GAP ALBA LTD
Binn Farm, Glenfarg, Perth

Permit Variation

Permit Number PPC/A/5009290

Contents

1 Non-Technical Summary of Determination

Provide a non-technical summary of the process and determination

GAP Alba Ltd. propose to use the former Solid Recovered Fuel (SRF) building and site for installation of processing equipment to treat end of life Waste Temperature Electrical Equipment (WTEE) and Insulation Panels.

The new process outlined within the application will efficiently remove and capture oils and refrigerant from all WTEE processes, and for the WTEE and Insulation Panels, to remove and capture the blowing agent encapsulated within the foam.

Input: Refrigeration devices, freezers, fridge-freezer combinations, air conditioners.

Preparation: All loose parts such as cables, food containers and glass, and any food residues, are removed manually. Harmful substances, such as mercury switches in freezers, are also removed by hand.

Stage 1 - Extraction of Cooling circuit:
To avoid environmental hazards, the coolant mixture present in the cooling circuit is extracted in the first treatment stage. The cooling circuit is pierced with special piercing tongs and the various VHC/VFC refrigerants, as well as refrigerant oil, are extracted from the cooling circuit so that these substances can then be thermally separated and disposed of appropriately.
The extraction takes place by means of a vacuum system. The refrigerant/oil mixture flows into a separation unit in which the VHC/VFC components are separated (boiled out) from the oil. After this degassing process, the cleaned waste oil is filled into containers and passed to specialised companies for further processing. The recovered refrigerants are fed into a pressure-resistant container. Subsequently, the compressor is separated from the refrigerating device body by means of hydraulic shears and disposed of. After the compressors have been removed, the refrigerating devices move forward to the entry of the shredder mechanism.

As part of the residual oil removal process, a hole is bored in the separated compressors and the compressors are emptied of residual oil. The refrigerant/oil mixtures obtained in the process are also extracted and thermally treated in the extraction system so that a minimal residual VHC/VFC content is maintained.

Stage 2 - Shredding | Fraction separation & extraction of pollutants:
The refrigerating devices are shredded (pre- and post-shredding) and processed so that the solid fractions of iron, aluminium, copper and other residual materials (mainly plastics) can be separated from each other. The separated materials generated by the process are passed on as secondary raw materials to other recyclers. Since the propellants bound in the insulating foams are released during the shredding process the separation of the recyclable fractions takes place with extraction of the entire process air stream. The PUR foams are broken down by means of special shredders to destroy the pore structure and to achieve maximum degassing of the foaming agents contained in the foam (VHCs/VFCs). To remove all residues from the process air, it is collected by suction pipes and then freed of dust particles by fabric filters. Any moisture present is then removed from the dust-free exhaust air.

Two different processes are used to remove the CFCs from the air: it is possible to freeze or condense the gases contained in the process air by means of low-temperature condensation. Secondly, adsorption is used to clean the air flow using activated carbon.

Output: The other shredded components, clean ferrous metal, non-ferrous metal, and plastic are separated and recovered using a combination of magnets, eddy currents, and air sifting, to produce clean streams of recyclable material which are then transferred to authorised downstream facilities.

Emissions from the facility are limited to clean exhaust air stream from blowing agent capture system which is continuously monitored for Volatile Organic Compounds (VOC)

Glossary of Terms
BAT - Best Available Techniques BREF – Best Available Techniques Reference Document BAT-C – Best Available Technique Conclusions CO – Coordinating Officer EfW – Energy from Waste ELV – Emission Limit Value HRD – High Rate Discharge HWRC – Household waste and recycling centres LEL – Lower Explosive Limit ODS – Ozone-depleting substances POP – Persistent organic pollutant SRF – Solid Recovered Fuel TVOC – Total Volatile Organic Compounds VFC –Volatile (hydro)fluorocarbon VOC – Volatile Organic Compounds WEEELABEX – WEEE LABEL OF EXCELLENCE. European Standards for Treatment and Recycling of E&E Waste and for Monitoring the Processing Companies WTBREF – Best Available Techniques (BAT) Reference Document for Waste Treatment WTEE – Waste temperature exchange equipment

2 External Consultation and SEPA's response		
Is Public Consultation Required? (if no delete rows below)		**Yes**
Advertisement Check:	**Date**	**Compliance with advertising requirements**
Edinburgh Gazette	**04 Nov 24**	**Compliant**
Perth & Kinross Courier	**30 Oct 24**	**Compliant**
Officer Checking advert:		
No of responses received	None	
Summary of responses and how they were taken into account during the determination:		
None		
Summary of responses withheld from the public register on request and how they were taken into account during the determination:		
None		
Is PPC Statutory Consultation Required? (if no delete rows below)		**Yes**
Food Standards Agency:	Consulted 21 Oct 24: Reply dated 11 Nov 24, No concerns raised	
Health Board:	NHS Tayside, Consulted 21 Oct 24: No response	
Local Authority	Perth & Kinross Council, Consulted 21 Oct 24: No response	
Scottish Water	Not consulted	
Health and Safety Executive	Not consulted	
NatureScot	Consulted 21 Oct 24: Replied 13 Nov 24 with no comments raised	

Discretionary Consultation required? (if yes provide justification and details below, otherwise delete row)	**No**
Enhanced SEPA Consultation required? (if yes provide justification and details below, otherwise delete row)	**No**
"Off site" consultation required (if yes provide justification and details below, otherwise delete row)	**No**
Transboundary Consultation required? (if yes provide justification and details below, otherwise delete row)	**No**
Is Public Participation Consultation Required? (if yes provide justification and details below, otherwise delete rows below)	**Yes**

Date SEPA notified applicant of draft determination	
Date draft determination placed on SEPA's Website	
Details of any other 'appropriate means' used to advertise the draft. Seek advice from the communication department	
Date public consultation on draft permit opened	11/02/2025
Date public consultation on draft permit consultation closed	11/03/2025
Number of representations received to the consultation	
Date final determination placed on the SEPA's Website	

Summary of responses and how they were taken into account during the determination:

Summary of responses withheld from the public register on request and how they were taken into account during the determination:

REMOVE THIS BOX FROM ANY VERSION OF THIS DOCUMENT TO BE PLACED ON THE WEBSITE OR PUBLIC REGISTER. RETAIN IN THE VERSION FOR THE WORKING FILE.

Officer:	CO

3 Administrative determinations

Determination of the Schedule 1 Activity

The Schedule 1 Activity described within the permit will expand as follows.
Currently the site is authorised for a waste activity regulated under:
Section 5.4, Disposal, recovery or a mix of disposal or recovery of non-hazardous waste,

The Section 5.4 activity will be removed from the permit and the following activities will be added to the permit at this variation:

Section 5.3, Disposal or recovery of hazardous waste (b),
and,
Section 5.6 ,Temporary storage of hazardous waste

Both of these activities are as described in the PPC 2012 regulations

Determination of the Stationary Technical Unit to be permitted

The Stationary Technical Unit will be replaced in its entirety with a new process and an additional activity will be added to include the temporary storage of waste at the site.
Determination of Directly Associated Activities
The Directly Associated Activities will be replaced in their entirety in line with the new site process.
Determination of Site Boundary
The overall site boundary is unaffected by the proposed changes
Officer: CO

4 Introduction and Background

4.1 Historical Background to the activity and variation

The original PPC Permit (PPC/A/1138879) was held by Binn Waste Ltd in respect of a waste treatment operation at Binn Farm, Glenfarg, near Perth. The purpose of the operation was to produce Solid Recovered Fuel (SRF) from suitable residual wastes, with the finished SRF product outputs being transferred off-site for energy recovery in cement kilns across Europe. The facility became operational during 2016. The SRF production process consisted of drying incoming residual wastes within two drying bays, which allowed warm air (heated by a biomass boiler and heat exchanger) to be blown through the wastes until the required moisture content was achieved. Next the dried wastes were sorted and graded using a combination of mechanical and manual sorting to remove recyclables and non- combustibles. The remaining materials were shredded to a defined particle size for SRF and were then baled in a horizontal baler and wrapped in plastic to protect the bales during storage and transit.

All waste processing operations, apart from finished bale storage, were conducted within a building (portal frame and steel cladding) and were carried out on an impermeable concrete floor. Bale storage was permitted outside on an area with an impermeable surface liner linked to the site SUDs system.
As a result of commercial pressures on SRF values across Europe, and in response to shipping/logistical challenges, a decision was taken by Binn Waste in late 2020 to cease SRF production. A formal notice was issued to SEPA on 22nd October 2020 advising of the cessation of SRF manufacture and notifying that the facility would be decommissioned with effect from 30th November 2020. All SRF materials, both unprocessed and finished baled products, were removed from site and the facility was cleared of wastes. Processing equipment was dis-assembled and the majority was removed from site.

Binn Group agreed a lease with another company, GAP Alba Ltd. to use the vacated SRF building and site for installation of processing equipment to treat end of life Waste Temperature Electrical Equipment and Insulation Panels.

At that time a partial transfer of permit PPC/A/1138879 took place with GAP ALBA LIMITED taking on the responsibility for the Stationary technical unit and buildings described within the permit under a new permit identified as PPC/A/5009290.

Binn Group have retained a part permit under the original permit number of PPC/A/1138879 and retain control of the Boiler and SUDS pond associated with the site.

4.2 Description of activity

The existing activity, Disposal, recovery or a mix of disposal or recovery of non-hazardous waste, as described in SECTION 5.4 of the PPC (Scotland) Regulations 2012, will be retained to cover the non hazardous waste activities which will occur on site.

The new activity proposed for the site is as described in PPC (Scotland) Regulations 2012, Schedule 1 Section 5.3, Part A, (b): Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day.

The proposed process outlined within the application will efficiently remove and capture oils and refrigerant from all WTEE processes, and for the WTEE and Insulation Panels, to remove and capture the blowing agent encapsulated within the foam.

An additional activity will be added to the permit to include the temporary storage in an installation with a capacity of more than 50 tonnes of hazardous waste pending any of the activities described in any of Sections 5.1 to 5.3 (b) of that Section, excluding temporary storage, pending collection, on the site where the waste is generated as described in Section 5.6, Part A,(a) of Schedule 1 to PPC (Scotland) Regulations 2012.

4.3 Outline details of the Variation applied for

The proposed variation will completely remove the existing SRF process and Stationary Technical Unit described within the Permit and replace them with a new Stationary Technical unit to process WEEE and non WEEE containing ODS.

4.4 Guidance/directions issued to SEPA by the Scottish Ministers under Reg.60 or 61.

None

4.5 Identification of important and sensitive receptors

The following Nature Scot designated site is within 2km east-northeast of the installation:
Turflundie Wood: SSSi Nature Scot site code 8160 EU Site Code 107118, SAC Nature Scot site code 8403 EU Site Code UK0030240.

Nearest housing:
Drumcairn is approx. 1400m to the North of the site
Catochil Farm is approx. 400m to the East of the site
Balvaird farm is approx. 830m to the South of the site
The Bein Inn hotel is approx. 1500m to the West of the site.

Officer:	CO

5 Key Environmental Issues

5.1 Summary of significant environmental impacts

The proposals for the site will have a minimal environmental impact with only 2-point source emissions to air and a discharge from the surface water SUDS pond to the water environment.
These discharges and the associated mitigation are discussed in full below.

5.2 Emissions to Air

Point Source emission to air:

The stationary technical unit for the process is entirely located within a building.

The Erdwich Refrigerator Recycling Plant uses proven, reliable technology, designed and manufactured to meet the standards of DIN EN ISO 9001:2008 (Certificate no. 41297728/6) and ISO 14001:2004 (Certificate no. 170607051/6), in line with European Directives. After commissioning, the plant will also be certified according to European standards CENELEC EN 50625-2-3, CLL/TS 50625-3-4 (July 2017), and WEELABEX.

The recycling plant is designed to meet the standards of 2006/42/EC, 97/23/EC, and 94/9/EC (ATEX 95). Stage 1 of the process uses a tilting conveyor with up to 16 stations to extract refrigerant oil and gas by piercing the refrigerator system and using suction. The oil and gas are separated, with the refrigerant gas being condensed and stored in a pressurized container before being sent to an offsite treatment facility. The plant includes a 3-stage liquefaction process and three activated carbon adsorption beds.

The proposed facility has two Point Source Emissions to Air:

Emission Point 1.

The main outlet is from the activated carbon filter system which adsorbs TVOC and VFC from processed air. The output is approx. 1000m3/h at 5000Pa with a temperature less than 45°C
The two-stage adsorption system manages gas streams emissions to achieve levels of:
< 15mg/m^3 TVOC;
< 10mg/m^3 VFC.

The gas stream is continually monitored, and plant is designed shut down if limit values are exceeded.
The site propose to carry out on site monitoring of emissions as part of daily process control using procedure '*DOC 0023 S-EWP-GAP Alba -Monitoring of Emissions 03-10-2024'* supplied in support of the application, to guide staff on the monitoring of emissions from processing plant and reporting requirements.

The proposals also include monitoring of CFCs every six months per CEN/Ts 13649 standard, and TVOCs every six months per EN 12619 standard by certified independent labs.

The maximum concentration of the primary component of the raw gas stream (pentane) is <0.5 % this is significantly below the Lower Explosive Limit (LEL) of pentane which is 1.5%. Nitrogen is used as an inert gas in key points of process where pentane values may be higher and will reduce oxygen levels to <8% to prevent fire and explosions.

Emission Point 2.
Following removal of Refrigerants and blowing agent the de-gassed polyurethane powder is passed to a briquetting press for compaction. This process is designed to:
(i) reduce volume to improve efficiency of logistics to a downstream facility;
(ii) reduce atmospheric dust;
(iii) prepare material for possible use as EfW for energy generation.
To control dust process air is passed through an air filtration system.

This meets the requirements of BAT 3, 8 and 29 of WTBREF.

Fugitive emissions to air:

The plant will be regularly monitored for diffuse emissions, following the guidelines illustrated in '*DOC 0023 Monitoring of Emissions*', supplied in support of this application. The Erdwich plant was chosen after a thorough review of available technology and has been widely used in WEEE recycling facilities across the UK, Europe, and the Far East.

The plant uses corrosion-resistant materials where appropriate and all processing takes place inside an enclosed building. Key components are housed in a containment area maintained at less than 8% oxygen to reduce fire and explosion risks and keep noise levels below 85 dB.

The plant has extraction systems in place to capture diffuse emissions, which are filtered through an Activated Carbon Filter to remove VFCs and TVOCs. Dampening of potential dust emissions is generally not needed inside the building but may be used around output chutes and containers or in yard areas if required.

GAP Alba has an experienced on-site maintenance team, with additional support from the Gateshead Recycling Plant and the OEM as needed. The site is regularly inspected, maintained, and cleaned, with daily and weekly reports. Leak detection for diffuse emissions is routine, and quarterly fugitive emissions testing is conducted by Element Glasgow Environmental Testing Laboratory, similar to the testing done at the existing Gateshead plant.

This meets the requirements of BAT 14 of WTBREF

Odour:

No odour issues are anticipated from the planned facility, but an Odour Management Plan is in place and was provided as '*DOC 0010 S-EMP-007 Odour Management Plan 2024 260924'* In support of the application.

This will be reviewed once the plant has become fully operational and as part of regulatory effort at the site.

This is in line with the requirements of BAT 12 of WTBREF

5.3 Emissions to Water

Point Source Emissions to Surface Water and Sewer:

There are no point source emissions to Sewer from the proposed activity.

Surface water:
The entire permitted area is covered with an impermeable concrete layer designed to direct surface water to surface drains. This water then passes through a Class 1 Full retention separator before being discharged into the Sustainable Urban Drainage System (SUDS) located outside the STU area.

The SUD system is operated by Binn Waste Management Limited, permit PPC/A/1138879, and drains to a local water course.

The discharge from the SUD system will be monitored monthly for the following parameters:

Suspended Solids measured after drying at 105°C: 60 mg/litre
Chemical oxygen demand (COD): 180 mg/litre
pH: Between 5 and 9
Hydrocarbon Oil:10mg/l
Trace metals: As:0.05 mg/l, Cd:0.05 mg/l, Cr:0.15 mg/l, Cu: 0.5 mg/l, Hg: 5.0 µg/l, Ni: 0.5 mg/l, Pb: 0.3 mg/l, Zn: 2.0 mg/l

The surface water drainage system has been designed meet the requirements of BAT 6, 7, 19 and 20 of WTBREF.

Point Source Emissions to Groundwater:

There are no point source emissions to groundwater from the site activities.

Fugitive Emissions to Water:

The entire site, both internally and externally, is covered by an impermeable concrete layer with sealed kerbing. This design ensures that all surface water is captured by a drainage system that leads to a Class 1 Full Retention Interceptor. After separation, the water is directed to an approved SUD system outside the permit boundary and thereafter to a nearby watercourse.

The incoming materials are water-resistant and are mostly stored under cover in the processing building. All liquids such as refrigerant oil and lubrication oils are stored under cover with appropriate secondary containment.

Outputs from the process are water-resistant but, where necessary, stored in water-repellent containers.

No process water is discharged; it will be circulated and condensed in a cooling tower.

No water is stored on site. Fire water is stored in a reservoir outside the permitted site. Binn has fire appliances and trained fire marshals to assist GAP Alba Fire Marshals if needed.

These measures meet the requirements of BAT 19 of WTBREF.

5.4 Noise

GAP ALBA Limited have prepared a noise management plan in support of the application which includes the following mitigation to minimise the potential for noise.

The following range of management control methods will be implemented at the site:

- Key processing plant is contained within its own noise attenuating enclosure and all processing equipment within an insulated building;
- All plant equipment will be regularly maintained to ensure that no item will produce excessive noise;
- Traffic movements from HGV's will take place during daytime operational hours 07:00 – 19:00.
- A speed limit of 5 mph will be in place onsite.
- Site staff will be made aware that they are working in the vicinity of noise sensitive receptors and avoid all unnecessary noise due to misuse of tools and equipment, and unnecessary shouting and radios. To further enhance this; staff will be trained to operate the equipment and plant without causing excess noise including measures such as not dropping waste from height;
- All doors and windows will be kept closed at all times, except when access is required to attenuate any sound generate within the site
- A 3.5m Closed board timber fence with a minimum density of 10kg/m^2 to be installed around the perimeter of the external shredding and sorting line.
- A 2m closed board timber fence with a minimum density of 10kg/m^2 should be installed around the perimeter of any external generator sets.

No annual quantitative noise monitoring is proposed, however qualitative monitoring of noise levels will be included as a factor to be considered by the site manager as part of daily work on site.

This is in line with the requirements of BAT 18 of WTBREF.

Noise or vibration nuisance is not anticipated at nearby sensitive receptors and as such BAT 17 of WTBREF is not applicable at this time. This will be reviewed once the plant has become fully operational and as part of regulatory effort at the site.

5.5 Resource Utilisation

Water use

The Erdwich Refrigerator Recycling plant is designed as a dry process. Water is only used within the process for:
(i) steam generation to regenerate carbon beds and removed adsorbed TVOC
(ii) condensation of recovered refrigerant gases and blowing agents.
System has been designed so that all water is recirculated, and only minimal water loss will be through evaporation from cooling tower.

This is in line with the requirements of BAT 19 (a) of WTBREF.

Energy use and generation

The proposed plant is designed minimise energy usage. The facility requires approx. 500 kW of power (with a simultaneous usage factor of 0.6). Binn Ecopark is linked to two wind turbines, each with a capacity of 2.35 MW. The plant is designed to use power from these turbines, ensuring that all its energy needs are met through renewable sources.

In the longer term it is planned to utilise some outputs from Fridge Recycling at an on-site EfW plant to minimise carbon footprint.

As part of permitting requirements the plant will be required to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues.

This is in line with the requirements of BAT 11 and BAT 23 of WTBREF.

Raw Materials Selection and Use

Water: The GAP Alba process is designed to recirculate water, with the only net usage being steam loss from the cooling tower.

Energy: As illustrated above the process will use energy exclusively from sustainable sources, such as wind and EfW (Energy from Waste) power plants.

Raw Materials: All raw materials are classified as waste. The process is designed to recover valuable resources while removing and preparing harmful components (e.g. VFC and POPs plastics) for destruction.

Equipment: The Erdwich Refrigerator recycling plant was selected based on practicality and energy efficiency to reduce environmental impact. Any further mechanical handling equipment will be selected based on the same principals

Monitoring: Water and electricity usage will be continuously measured and reported as per permit requirements.

This is in line with the requirements of BAT 11 of WTBREF.

5.6 Waste Management and Handling

Waste Minimisation

The raw materials used on site are already classified as waste. The aim of the process is to achieve maximum recycling rates and environmentally sound disposal of residues which cannot be recycled.
The operator aims is to use minimal packaging, and where possible, environmentally-friendly reusable packaging will be utilized

This is in line with the requirements of BAT 22 and 24 of WTBREF.

Waste Handling

The GAP Alba processing facility is designed to handle two specific waste streams: Waste Temperature Exchange Equipment (WTEE) and insulating panels containing foam that may include VFC or VHC. Both are considered WEEE (Waste Electrical and Electronic Equipment), solid, and unreactive. The waste streams are received separately and stored in distinct areas for processing. The site is permitted to hold up to a total 250 Tonnes of waste at any one time as a combination of processed and unprocessed waste. No breakdown of the limits for processed and unprocessed waste is included to allow GAP to the manage the throughput of the equipment to achieve maximum efficiency within the 250 Tonne limit. GAP Alba's parent company, GAP Group North East Limited, have utilised and operated the process proposed for the Binn Ecopark at their facility in Gateshead, Tyne and Wear, since 2019. They have excellent experience in managing the throughput to best effect and will utilise this at the Binn Ecopark site.

All staff will be inducted and trained prior to carrying out any waste handling duties and will use suitably designed equipment to prevent and mitigate spills. Spill procedures are in place with '*DOC 0047 Material handling Procedures 071024'* supplied in support of the application, and spill kits are available throughout the site.

All deliveries are pre-organised (primarily through uplift from HWRC) each uplift is organised and given a unique reference number prior to uplift. Transport contractors are aware and can identify the waste streams.

All incoming waste is inspected at the weighbridge following Waste Inspection Procedures '*DOC 0028 S-EWP-WEE 002 - Waste Inspections 03.10.24*' and '*DOC 0029 S-EWP-WEE 003 - Non - Permitted Wastes 03.10.24*'. Any non-permitted waste is handled according to procedure '*S-EWP-WEEE 003'* (supplied in support of the application). Wastes are visually checked upon arrival and unloading to ensure no unwanted materials are received.

The procedures supplied in support of the application satisfy the requirements of BAT 2, of the WTBREF.

As loads arrive, they are put either directly into the processing area or into pre-designated bays on impermeable surfaces.

If non-permitted wastes are found, they are quarantined according to procedure S-EWP-WEEE 003. All deliveries are pre-organized, and waste streams are identified with unique reference numbers. Transport contractors are informed about the waste types.

Following reception at site waste streams are further inspected to identify the number and type of items including how many appear to be degassed. Incoming waste is also be inspected for condensing dryers as these contain refrigerant gases/oils and must be recorded and treated in the same manner as conventional cooling equipment.

Refrigeration items are moved into the fridge plant reception area as soon as practical to prevent any further possible damage or de gassing, pending processing.

Before Stage 1 processing, all WTEE is inspected for internal contamination (such as organic waste), and components like door seals, cables, plugs, and glass shelves are removed and stored separately.

These proposals meet the requirements of BAT 2, 3, 4, 5 and 26 of WTBREF.

Waste Recovery or Disposal

All individual outputs from plant are stored in separate bays, as laid out on a site infrastructure plan, before being transferred to appropriately permitted downstream facilities.

External storage areas will be separated using fire resistant Legio blocks, and any potentially flammable wastes will be separated by at least one storage bay. Waste types stored in this manner include:
Ferrous metals, Non-ferrous metal, Plastics, Polyurethane powder/Briquettes, Refrigerant Gases and Blowing Agent, Refrigerant Oil, Glass, Rubber Door seals, Cables and Plugs, Organic Waste from fridges

GAP Alba has a Quality and Environmental Aspects procedure to assess and manage the environmental impact of its operations. Planned monitoring includes:

- Continuous visual checks of recyclates during processing.
- Quarterly analyses by an independent lab for:
- Refrigerant in degassed oil (limit: 0.9%)
- Blowing agent in treated foam (limit: 0.2%)
- Untreated foam in plastic (limit: 1.0%)
- Untreated foam in non-ferrous metal (limit: 0.5%)
- Untreated foam in ferrous metal (limit: 0.5%)

These proposals meet the requirements of BAT 2 of WTBREF.

5.7 Management of the site

Environmental Management System

GAP ALBAs internal management system has been designed in accordance with the requirements of ISO9001, ISO14001, and ISO45001. Accreditation is currently held by the parent company GAP Group North East Limited; the GAP ALBA site will be incorporated into this accreditation following site completion.

It is identified within GAP Group Environmental Policy, *'DOC 0031 POL - 001 Environmental Policy 29-09-23'* supplied in support of this application, and their ISO certification that they operator looks for opportunities for continual improvement in all aspects of Environmental Policy. Improvement on the site processes and energy efficiency will be reviewed annually with a target to achieve continual improvement on Kwh/tonne of waste processed. This will be demonstrated through the operators 'waste data returns' and 'resource efficiency' reports which will form part of permitting requirements.

This meets the requirements of BAT 1 and 23(b) of WTBREF.

Accidents and their Consequences

The GAP Alba site is located within Binn Ecopark, which hosts various waste management and energy generation activities.
GAP Alba's parent company, GAP Group North East Limited, have utilised and operated the process proposed for the Binn Ecopark at their facility in Gateshead, Tyne and Wear, since 2019 and received WEEELABEX Certification for its Refrigeration Recycling Processes in August 2021.

The Ecopark itself is in a remote rural area with a single access route The site has extensive CCTV coverage, and GAP Alba will have its own CCTV system covering both the internal processing area and external storage areas, including the weighbridge.

This satisfies the requirements of BAT 21(a) of the WTBREF.

To maximise the overall environmental performance, and to prevent emissions due to accidents and incidents, GAP ALBA have a strict inspection criterion for incoming waste (described above). The site also has documented 'accident and emergency preparedness' and 'accident management' plans in place with documents '*DOC 0025 - S - EP006 - Accident Incident & Emergency Preparedness Procedure v1.1 120824*' and '*DOC 0024 S- EMP-009 Accident Management Plan – 080924*' supplied in support of the application.

The supplied documentation satisfies the requirements of BAT 21(b) of the WTBREF.

Following reception at site waste streams are further inspected to identify the number and type of items including how many appear to be degassed. Incoming waste is also be inspected for condensing dryers as these contain refrigerant gases/oils and must be recorded and treated in the same manner as conventional cooling equipment.

Refrigeration items are moved into the fridge plant reception area as soon as practical to prevent any further possible damage or de gassing, pending processing.

The procedures supplied meets the requirements of BAT 26 of the WTBREF.

Fire and Deflagration Protection system

The processing plant is designed to be intrinsically safe with Nitrogen used to create an inert atmosphere in key areas of the process equipment to reduce risk of fire or explosion. Continuous oxygen monitoring is deployed to ensure that an inert atmosphere is maintained and plant shuts down automatically if the O_2 level exceeds 8.0%.

This satisfies the requirements of BAT 21(a) of the WTBREF.

Control of the system

The explosion suppression system is controlled by an electronic control unit that manages the HRD cylinders, pressure sensors and IR detectors. HRD (High Rate Discharge) detects an explosion in equipment at an early stage by means of highly sensitive sensors and suppresses it effectively by applying an explosive suppressant.

The multi-zone control unit provides explosion suppression system monitoring, relays the stored energy impulse to trigger the HRD cylinders, and on-line verification of the system status. The modular design enables selective (zoned) activation of the explosion suppression system (e.g. limited to an equipment unit where an explosion occurred). The whole system is monitored electronically with every fault is displayed and reported.

The Explosion suppression system can be switched off on site by means of a security switch, for example to allow performance of maintenance work.

With this concept the initial stages of a fire will be detected and extinguished minimising the possibility for an explosion. If there is the potential for an explosion after the pre-shredders, the process will be stopped, extinguishers deployed, and pressure reduced, so that only dust pipes or minor machine parts are damaged. The explosion will only occur inside the machines with no potential for explosion outside these areas.

Fire Detection

In case of a fire or explosion the filter elements can be destroyed and the fire/explosion or the incinerating product can potentially reach the clean gas area.

Detection using pressure detectors:
If an explosion occurs in any part of the system, the dynamic multi sensor will detect the rise in pressure and the entire explosion suppression system is activated within milliseconds. The developing Explosion is suppressed and isolated.

Slow pressure rises, occurring naturally during the process, do not lead to an actuation of the system.

A more detailed description of individual areas is included below:

Pre -Shredder
An IR-detection is installed below the pre-shredder, to identify any potential for fire (Sparks are not normally possible because of the slow moving shredders). This is used in combination with a fire extinguishing system (water spraying nozzles). Any detection of a fire will result in all machines and conveyors are stopping and activation of the extinguisher system with water spraying both above and below the equipment.

Hammer mill
The hammer mills contain an explosion suppression system with two 5l E-HRD suppressors in combination with an extinguishing isolation with 5l E-HRD suppressor on the suction pipe to reduce the pressure inside and prevent break through to the compensator outwards and flame transition towards the filter.

An additional EHRD 5l suppressor is included behind the magnetic drum, to prevent flame propagation through the discharge chute.

Detection of an event is via a dynamic pressure detector.

An isolation barrier will be placed at a distance between 5m to 8m from the equipment.

Aspiration filter 1
The filter is fitted with an explosion suppression system consisting of 2 x 20l EHRD suppressors combined with an explosion extinguishing system on both the raw and clean dust side. Each EHRD suppressor, prevents flame path back to the machines and the second filter.

Detection is via a dynamic pressure detector and IR-Detector.

An isolation barrier will be placed at a distance between 2m to 6m from the equipment.

Polyurethane Silo
An IR-detection is installed on top of the silo to identify a potential fire. This is used in combination with a fire extinguishing system (water spraying nozzles).

On identification of a potential fire all machines and conveyors are stopped, and the fire is extinguished from top.

During a developing explosion the explosion pressure spreads out at approx. the speed of sound. Pressure, reaching the two membranes of the dynamic pressure detector is converted into an electric signal via a capacitive measuring bridge.

If both measuring cells register an explosion-like pressure rise, all further protection devices are informed. An additional safety characteristic is that measurements from both measuring cells are constantly compared to each other, results not within the defined tolerance limits lead to a fault signal.

The fire/deflagration system has been designed in line with the requirements of the ATEX regulations which applies to equipment and protective systems intended for use in potentially explosive atmospheres and meets the requirements of BAT 27 of the WTBREF.

Closure

An updated site closure plan, DOC 0008 GAP Alba Site Closure Plan, was supplied in support of the application, the plan satisfies the regulatory requirements associated with site closure.

5.8 Site Condition report

A site condition report was included with the application. Additional testing is needed to check for contamination on the site, based on guidelines from SEPA's contaminated land team.

This variation to the permit requires the operator to create a plan for soil and groundwater testing, following SEPA's suggested requirements. Sampling and testing must be done within the first year of the new plant's operation, and the results must be reported to SEPA.

5.9 Monitoring

Air

The air emissions from the Stationary Technical Unit have been revised in line with the proposals outlined within this application for variation. Full details of the ELVs and their derivation are included within Section 9 of this documentation but in general the operator will be required to monitor for:

Dust, Total Volatile Organic Compounds, and Volatile (hydro)fluorocarbon, with monitoring taking place every six months in line with Best Available Techniques.

ODS loss will be monitored using continuous indicative monitoring with requirements included to halt the process should there be a breach of the ELVs contained within the permit.

Water

There is no direct discharge from the Stationary Technical Unit into the water. The site's external areas are paved with concrete, designed to drain into a collection system that eventually releases water to the environment through a SUDS pond.

The SUD system is operated by Binn Waste Management Limited, permit PPC/A/1138879, and drains to a local water course.

The discharge from the SUD system will be monitored monthly for the following parameters:

Suspended Solids measured after drying at 105°C: 60 mg/litre
Chemical oxygen demand (COD): 180 mg/litre
pH: Between 5 and 9
Hydrocarbon Oil:10mg/l
Trace metals: As:0.05 mg/l, Cd:0.05 mg/l, Cr:0.15 mg/l, Cu: 0.5 mg/l, Hg: 5.0 µg/l, Ni: 0.5 mg/l, Pb: 0.3 mg/l, Zn: 2.0 mg/l

The surface water drainage system has been designed meet the requirements of BAT 6, 7, 19 and 20 of WTBREF.

Soil and Groundwater

The soil and groundwater monitoring proposals have been updated in line with the guidance provided by SEPAs Contaminated Land team. The variation requires that the operator submit proposals for monitoring of soil/groundwater to SEPA for review prior to the monitoring taking place. Conditions are also included to require the first round of soil/groundwater monitoring to take place before the end of 2025.

Waste

Waste throughput on site will continue to be monitored through the regular data returns required within the permit at condition 2.7.

5.10 Consideration of BAT and compliance with BAT-Cs if appropriate

Where BAT has been considered in assessment of the previous sections of this assessment a reference to the relevant BAT condition has been included at that point.

6 Other Legislation Considered		
Nature Conservation (Scotland) Act 2004 & Conservation (Natural Habitats &c.) Regulations 1994		
Is there any possibility that the proposal will have any impact on site designated under the above legislation? If yes, provide information on the action and justification below:		**No**
Screening distance(s) used	5km	
Is there any other legislation that was considered during determination of the permit (for example installations that may be impacted by the requirements of legislation involving Animal By Products, Food Standards, Waste, WEEE regulations etc). If yes, provide information on the legislation, action and justification below:		**No**
Officer	[redacted]	

7 Environmental Impact Assessment and COMAH	
How has any relevant information obtained or conclusion arrived at pursuant to Articles 5, 6 and 7 of Council Directive 85/337/EEC on the assessment of the effects certain public and private projects on the environment been taken into account?	
Articles 5, 6 and 7 of Council Directive 85/337/EEC do not apply to this application.	
How has any information contained within a safety report within the meaning of Regulation 7 (safety report) of the Control of Major Accident Hazards Regulations 1999 been taken into account?	
The site is not above the CoMAH threshold, so Reg 7 does not apply	
Officer:	[redacted]

8 Details of the permit	
Do you propose placing any non standard conditions in the Permit?	**No**
Do you propose making changes to existing text, tables or diagrams within the permit?	**Yes**

Outline the changes required and provide justification below:

Proposed Condition Number:	**Proposed Change:**	**Justification:**
1.1.3	Condition 1.1.3 has been deleted and replaced by a new condition 1.1.3.	The changes reflect the change in activities on site resulting from this variation.
1.1.4	Condition 1.1.4 has been deleted and replaced by a new condition 1.1.4.	The description of the Stationary Technical Unit has been updated to describe the new activities proposed on site.
1.1.5	Condition 1.1.5 has been deleted and replaced by a new condition 1.1.5.	The description of the Directly Associated Activities has been updated to describe the new activities proposed on site.
1.1.6	Condition 1.1.6 has been deleted and replaced by a new condition 1.1.6.	The descriptions within the condition have been changed to describe which activities are under the direct control of the operator.

1.2	Condition 1.2 Site Plan, has been deleted and replaced by a new condition 1.2 Site Plan.	The site plan has been replaced to accurately reflect the updated layout of the site.
1.3	Condition 1.3 Process Description, has been deleted and replaced by a new Condition 1.3. including Process Layout and Emissions Points	The new process diagrams show the new processing streams on site because of the changes to on site activities. An additional diagram shows the layout of the stationary technical unit on site and the locations of the emissions points to air from the process.
Table 2.1	Table 2.1 Reporting and Notification Requirements, has been deleted and replaced by a new 2.1.	The table has been replaced by a new table to illustrate the reporting requirements for the new activities on site.
Table 2.2	Table 2.2 Resource Utilisation Data Recording, has been deleted and replaced by a new Table 2.2.	The table has been replaced by a new table to illustrate the reporting requirements for resource utilisation for the new activities on site.
2.12 to 2.15	After Condition 2.11, Conditions 2.12, 2.13, 2.14, and 2.15, have been added	The additional conditions introduce standards for Staffing and Management, the requirement for a Management Plan, the need for appropriate weighing facilities on site, and clarification of the total amount of waste allowable on site at any time. These conditions are as used in permits with similar activities taking place (PPC/A/1035205).
4.7 and Tables 4.1, to 4.4,	Condition 4.7 Air Emission Conditions has been deleted and replaced by a new Condition 4.7. Tables 4.1 to 4.4 have also been replaced with additional tables required to describe Air emissions monitoring requirements.	The Air Emission Conditions introduced by this variation describe the Emission Limit Values and Monitoring Requirements and Standards associated with the new process taking place on the site. These conditions are as used in permits with similar activities taking place with some descriptive changes to reflect operations on this site.
4.8 and Tables 4.5 and 4.6	Condition 4.8 Protection of Soil and Groundwater has been deleted and replaced by a new Condition 4.8. Tables 4.5 and 4.6 have also been added to describe the monitoring requirements for soil and groundwater.	The Soil/Groundwater Conditions introduced by this variation describe the and Monitoring Requirements and Standards required to reflect the new process taking place on the site. These conditions are as used in permits with similar activities taking place (PPC/A/1035205) with some descriptive changes to reflect operations on this site.
4.9	Condition 4.9 Water Environment Discharge Conditions, has been deleted and replaced by a new Condition 4.9 and associated tables	The Water Environment Discharge Conditions introduced by this variation describe the Emission Limit Values and Monitoring Requirements and Standards associated with the new process taking place on the site.
4.10	After Condition 4.9 Condition 4.10 has been added	The condition indicates that refuelling of vehicles (forklifts) can only take place within a designated area of the site.
Schedule 5	Schedule 5 Waste Types, Quantities, and Storage, has been deleted and replaced by a new Schedule 5	The schedule has been replaced in its entirety due to the substantial changes to the onsite activity. The new schedule contains conditions which are currently in use at other sites (PPC/A/1035205) which currently carry out the reprocessing of refrigeration equipment and are representative of best

		practice for the activities. It includes conditions to define the maximum storage time of materials on site along with the types of waste which can be accepted and processed on site.
Schedule 6	Schedule 6, Process Controls has been deleted and replaced by a new Schedule 6	The schedule has been replaced in its entirety due to the substantial changes to the on site activity. The new schedule contains conditions which are currently in use at other sites (PPC/A/1035205) which currently carry out the reprocessing of refrigeration equipment and are representative of best practice for treatment of Refrigeration Equipment (WEEE and non-WEEE containing ODS). It includes conditions to define the operation of the process and abatement systems and defines standards for the residual materials produced by the recycling process
Schedule 7	Schedule 7 Interpretation of Terms has been deleted and replaced by a new Schedule 7	The Interpretation of Terms has been replaced by a new and updated set of terms relevant to the processes that will be carried out on site because of this variation
Officer:	CO	

9 Emission Limit Values or Equivalent Technical Parameters/Measures

Are you are dealing with either a permit application, or a permit variation which would involve a review of existing ELVs or equivalent technical parameters?	**Yes**

Outline the changes required and provide justification below:

The following ELVs have been added to the permit for emissions to air:

Dust - 5 mg/m^3
The limits for Dust are as defined in Best Available Techniques (BAT) Reference Document for Waste Treatment, BAT 25 Table 6.3.

TVOC -15 mg/m^3
VFC -10 mg/m^3

The limits for TVOC and VFC are as defined in Best Available Techniques (BAT) Reference Document for Waste Treatment, BAT 29 Table 6.4.

ODS mass loss (<100 fridges /hour) - 5 g/hr CFC R11 (as hourly average)
ODS mass loss (>100 fridges /hour) - 10 g/hr CFC R11 (as hourly average)

The values for ODS mass loss are as defined in SEPAs 'Guidance on the Recovery and Disposal of Controlled Substances Contained in Refrigerators and Freezers' Section 4.2 Figure 1 Table note 5.

The surface water drainage system has been designed meet the requirements of BAT 6, 7, 19 and 20 of WTBREF.

From the guidance detailed above the values used for ELVs within the proposed variation are representative of best practice.

Officer:	[redacted]

10 Peer Review

Has the determination and draft permit been Peer Reviewed?	**Yes**

Comments made:

See comments included in the decision doc.

Officer:	Spec II

11 Final Determination

Issue a Variation to the Permit – Based on the information available at the time of the determination SEPA is satisfied that:

- The applicant will be the person who will have control over the operation of the installation/mobile plant,
- The applicant will ensure that the installation/mobile plant is operated to comply with the conditions of the Permit,
- The applicant is a fit and proper person (specified waste management activities only),
- Planning permission for the activity is in force (specified waste management activities only),
- That the operator is able to use all appropriate preventative measures against pollution, in particular through the application of best available techniques.
- That no significant pollution should be caused.

Guidance documents

The Pollution Prevention and Control (Scotland) Regulations 2012

Best Available Techniques (BAT) Reference Document for Waste Treatment Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) 2018

SEPA Guidance Document, Guidance on the Recovery and Disposal of Controlled Substances Contained in Refrigerators and Freezers, April 2002

SEPA Guidance Document, Classification of WEEE – Hazardous Substances and Persistent Organic Pollutants (POPs), June 2022

The Conservation (Natural Habitats, &c.) Regulations 1994

SEPA Nature Conservation Procedure for Environmental Licensing NCP-P-01