	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**	Dato for innfylling: 20.12.2023	
Kapitler for BAT-konklusjoner	**BAT-konklusjon nr.**	**BAT-konklusjoner med beskrivelse av teknikk**	**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.*
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;	Øverste ledelse i Lista Biogass vil være ansvarlig og engasjert i etablering av god miljøstyring, inkludert oppfølging av miljøarbeidet og miljøprestasjonene til selskapet.	
		II. definition, by the management, of an environmental policy that includes the continuous improvement of the environmental performance of the installation;	Det vil bli etablert miljøpolitikk og mål for kontinuerlig forbedring som selskapet skal arbeide mot.	
		III. planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment;	Miljøstyringssystemet skal inkludere nødvendige prosedyrer og mål, samt budsjettplaner som støtter opp under disse.	
		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;	Miljøstyringssystemet og prosedyrene vil ta hensyn til alle disse elementene.	
		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;	Det vil bli etablert måling- og oppfølgingsprogrammer for miljøprestasjonene, systemer og prosedyrer for forebygging og avvikshåndtering, internkontroller, samt dokumentasjon av status og oppfølgingstiltak.	
		VI. review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness;	Ledelsen vil jevnlig foreta gjennomgang av status for mlljøprestasjonene og effektiviteten av miljøstyringen.	
		VII. following the development of cleaner technologies;	Selskapet vil tilstrebe å holde seg oppdatert på utviklingen av nye og bedre teknologier.	
		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;	Selskapet vil etablere prosedyre som sikrer trygg avvikling av prosesser og utstyr når dette blir nødvendig.	
		IX. application of sectoral benchmarking on a regular basis.	Selskapet vil delta i benchmarking-prosesser når vi finner dette hensiktsmessig.	
		X. waste stream management (see BAT 2); **XI.** an inventory of waste water and waste gas streams (see BAT 3)	Beskrevet i BAT 2. Ikke relevant. Alt vann skal gjenbrukes i prosessen (lukket system).	
		XII. residues management plan (see description in Section 6.6.5);	Det er etablert konkrete og spesifiserte kvalitetskrav til både råstoffer og produkter. Disse er/vil bli kommunisert og fulgt opp overfor leverandører og kunder, gjennom kontrakt, kontroll, prøvetaking og analyse.	
		XIII. accident management plan (see description in Section 6.6.5).	Det vil bli etablert beredskaps-tiltak og -planer for å håndtere avvik i kvalitet. Vireo vil utarbeide følgende dokumenter før oppstart: - Beredskapsplan - Eksplosjonsverndokument	
		XIV. odour management plan (see BAT 12);	-Recul har utarbeidet en luktrisikoanalyse, teknologivalg-analyse og spredningsberegninger. - Håndtering av lukt har vært et tema fra tidlig prosjekteringsfase. -Avvikssystem for å håndtere ev. klager på eksempelvis lukt	
		XV. noise and vibration management plan (see BAT 17);	- Støyberegninger og støykart fra prosjekteringen av anlegget. Oppdaterte støyberegninger og støykart for begge anleggene jobbes med og etableres ifm prosjektering - Handlingsplan for å følge opp ev. støyreduserende tiltak i internkontrollen.	
		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	Følgende tiltak er iverksatt: - Registrering av	

	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**	Dato for innfylling: 20.12.2023	
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		f. Ensure waste compatibility prior to mixing or blending of waste **g.** Sort incoming solid waste	råstofftype/substrattype, leveringsdato og- tid, informasjon om leverandør, mengder, tørrstoffandel. - Substratene må vurderes hver for seg i forhold til viskositet, pH, partikkelstørrelse og fremmedlegmer - Stikkprøver - Krav til partikkelstørrelse - Krav til innhold av tørrstoff, tungmetaller, pH og total flyktig nitrogen - Løsning for å fjerne fremmedlegmer (metallbiter, stein m.m.) - Neddelere med matrise og kniv kombinert med steinfelle ved substratmottak - Neddelerkniver i kombinasjon med resirkuleringspumper til omrøring av tanker - Forskjellige substrater lagres på forskjellige mottakstanker før substratet føres inn i miksetank - Analyseresultater av biorest verifiseres før bioresten varedeklareres etter Norsk Standard 2890, og leveres tilbake til bonden eller annen egnet mottaker	
	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).	Prosessflytskjema - Avlufting fra atomsfæriske tanker - Biofilter - Avgass fra gassfyrt kjel (990 kW innfyrt effekt) - Avgass fra fakling ved unormale driftssituasjoner Luktrisikovurdering + beskrivelse av rensing av lukt er vedlagt søknaden til Statsforvalter. Alt prosessvann og vaskevann er i en lukket sløyfe og blir gjenbrukt i anlegget. Anlegget har ikke andre utslipp til vann i form av spillvann eller tilsvarende. Alt dette er beskrevet og beregnet i design base for anlegget, og vil bli oppdatert etter hvert som vi tilegner oss ny kunnskap og erfaring gjennom drift av anlegget.	
	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	Alt substrat blir lagret i egne tanker i henhold til EN ISO 28765:2016 I prosjekteringen er det gjort beregninger av forventet mottatt mengde substrat opp mot tankenes kapasitet. Lagring av råstoff og produkter er planlagt og designet iht. god ingeniørpraksis for å oppfylle alle relevante myndigetskrav og standarder for trygg lagring. Ikke relevant. Dersom det oppstår farlig avfall ved anlegget skal avfallet sorteres, lagres og leveres/deklareres iht. avfallsforskriften.	
	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).	- Håndtering og overføring av avfall utføres av kvalifisert personale. - Dokumentert opplæring for internt og eksternt personell. - Håndtering og overføring av avfall blir behørig dokumentert, validert før utførelsen og kontrollert etter utførelsen. - Rutiner for daglige vernerunder el. for å forebygge og oppdage spill, lekkasjer mv. - Arbeidsprosedyrer for de ulike arbeidsprosessene i anlegget.	
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).	Ikke relevant.	

	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**	Dato for innfylling: 20.12.2023	
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1.3. **Emissions to air**	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.	Ikke relevant. Virksomheten skal ikke ha utslipp til vann utover sanitært avløpsvann og overvann til kommunalt nett. Vaskevann og prosessvann vil bli gjenbrukt i anlegget.	
	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.	Det vil bli etablert måleprogrammer for i samsvar med gjeldende myndighetskrav og relevante standarder.	
	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	Ikke relevant.	
	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.	Luktrisikovurdering og beregninger av luktkonsentrasjoner ved naboer. Lukt har vært et sentralt tema fra tidlig prosjekteringsfase. Kartlegging av luktutslipp når anlegget er i full drift.	
	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.	Årlig forbruk av vann, energi og gass overvåkes ved hjelp av vann-, strøm- og gassmåler. Mengdene av produsert biorest registreres i eget system.	
	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.	Virksomheten har gjennomført følgende forebyggende og konsekvensreduserende tiltak mot lukt: - Ventilasjon, punktavtrekk og rensing av avtrekk - Leveranse av substrat innendørs - Luktrisikovurdering og luktberegninger - Driftslogg (oversikt over driftstider, aktiviteter som kan føre til luktutslipp, antall og typer leveranser, vær og vindforhold mv.) -Avvikssystem og rutine for oppfølging av luktklager - Kommunikasjonsplan - Beskrivelse av tiltak ved avvik fra normal drift	
	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	Best tilgjengelige teknikk gjelder åpne systemer. Virksomheten bør likevel treffe tiltak for å minimere oppholdstiden i rør, tanker, beholdere og treffe tiltak for å håndtere sesongavhengige topper i avfallsvolumene.Driften foregår uavbruttog kontinuerlig under vanlig drift. Ikke relevant, men Nalco skumdemper el. vil bli brukt ved evt. skumdannelse i råtnetank. Ikke relevant.	
	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.		

	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**	Dato for innfylling: 20.12.2023	
Kapitler for BAT-konklusjoner	**BAT-konklusjon nr.**	**BAT-konklusjoner med beskrivelse av teknikk**	**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.*
		a. Minimising the number of potential diffuse emissions sources	Mottakshall innendørs og med avsug i ventilasjon mot filter. All substrat og biorest blir transportert i tette rørsystem av helsveiste PE rør, med flenser kun ved ventiler og pumper. Videre er det for biofilter montert et grenrør med et ekstra utbyttbart filter for å unngå utslipp til luft under vedlikehold.All produsert gass blir transportert i tette rørsystem, med helsveiste rustfrie rør, med et minimum av flenser. Gjennom HAZID / HAZOP er det avdekket diffuse luktkilder og tiltak beskrevet.	
		b. Selection and use of high-integrity equipment	Det er valgt utstyr, rør og systemer med høy driftspålitelighet og som er i samsvar med aktuelle standarder og beste bransjestandard.	
		c. Corrosion prevention	Anlegget vil bli bygget i materialer som skal være motstandsdyktige mot korrosjon i det miljøet de vil bli utsatt for. Det innebærer en stor del rustfrie materialer. For øvrig vil det bli etablert et kontroll-/inspeksjons- og vedlikeholdsprogram for planmessig tilstandskontroll og forebyggende av anleggene.	
		d. Containment, collection and treatment of diffuse emissions:	Prosessene foregår i lukkede anlegg/lukkede rom. Eventuelle diffuse utslipp fra prosessen fanges opp av romventilasjonen eller punktavsug,evt håndtert i egne filtersystemer.	
		e. Dampening	Ikke relevant.	
		f. Maintenance	Vedlikeholdsprogram og vedlikeholdsrutiner. Alt utstyr som kan ha lekkasjer er lett tilgjengelig. Utstyr som kan ha lekkasjer er plassert over underlag av betong eller asfalt, slik at eventuelle lekkasjer vil bli oppdaget raskt.	
		g. Cleaning of waste treatment and storage areas	Rutiner for regelmessig rengjøring av alle deler av biogassanlegget.	
		h. Leak detection and repair (LDAR) programme	Inspeksjoner og eventuelle utbedringer av lekkasjer vil foregå regelmessig i henhold til fastsatte vedlikeholdsprosedyrer. Gass på avveie fanges opp av gass-alarm, og det eksisterer alarmnivåer ihht regelverket.	
	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	QRA, HAZOP. Anlegget er prosjektert og dimensjonert slik at fakling er unntaksvis, og at fakling må gjennomføres ved ikke-rutinemessige driftsforhold.	
		b. Plant management	Anlegget er helautomatisert og forriglet for å unngå fakling.	
	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	Faklingsutstyret er dimensjonert, prosjektert og inntrimmet for å gi optimal og effektiv forbrenning av gass.	
		b. Monitoring and recording as part of flare management	Faklinghendelser registreres, både i tid det fakles og volum gass som fakles	
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;	Støyvurdering/støyberegninger er utført og oversendt Statsforvalter . Loggføring av drift, handlinsplan for å redusere støy basert på risikovurdering og støyberegninger.	
		II. a protocol for conducting noise and vibration monitoring;	Det vil bli etablert rutiner for å utføre støymålinger/støyberegnigner ved gjentatte støyklager og for å sikre at fastsatte støygrenser overholdes.	
		III. a protocol for response to identified noise and vibration events, e.g. complaints;	Avvikssytem, rutine for å følge opp støyklager, nye målinger/ beregninger av støy ved gjentatte klager.	
		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.	Støyreduserende tiltak er prosjektert og vil bli gjennomført på bakgrunn av støyvurderinger/beregninger og miljørisikovurdering. Ikke relevant for dette anlegget.	
	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.		

	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**	Dato for innfylling: 20.12.2023	
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1.5. **Emissions to water**		**a.** Appropriate location of equipment and buildings	Området er regulert til industri. Virksomheten er kjent med grenseverdiene til støy fra industri T-1442 og vil velge utstyr og anleggsdeler samt utforme anlegget slik at grenseverdiene overholdes. Støyvurdering og støysonekart vil bli utarbeidet for å verifisere at grenseverdiene vil bli overholdt.	
		b. Operational measures	Anlegget inspiseres daglig mandag til fredag. Ødelagt utstyr vedlikeholdes og repareres fortløpende. Støyendeaktiviter, trafikk, lasting/lossing skjer i hovedsak på dagtid. Påbud om hørselvern i støyende soner.	
		c. Low-noise equipment	Valg av utstyr som har lavt støynivå.	
		d. Noise and vibration control equipment	Støydemping/isolering vil bli gjennomført etter behov om det viser seg nødvendig for å overholde gjeldende krav.	
		e. Noise attenuation	Se pkt. d. over.	
	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.		
		a. Water management	Alt vann som kommer inn med substratet vil følge bioresten ut.	
		b. Water recirculation	Spylevann og vaskevann vil sendes inn i prosessen.	
		c. Impermeable surface	Det vil være tett fast dekke i lossesonen og i prosesshallen. I uteområdene og rundt tanker vil det være semipermeabelt dekke av "kjørefast" grus.	
		d. Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels	Det vil bli etablert nivå- og trykkovervåking på alle tanker og rørledninger.	
		e. Roofing of waste storage and treatment areas	Alle prosesser er under tak i lukkede rom.	
		f. Segregation of water streams	Se pkt. b over.	
		g. Adequate drainage infrastructure	Se BAT 3 (ii) Det vil bli etablert separate avløpssystem for innendørs prosessanlegg og vaskevann, samt utendørs overvann. Ved spill utendørs pga. uhell vil anlegget ha rutiner for å samle opp spill.	
		h. Design and maintenance provisions to allow detection and repair of leaks	Se pkt. d over.	
		i. Appropriate buffer storage capacity	Anlegget er designet med ekstra bufferkapasitet ift. forventet normal lagerbeholdning.	
	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.	Anlegget har ikke utslipp til vann. Spillvann/vaskevann går tilbake inn i anlegget for gjennbruk.	
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	Internkontrollsystem, kvalitets- og ledelsessystem, ROS-analyse for anlegget, beredskapsplan, eksplosjonsverndokument, HAZID	
		b. Management of incidental/accidental emissions	Beredskapsplan og prosedyrer, eksplosjonsverndokument	
		c. Incident/accident registration and assessment system	Avvikssystem, rutine for varsling av uhell og ulykker til nødetatene, DSB og forurensningsmyndighetene	

	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**	Dato for innfylling: 20.12.2023	
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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).	Antas å være ikke aktuelt. Det tilsettes ikke noen kjemikalier til prosessen og virksomheten har ikke avfall som kan erstatte eventuelle materialer som brukes i anlegget.	
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	Virksomheten har gjort beregninger av energiproduksjon, varmebalansen til anlegget og strømforbruk. Biogassanlegget vil bli etablert med så høy grad av varmegjenvinning som mulig (varmepumper, gjenvinning av tilført energi til biogassoppgraderingsanlegget, gjenvinning av energi fra utråtning med mer)	
		b. Energy balance record	Virksomheten vil føre oversikt over energiforbruk og energiproduksjon.	
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.	Det er under utarbeidelse et internkontrollsystem som også inkluderer plan og system for avfallshåndtering og gjenvinning/resirkulering. Dette vil være på plass før oppstart av anlegget.	
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.	Ikke relevant. Virksomheten har ikke mekanisk behandling av avfall.	
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.	Ikke relevant. Virksomheten har ikke mottak eller mekanisk behandling av metallavfall.	
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.	Ikke relevant. Virksomheten hverken mottar eller behandler WEEE (elektronisk og elektrisk avfall)	
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		

	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**	Dato for innfylling: 20.12.2023	
Kapitler for BAT-konklusjoner	**BAT-konklusjon nr.**	**BAT-konklusjoner med beskrivelse av teknikk**	**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.*
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.	Ikke relevant. Virksomheten har ikke mekanisk behandling av avfall med brennverdi.	
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.	Ikke relevant. Virksomheten har ikke mekanisk behandling av WEEE som inneholder kvikksølv.	
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.	Det er etablert kvalitetskrav for råstoff/substrat og dette vil bli fulgt opp gjennom mottakskontroll og prøvetaking når anlegget settes i drift.	
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.	Anlegget er designet med avsug og ventilasjon, samt rensing av luktgasser med en kombinasjon av både mineralfilter, kullfilter og biofilter og termisk oksidasjon. Ja, mineralsk biofilter. Ja. Benyttes ikke. Ja. Benyttes ikke, men forfilteret er designet for bruk av mye vann for å sikre at vannløselige forbindelser vaskes ut før hovedfilter	
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	Anlegget har ikke direkte utslipp til vann. Vaskevann vil bli samlet opp og gjenbrukt i anlegget.	
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.	Ikke relevant. Virksomheten har ikke aerob behandling av avfall. Små mengder oksygen vil tilføres i sekundære råtnetanker for å redusere H2S-konsentrasjonen.	
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.		

	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**	Dato for innfylling: 20.12.2023	
Kapitler for BAT-konklusjoner	**BAT-konklusjon nr.**	**BAT-konklusjoner med beskrivelse av teknikk**	**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.*
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	Ikke relevant. Virksomheten har ikke mekanisk-biologisk behandling av avfall.	
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.	Ikke relevant. Virksomheten har ikke fysisk-kjemisk behandling av fast og/eller tyktflytende avfall.	
	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).	Ikke relevant. Virksomhetens drift omfatter ikke omraffinering av spillolje.	
	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.	Ikke relevant. Virksomheten har ikke fysisk-kjemisk behandling av avfall med brennverdi.	
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	Ikke relevant. Virksomheten regenerering ikke brukte løsemidler.	

	Bedriftens navn:	**BAT-konklusjoner for avfallsbehandling**	Dato for innfylling: 20.12.2023	
Kapitler for BAT-konklusjoner	**BAT-konklusjon nr.**	**BAT-konklusjoner med beskrivelse av teknikk**	**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.*
		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.	Ikke relevant.	
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	Ikke relevant. Virksomheten driver ikke med varmebehandling av brukt aktivt karbon, katalysatoravfall og utgravd forurenset jord.	
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.	Ikke relevant. Virksomheten driver ikke med vasking med vann av utgravd forurenset jord.	
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.	Ikke relevant. Virksomheten dekontaminerer ikke utstyr som inneholder PCB.	
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.	Ikke relevant. Virksomheten behandler ikke vannbasert flytende avfall.	
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.	Ikke relevant. Virksomheten behandler ikke vannbasert flytende avfall.	