bli Miljøfyrtårn.	
	Måles ikke. Varer som lukter blir kjørt ut fra deponiet daglig.
	a) Måles ikke. Varer som lukter blir kjørt ut fra deponiet daglig. B) Ikke relevant c) Ikke relevant

Bruker godkjent utstyr. Nybygg får ventilasjon. Området vannes ved behov. Daglig kontroll av maskiner. Jevnlig kontroll av verneutstyr. Sopes ved behov.	Ikke relevant. Ikke relevant. Ikke relevant.
Bruker kun avfakling. Avfakling	
Ja Overvåkes ukentlig.	
	Ikke relevant. Ikke relevant. Ikke relevant.

	Ikke relevant.
Hensiktsmessig plassert.	Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant.
Blir dekket av krav satt til Miljøfyrtårn. Har membran under deponiet Lagt ned egen reservetank ved siden av pumpehus for spillvann Hall bygges i første halvdel av 2020. Alt vann går til renseanlegg. Ja Ja	Ikke relevant.

Lagt ned egen reservetank ved siden av pumpehus for spillvann.	
	Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant.

	Ikke relevant.
Har brannhydranter og brannutstyr. Riskmanager	Vern mot sabotasje er ikke relevant. Ikke relevant.
	Ikke relevant.
Blir dekket av krav satt i Miljøfyrtårn. Blir dekket av krav satt i Miljøfyrtårn.	

Bruker f.eks. tønner, IBC og paller til pakking av farlig avfall.	
	Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant.

Gjøres ved sortering. Blir videresendt som farlig avfall. Tas imot mot dokumentasjon fra rengjørere.	Ikke relevant.
	Ikke relevant. Ikke relevant. Ikke relevant.
	Ikke relevant.
	Ikke relevant. Ikke relevant. Ikke relevant.

	Ikke relevant. Ikke relevant.
	Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant.

Sendes til godkjent saneringsanlegg.	
[redacted]	

	Ikke relevant.
	Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant.
Skilles med egen kum. Tilfører ikke vann til deponiet annet enn regnvann.	Ikke relevant.

	Ikke relevant.
	Ikke relevant. Ikke relevant.
[redacted]	

	Ikke relevant.
	Ikke relevant. Ikke relevant.

	Ikke relevant.
	Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant.

Blir satt på designert område og kjørt til godkjent anlegg.	
	Ikke relevant. Ikke relevant.
	Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant.
	Ikke relevant. Ikke relevant. Ikke relevant. Ikke relevant.

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