

PRESENTATION AND DECLARATION SHEET - required for the issuance of *the ENVIRONMENTAL AUTHORIZATION*

I. General data

- Name of the objective:

Objective location: Gouverneur NY, 606 County Rte 11. 13642

Beneficiary: Pfané Gouverneur LLC

Activity profile: **RECYCLE AND REFINE METALS AND NON METALLICS FROM ELECTRONIC COMPONENTS**

CAEN 2361 – Manufacture of concrete products for construction

CAEN 3831 - Dismantling (disassembly) of machines and equipment taken out of use for the recovery of materials.

CAEN 3832 - Recovery of recyclable materials.

CAEN 2444 – Copper metallurgy

CAEN 4677 – Wholesale of waste and scrap

- **Unique code:** , registered at the Trade Register with no.

- **Phone:**

Form of ownership: private ownership – fully foreign social capital.

- **Working hours** (hours/day, days/week, days/year)
10 hours/day, 4 days a week.

II. Activity-specific data

The activity carried out is the *treatment, recycling and valorization* of printed/integrated circuit boards, which are component parts of various waste electrical and electronic devices.

A) Electrical and electronic waste treatment flow

II.1. The purchase

PFANE GOUVERNEUR LLC will **treat, recycle and recover** the following categories of waste:

- printed circuits;
- motherboards for computers;
- integrated circuit boards for computer peripheral components;
- PCI expansion cards;
- Central Processing units - Processors;
- RAM type memories and other integrated circuits from a varied range of various household electronics;
- PC-type connecting and connecting cables
- connector type terminations for audio type cables.

These elements will be purchased from electrical/electronics manufacturers, authorized WEEE collectors, recycling units, storage and disassembly of spare parts as well as from car dismantlers and from other representatives in The USA, and from private individuals willing to separate these own elements for their *recovery, recycling and disposal* .

The PFANE GOUVERNEUR LLC company also acquires electrical and electronic equipment waste, scrapped electrical and electronic equipment, in order to recover: motherboards, printed circuit boards, PCI expansion cards, Central Processing Units - Processors, type memories Ram and other integrated circuits, connecting and connecting cables of PC type, connector type terminations for audio type cables.

Classification of materials processed by PFANE GOUVERNEUR LLC:

- a) GC020 Basel- classified WEEE - Integrated electronic circuits from waste (GREEN WASTE)
 - b) "End of Life" electronics that can be considered still in working condition, but that have lost their retail value.
 - c) Expired/damaged materials as well as materials rejected during assembly or assembly, which can be considered in working condition, but cannot be used in production due to quality control.

II. 2. Delivery

The delivery of all categories of electrical and electronic waste is made at the company's workplace in the town of Gouverneur, 606 County Rte 11, New York State, 13642 where the company's treatment, recycling and recovery point is, and the transport of materials will be carried out by authorized companies, authorized collectors or with our own means, to our unit.

PFANE GOUVERNEUR LLC will not accept/purchase materials that have been used in the equipment of medical equipment or X-ray equipment, at the predetermined delivery point.

II. 3. SORTING

The waste sorting will be done manually and mechanized, by visual inspection, comparing the purchased waste with some color photos of the different waste divided into categories or with some exposed integrated circuit board models.

II.4. STORAGE

The storage of all materials will be done inside as well as in a loft attached to the work hall or on the concrete floor.

They are kept in plastic / Carton containers with a capacity of 30 l, 100 l, 300 l, 20 kg crates and 500 kg-1000 kg raffia bags, 1000 L IBC containers, 60 l, and 40 l plastic drums or loose

The materials are kept in a clean and dry environment.

II. 5 Processing/treatment

The processing is done both manually and industrially, the two are combined in a *complete treatment process* .

- a) Manual processing consists of selecting electronic boards and this process results in printed circuit boards that have a higher content of base metals than the rest of the boards.

The plates that have a higher content of precious metals are stored in different containers, and the rest of the plates are to enter the wet mechanical processing phase, after their depopulation of different components.

- b) After the selection of the boards, there is the stage of depopulation of the boards of capacitors, processors, diodes, etc. with the help of a pneumatic gun or the electric machine,
- c) For the recovery of various precious metals from the plates that have a higher content of such metals, a chemical recovery plant is used - Eco-Goldex E-scrap.
 - c.1) The plates are inserted into the first tub which is a component part of this installation.
The first and second tubs contain the Eco-GoldEx E reagent which is used as an aid in the chemical recovery of various precious metals.
The plates are then rinsed in tank 3 and then unloaded in tank 4, and from here follows the normal mechanical-wet treatment process of textolite base plates.
 - c.2) The electrolysis process follows, to retain the gold on the cathode.

The electrolysis solution is filtered and reused, and when the concentration of the Eco-GoldEx reagent drops, it is added, according to the recipe, to the water.

The gold obtained from the cathode is melted on demand or sold as powder to professional economic agents.

d) **Wet mechanical treatment of electronic boards/ boards with integrated circuits :**

Industrial processing is done with the help of the following machines and equipment:

- GDS multifunctional chopper
- Shredder LD 800;
- Greifer loader
- Hammer mill;
- Vibrating tables;
- eddy current separator
 - magnetic separator

d.1) **Description of the treatment process**

The electric and/or electronic boards, in a first stage of reducing their size, with the help of a Shredder LD 800 and a multifunctional shredder GDS, in which they are ground.

Afterwards, they are placed on a conveyor belt to extract magnetics they then enter the hammer mill, in a water-based grinding process, until they are reduced to a powder level.

From here the ground material reaches the vibrating table where the wires and the gold powder will be separated, separate the copper powder and the fiber textolite using the process of separation by gravity and washing with water, in **four separate plastic containers** with a volume of ~ around 50 liters.

The gold concentrate powder/wires are separated in **container 1** as is the higher density material. Mixed metals are sent to containers 2 and 3 and fiber textolite is sent to container 4.

d.2) **Materials collected following the treatment of electrical and electronic waste:**

a. Gold concentrated dust , which is sent to Refining through EcoGoldex extraction line and is sold to specialized and authorized collectors, jewellers / buyers

b. The fraction of copper to be sold to collectors/recyclers and a part is used to obtain copper powder. Copper, which has a very low content of other metals, is collected:

- in plastic containers of different capacities: 30, 100, 300 l;
- in 20 kg boxes;
- plastic barrels of different capacities: 20, 30, 60 l;
- 1000 l IBC type containers,

and later it is packed in raffia bags and PE bags of different sizes and stored on a concrete platform, until considerable quantities are collected and sent to different partners for recycling/final recovery.

- Portions of the copper powder are further refined in-house using the EcoCell process to generate 99s pure copper for sale to industrial buyers.

c. The Fiber textolite is dried and recovered internally, being used in the production process of artisan tiles and blocks from fiber textolite and cement or sold to contractors.

After collection, the fiber textolite is packed in 1000 l raffia bags and stored on a concrete platform inside the warehouse until it is used in the artisanal tile production process or handed over to the workers.

B) Recycling and valorization of electrical and electronic waste purchased, respectively the production flow of artisan tiles made of fiber textolite and cement

Taking into account the fact that Fiber Textolite is a hard, resistant material, but at the same time it also has a certain flexibility, having many characteristics with glass fiber, the management of the company decided that

the process of **recycling and valorization** of base plates should become one that is approaching **100% recycling**, due to the fact that the largest amount of waste resulting from the baseboard treatment process is Fiber Textolite waste.

Therefore, after long studies and analyses, they decided to produce **artisanal cement and Fiber Textolite tiles**.

III. 1 Drying of Fiber Textolite

Considering the fact that the Fiber Textolite, following the treatment process, is wet, it is stored in bags and then on the concrete platform, so that its degree of humidity decreases and it is left to dry.

III. 2 Supply of raw materials

The cement we need is purchased from construction material suppliers, and the water we use in the process is used from the filtered water supply available in the closed loop water system.

III. 3 The production process of cement and Fiber Textolite tiles

Being at the beginning of the road with the production part of artisan concrete and textolite tiles, I decided that the process would be a manual one at the beginning, therefore:

- mix in a concrete mixer 30-40% cement with 67-57% Fiber Textolite and 3% water from the network;
- the mixing process of the component materials lasts between 3 and 5 minutes;
- later the mixture is poured into different forms, depending on the requirements and the orders we have
- we let the mixture settle well in the molds for around 30 minutes, and then we place the artisanal tiles on wooden planks, which are placed on wooden pallets
- after the tiles harden, they are ready for sale
- this process is repeated depending on the quantity of tiles we want to produce or depending on orders
- through the manual process of producing artisanal tiles we have the possibility to use 2 tons of Fiber Textolite per hour and to produce approx. 1000 tiles in an hour, approx. 7500-8000 artisanal tiles in a day, respectively 172500 in a month.

III. 4 Delivery of finished products

Most of the time, the final customers come for the products they ordered, with their own means of transport and are loaded in their means of transport.

The products will be sold in bulk, to final customers.

C) Copper powder production flow

Copper powder has a diverse applicability, due to the fact that copper is one of the best electrical and thermal conductors.

Taking this aspect into account and for, also in the same vein, the recycling process of motherboards from electrical and electronic waste to be one that approaches a 100% recycling of them, PFANE GOUVERNEUR LLC decided to produce the copper powder, to sell to different customers, considering the degree of applicability of this powder.

IV.1 The process of obtaining the copper powder

The process of obtaining copper powder is very simple.

The **copper fractions** resulting from the mechanical-wet treatment of the Fiber Textolite plates that have a different metal content are used.

These copper fractions are sifted through different sieves, having very small mesh sizes, and through this simple procedure, copper powder with a concentration between 98.9 and 99.99% is obtained.

We determine the degree of purity with the help of an X-ray machine, through the company SC SECAUR LABS SRL, with which the company PFANE GOUVERNEUR LLC has a service contract.

Depending on the orders, it is possible to obtain up to 2400 kg of copper powder per month.

IV.2 Packaging and delivery

The copper powder is packed in plastic bags of 100 g up to 2.5 kg and delivered to the final customers, by post, in paper envelopes.

B) Equipment

Specific equipment:

- buildings:

Hall building with annexes located in Zăuan, Com. IP, No. 277/B, with a usable area of 250 sqm, divided into 2 distinct spaces as follows:

1. Space for dismantling/mechanical treatment of base plates with an area of 230 square meters;
2. Space for gold extraction installation from base plates 20 square meters;
3. Storage space for waste electronics bagged boxed covered and cemented 1450 square meters.
- 4 Space for EcoCell copper refinement system 5 tons per 24hour solar 160 square meters inside Storage area above floor level.

- machinery and installations:

- 1 . Manual hydraulic pallet truck - 1 pc.;
2. Forklift – 1 pc.;
3. Shredder type LD800-1pc;
4. Mill with hammers-1 pc;
5. Vibrating tables-2 pcs;
6. Induction furnace for melting - 1 pc.;
7. Current generator on liquid fuel (diesel) – 1 pc
8. Gold recovery plant - Eco-Goldex E-scrap - 1 pc
9. Concrete mixer - 1 pc
10. Molds for artisan tiles - 250 pcs
11. Sieve – 3 pcs
12. 5x EcoCell 1000 copper granule refinement systems and roof top solar mount for the sme

- machines : grinder , drilling machine, welder, hand tools

- appliances:

- 1 . Heating devices duramaxx 2000w, for heating the hall - 4 pcs;
- 2 . Welding machine with inverter 1gbt 140A – 2 pcs;
- 3 . Airmaster 850 air compressor – 1 pc;
- 4 . PH Digital meter – 1 pc;
5. Electronic scales – 6 pcs;

- means of transport used in the activity:

forklift;

C) Material balance

Raw materials, auxiliaries, obtained products, fuels and packaging that will be used - method of packaging, storage and related quantities:

C.1) Electrical and electronic waste, entered into the treatment, recycling and recovery process, with a capacity of up to 600 To/month, respectively up to 7200 tons/year

- Scrap electrical and electronic equipment - 16 02 14, ~ 200 tons/month
- Components dismantled from scrap equipment - 16 02 16, ~ 500 tonnes/month
- Integrated circuit electronic boards and scrap electrical and electronic equipment - 20 01 36, ~ 500 tons/month
- Plastic with metal inserts (frames of electronic boards) - 20 01 39, ~ 200 tons/month;

Eco-GoldEx reagent – variable quantities, in 25 kg raffia bags.

C. 2) Products obtained:

- Gold powder, which is sent to melting and is sold to specialized collectors - approx. 80 g/month;
- Copper fractions, between 40 and 200 tons/month;
- Fiber Textolite is sold to collectors/recyclers and used internally, in the production of artisanal tiles, between 260 and 360 tons/month;
- Waste plastic materials are sold to collectors/recyclers, on average, approximately 2 tons/month;
- Ferrous metals are sold to collectors/recyclers, on average, about 1 tons/month;
- Copper powder is used at various economic agents, up to 24000 kg per month
- Non-ferrous metal waste (Al, Cu, Fe) is sold to collectors/recyclers, on average, about 500 kg/month
- Copper anode is used at industrial levels and sold to various economic agents, about 5 to 80t per month
- Cement and textolite tiles, variable quantities, sold to individuals and economic agents.

The obtained products are sent according to their specifics, in different packaging.

The gold powder is delivered in small plastic/metal containers, and most of the time it is delivered personally, so that the container in which it is delivered is reused every time, considering the fact that the delivery is it does at different periods of 5.6 months.

The copper fractions are packed in raffia bags of 80-100 kg, stored on a concrete platform, and after considerable quantities are collected, they are sent to the final customers, who until now have been from outside the country.

Fiber Textolite is packed in 1000 kg raffia bags and is stored on a concrete platform until it is handed over to collectors/recyclers or reused internally for the production of **artisanal tiles** .

The copper powder is packed in bags of 100 g up to 2.5 kg and stored in a plastic crate, until the requested quantity is packed, and then it is shipped to the final customers.

Cement and textolite tiles are sold in bulk, to individuals and various economic agents.

Fuels : - **the vehicle** is refueled at fuel stations

. - **for the heating of the plant:** recycled oil fuel (with potential for hydrogen) is used, as well as renewable electric energy sources

D) Utilities:

Water supply:

The source of water supply is the local domestic water distribution network, for current household needs. For the wet treatment of electrical and electronic waste, rain water, ground water ND waste water is collected in wells and replenishes evaporated water in the close loop water supply.

Electricity :

- is provided by the National Grid network.

The waste water resulting from the sanitary septic system is collected from time to time by sanitation contractors.

The heating of the space is done with a forced air oil heater, there is a technical room set up for this purpose in an area of 6 square meters, where the heater with a capacity of 25 Kw is located, and the dispersion of the smoke is carried out by means of the chimney having a diameter of 20 cm and the height of $H=12$ m

III. Sources of pollutants and protection of environmental factors

1. Water quality protection

a) **The waste water resulting** from the sanitary septic system and toilets is collected in a drainable basin of **1.5 cubic meters**, which is periodically emptied by an authorized company, with which the company has a drainage contract.

b) **The technological waste water** resulting from the mechanical treatment process of electrical and electronic waste is collected in a drainable concrete basin and recirculated, with a volume of **9.6 cubic meters**.

These waters are continually recycled through ongoing solids filtration system on-site, they are never dispersed otherwise.

2. Protection of the atmosphere

The source of air pollution is the thermal furnace system running on recycled oil.

a) For the thermal plant, the resulting emissions are evacuated through a chimney with $H=12$ m and a diameter of 20 cm

Due to the height of the chimney from the heating plant, these emissions disperse very quickly.

3. Protection against noise and vibrations

The noise level falls within the provisions of STAS 10009/1988 and MS Order No. 119 of 2014.

There are no special devices for protection against noise and vibrations, as they are not necessary.

4. Soil and subsoil protection

The activity takes place in closed spaces, and the floor is made of concrete, to avoid accidental spills on the ground. There are containers and spaces designed for the selective collection and storage of waste.

5. Protection against radiation

The activity that will be carried out within the framework of the investment objective will not use radioactive substances and consequently the level of natural radioactivity will not change.

6. Protection of the forest

Pfane holds title in forest land for conservation purposes on the site of each property

7. Protection of ecosystems, biodiversity and nature protection

Pfane holds title in forest land for conservation purposes on the site of each property

8. Protection of the landscape and areas of traditional interest

Pfane holds title in forest land for conservation purposes on the site of each property

9. Waste management

9.1 Waste of electrical and electronic equipment purchased :

- scrap electrical and electronic equipment - 16 02 14 , ~ 200 tons/month, container, work hall
- components dismantled from scrap equipment - 16 02 16, ~ 500 tons/month, container, work hall
- integrated circuit electronic boards and scrap electrical and electronic equipment - 20 01 36, ~ 50 tons/month, container, work hall
- plastic with metal inserts (frames of electronic boards) - 20 01 39, ~ 50 tons/month, container, work hall

9.2 Treated, recycled and recovered waste

- scrap electrical and electronic equipment - 16 02 14 , ~ 200 tons/month, container, work hall
- components dismantled from scrap equipment - 16 02 16, ~ 500 tons/month, container, work hall
- integrated circuit electronic boards and scrap electrical and electronic equipment - 20 01 36, ~ 50 tons/month, container, work hall
- plastic with metal inserts (frames of electronic boards) - 20 01 39, ~ 50 tons/month, container, work hall

9.3 Waste generated

- household waste, code 20 03 01, approx. 6 m³/year, container provided by the sanitation company;
- fiber waste, Fiber Textolite, code 19 12 04, approx. 300 t/month, 1000 l raffia bags, on a concrete platform;
- waste plastic materials, code 07 02 13, approx. 80 t/month raffia bags of 1000 l, on a concrete platform;
- ferrous metals, code 16 01 17, approx. 2 tons/month, in metal containers on the concrete platform;
- plastic material, code 16 01 19, approx. 2 tons/month, in metal containers on the concrete platform;
- fractions of copper (dust and suspensions of non-ferrous metals) Cu, code 16 01 18, approx. 150 tons/month, raffia bags of 80,100 kg or different plastic containers of different sizes, in the hall, on a concrete platform.
- non-ferrous metal waste (Al, Cu), code 16 01 18, approx. 500 kg/month, plastic container, work hall
- copper powder, code 16 01 18, plastic bags of 100 g, are stored in plastic crates, up to 2400 kg per month;

9.4 Collected waste

- it's not necessary

9.5 Traded waste

- fiber waste, Fiber Textolite, code 19 12 04, approx. 70 t/month, 1000 l raffia bags, on a concrete platform;
- waste plastic materials, code 07 02 13, approx. 80 t/month raffia bags of 1000 l, on a concrete platform;
- ferrous metals, code 16 01 17, approx. 2 tons/month, in metal containers on the concrete platform;
- plastic material, code 16 01 19, approx. 2 tons/month, in metal containers on the concrete platform;
- copper fractions (dust and suspensions of Cu non-ferrous metals), code 16 01 18, approx. 130 tons/month, raffia bags of 80,100 kg or different plastic containers of different sizes, in the hall, on a concrete platform.
- copper powder, code 16 01 18, plastic bags of 100 g, are stored in plastic crates, up to 2400 kg per month;
- non-ferrous metal waste (Al, Cu), code 16 01 18, approx. 500 kg/month, plastic container, work hall

Household waste is collected by the sanitation company with which PFANE GOUVERNEUR LLC has concluded a service contract.

Fiber waste - Fiber Textolite, plastic materials, ferrous metals, copper fractions, non-ferrous metal waste, ferrous filings and shavings, copper powder - are sold to different companies that collect and/or

recycle/use such waste and raw materials.

10. Management of toxic and dangerous substances

Does not apply.

10.1 Management of non hazardous substances

The EcoGoldex reagent – variable quantities, is stored in the original packaging, on a concrete platform, in closed stores

Food grade vinegar - Stored in plastic containers of various sizes 30, 100, 1000 liter

Home Grade Hydrogen Peroxide - Stored in plastic containers of various sizes 30, 100, 1000 liter

11. Packaging management

Packaging used:

- plastic containers of different capacities: 30, 100, 300 l;
- 20 kg plastic boxes;
- plastic barrels of different capacities: 20, 30, 60 l;
- 1000 l IBC type containers,
- 1000 kg raffia bags
- PE bags
- plastic bags of 100 g up to 2.5 kg.

A part of the packaging (crates, containers and plastic barrels, 1000 l IBC type containers) is reused until the end of the life cycle, and afterwards they are handed over to authorized recyclers/eliminators.

IV. PROVISIONS FOR ENVIRONMENTAL MONITORING.

The beneficiary will draw up the monthly waste management situation and send it, upon request, to State and Local Authorities as requested by law, privacy laws disallow this information being passed to unauthorized parties or organizations.

- Area layout plan ;
- Situation plan
- Registration certificate;
- Finding certificate;
- Drainage contract
- Sanitation contract