October 30, 2017

Mr. Patrick Beauchesne
Deputy Minister
JBNQA Director
Ministry of Sustainable Development, Environment and the Fight against Climate Change
675, boulevard René-Levesque Est, 30th Floor
Québec (Québec) J1R 5V7

Ref. : 3214-23-005

Dear Mr. Director,

Subject: Wood-pellets Production Plant Project

We would hereby like to inform you that we intend to restart our wood-pellets production plant establishment project on the Barrette-Chapais Ltd sawmill site.

Said project was presented in 2014-15 as then made possible through a partnership between the Rentech Inc. and Barrette-Chapais Ltd. corporations. However, some time ago, upon Rentech Inc. withdrawing from the project, Barrette-Chapais Ltd. had elected to put an end both to this partnership and the project. Barrette-Chapais Ltd has now opted to try and revive this project, by attempting to complete it single-handedly.

The revised project is essentially identical with the project as initially devised, the main difference residing in a reduction of the projected plant's wood-pellets production capacity, from 300,000 to 210,000 tons only. The projected plant will source the requisite raw materials exclusively from byproducts of the sawmill. Such an elimination of the need to source the requisite materials from other sites or suppliers will substantially reduce, if not outright prevent, the usual emissions generated by the transport, unloading and storing of ligneous material.

Shipping wood-pellets from the Barrette-Chapais Ltd. site will thus allow us to forego the need to ship-out wood chips and shavings, as was previously done, thereby cutting by two thirds the number of trucks required for transport. As a result, the environmental footprint stemming from or related to transport will be significantly decreased.

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It is our understanding that, before work was interrupted, this project was at the review process stage. Consequently, allow us to provide you with the following documents, so as to allow your review of this project:

- Revised impact study;
- Revised answer to the questions put forth by the Committee in February 2015;
- Detailed account of our consultation with the community.

Furthermore, we shall provide you, as soon as possible, with information as to atmospheric monitoring and modelling.

We remain at your disposal to answer any questions or provide you with any additional information you may require as to this project or the documents mentioned above.

Yours truly,

The president,

Benoit Barrette

Encl. 3

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Impact Study

Answers to questions

Directive 3214-23-005

Presented to the Review Committee (COMEX)

Minister of Sustainable Development, Environment and the Fight against Climate Change (MDDELCC)

By Barrette-Chapais Ltée.

Prepared By

Barrette-Chapais Ltée

October 2017

Contents

Introduction

Barrette-Chapais Ltée. is pleased to present this document to the Advisory Committee for the environment of the James Bay in connection with its project of valorization of the wood resource in Northern Quebec, a new model of fiber usage for Quebec Forest industry.

In the year 2016, Barrette-Chapais Ltée and Rentech Inc. decided to put an end to their partnership for the construction of a wood pellet plant. In the months that followed Barrette - Chapais Ltée has decided to continue the project alone. After a few months of additional studies, Barrette-Chapais Ltée wishes to proceed with the construction of a wood pellet plant on the sawmill site. This plant will have a capacity of 210 000 tons annually.

This project remains virtually the same as submitted by Rentech Inc. but smaller which will reduces its impacts. In order to proceed as quickly and efficiently as possible, we want to resume the process initiated by Rentech Inc. in providing the answers to questions submitted by the Comex and the new data for the project.

The following are the major changes to the project:

- The size of the plant is reduced from 300 000 to 210 000 tonnes per year.
- The 100% of raw material supply will come from Barrette-Chapais Ltée from its co-products and represents about 80% of its production of co-products.
- Wood pellets will be trucked to the port of Grande-Anse (Lake St. John) instead of the Port of Québec by train.
- Shipping pellets to the Lac-Saint-Jean area will reduce significantly the number of trucks currently used for the expedition of the co-products of the sawmill (lowered by 9 900 trucks per year). This reduction in the number of trucks will result in a reduction of the CO2 emissions of 10,000 Tons per year.
- The location of the factory was changed and it will be built near our boiler and our wood dryers.

The document responds to the additional questions of the Directive 3214-23-005 specifically addressed to RENTECH-CHAPAIS wood pellet plant project and which Barrette-Chapais Ltée wishes to realize, located on his site, located at Km346, route 113, within the municipality of James Bay.

The project presented here will be carried out on the territory of the James Bay agreement. In doing so, it is subject to the law on the quality of the environment of the Ministry of sustainable development, the environment and the fight against climate change which provides that certain industrial projects in this territory are subject to be reviewed by James Bay Evaluation Committee and subsequently by the Committee of review of James Bay.

Project Description

1. The promoter will indicate if alternative sources of supply in lignin are possible in the event of the temporary closure of the plant Barrette-Chapais?

All the raw material supplies of the new plant will be made by Barrette-Chapais Ltée therefore no alternative source of supply is considered at this stage. On the other hand, a stock of raw material of about 25 000 to 30 000 tons is in the model to compensate for temporary stops production of the sawmill or other.

In the event that an extended shutdown should be considered, we could explore the possibility of receiving of the material from our other wood processing plants

It is also worth mentioning that since the creation of Barrette-Chapais Ltée, no production stoppage took place, and, even during the recent difficult periods in the lumber market.

2. In order to produce 300,000 tons of wood pellets, the developer says, need a supply of 600,000 metric tons of lignin and bark. What proportion of the production of lignin and bark from the Barrette-Chapais Ltée sawmill will it represent?

The plant capacity reduction reduced its need for raw material, this need will be in the order of 410 000 green metric tons. This need represents about 80% of the production of co-products from the sawmill and the rest will be available for sale to other users.

3. The proponent indicates that pellets will be transported from the factory to the Port of Québec by train. To do this, 3300 cars a year would be needed. The proponent will discuss the transport by train of the pellets by estimating the number of required trips on a weekly basis (roundtrip), specifying if Canadian National facilities can support this new supplement and finally discuss of the cumulative impact of transport by train, especially if the railroad crosses sensitive places, including residential areas.

On the basis of an annual production of 210 000 tonnes, we expect to ship about 6,000 trucks from Chapais to the port of grande Anse in Lac St. Jean area. This transport will replace the current transport of 80% of our co-products which requires 16,000 trucks per year. This reduction in the number of trucks comes from the drying of the wood fiber and its densification during the granulation process. This reduction will have multiple positive impacts on the environment, particularly through a reduction of greenhouse gases emissions in the order of 10 000 tons per year.

Exported wood pellets contain no chemicals, and have a very low risk of flammability. The transport of these goods are not a danger more important than transport of wood chips.

4. The proponent will have to elaborate more on the process that will be used to convert wood residue in pellet including:

4.1 Is it a chemical or mechanical process or both?

The industrial process used for the transformation of woody materials in pellet is only mechanical. At no time there is manipulation of chemical material in the process.

4.2 The equipment necessary for the different steps of the process

Wood pellet production requires several steps of modification and preparation of the raw material. The following paragraphs present, in a simplified way, the industrial process of Barrette-Chapais Ltée. A flowchart is also available in Appendix 1 in order to schematize the following statement and a layout in annex 2.

Raw material supply:

This manufacturing process is based on a diverse raw materials. In doing so, the sawdust, shavings and chips will be directed from the sawmill to the pellet plant using conveyors.

All these materials will be stored in closed buildings. The bark will be used as fuel and will be stored outside on a cement slab with a reversed slope, while other by-products will be routed directly to the process or in the same place as currently for the one-time surplus

The sawmill will continue to store all of the co-products as it currently does before putting them in conveyors to feed the pellet plant. These operations will be equivalent to the loading of the trucks of co-products that are done by the sawmill, therefore we will not increase the diffuse emissions during the handling of by-products.

Industrial Processl

When the raw materials will be forwarded, they will follow a series of sieves and green shredders to reduce their size to the size appropriate for drying. The bark will be directed to the furnace to produce energy for the drying of the wood biomass.

The sieved materials are subsequently sent to the Rotary dryer in order to reduce the humidity to about 8%. After this step, woody materials are directed to a refiner to reduce the size of the particles of wood once again. Once these steps are completed, the fiber mix is directed to pellet presses that produce the pellets. The pellets are then cooled with air and are sieved before being stored in a silo.

Furnace

The industrial furnace is needed to reduce the humidity of the wood. This furnace will use bark as fuel. A study of dispersion will be conducted in the coming weeks and will be submitted to the Committee.

This Rotary dryer is a drum where woody materials pass through it with a mixture of air heated by the furnace. All of the air is directed to a system of treatment air. The clean air regulations will be respected.

4.3 A diagram showing the major stpes of the process

The flowchart is available in Appendix 1 of this document as well as a general layout.

5. The proponent noted that purges of water are needed to maintain in a State of function the bark furnace. Accumulation tanks will be used in order to adjust the temperature and pH prior to discharge to the environment. The proponent will specify the volume of these basins, the amount of water run on an annual basis, the discharge point in the environment and frequency of releases

Unlike the project of Rentech Inc., no purging of water will be required in the transformation process. In addition, water use will be used only for human needs or fire

risk management.

6. It is stated that the dryer used for the drying of lignin will be powered by a bark furnace with a nominal power of 29.33 MW. Since it is a new emission source as provided for in article 197 of the clean air regulations, a modeling of the atmospheric dispersion of contaminants must be performed in order to demonstrate that the standards of quality of the atmosphere will be encountered.

As mentioned previously, Barrette-Chapais Ltée will carry out in accordance with article 197 of the clean air act a modeling of the atmospheric dispersion of contaminants in the coming weeks and will submit it to the Committee

Description of the environment

7. The proponent must document more the occupation of the territory and the use of the territory near the factory (presence of Aboriginal campsites, cottages, resort leases, snowmobile trails or quads, use for hunting purposes or fishing by the Cree and the Jamesians)

Barrette-Chapais Ltée project was moved on the site of its sawmill as shown in the picture below.

This new location on the current sawmill site eliminates all impacts on the territory.

This site is near route 113 North and a snowmobile trail along the north side of route 113. While East and West, two lakes are located more than 1 km (Lake Laura and St. Lucia). Expanding the radius, the panorama offers logs storage areas on the South and the coniferous forest to the West and East. Finally, to the North, at more than 2 km by air, there is a group of camp of Crees of Oujé-Bougoumou first nations.
The Barrette-Chapais Ltée has no additional impact on the occupation of the territory.

Project Impacts

8. In the description of the impact of its project on the air quality, the proponent will discuss the cumulative impacts with Barrette-Chapais Ltée sawmill

The presence of the Barrette-Chapais Ltée sawmill and a new plant will impact the presence of particulate matter in the atmosphere. There are also other emissions that will be added following the construction of the pellet mill.
As mentioned previously a study of dispersion of air emissions will be done.

9. The promoter will indicate if equipment wash water will be treated prior to discharge into the environment

The new plant will produce pellets with a controlled moisture content. Thus, the use of water in the factory will be exceptional and infrequent. However, fire protection systems will be installed at strategic locations in the process. When they are activated, water will be used to eliminate the risk of fire.

The equipment will be cleaned almost all with air jets while the floor will be cleaned with vacuum cleaners. The use of water will be necessary in order to extinguish any sparks, and to dislodge fine particles of wood in places that would be more difficult. Thus, the water that could be used for the cleaning of security will be sent directly to the domestic watr treatment system. This water will be composed mainly of wood particle. No chemical is used in the process. The system will be designed to receive all waters from the plant, so that the toilet than from the cleaning of equipment.

10. The proponent will discuss the current use of residue from the Barrette-Chapais Ltée sawmill in the region (volume and main users) and the impact of this new project on supply and biomass of key users in the region

For many years, the world consumption of paper has been constantly decreasing. The effects of this reduction are felt more and more in Quebec where chips stocks increase in sawmills. This situation becomes critical and could jeopardize part of the forest industry in the years to come.

The creation of this new transformation of by-products from the sawimill will help secure the Barrette-Chapais Ltée sawmill jobs while reducing the stock of co-products available on the market increasing the sustainability of other samills in Nord-du-Québec.

From a regional point of view, only of sawdust are sold to the thermal plant of the village of Oujé-Bougoumou. This supply will in no way be disturbed by the presence of this new project, as a stock of about 20% of by-products will be still marketed by the sawmill.

The balance of the by-products will be marketed outside the region as currently.

Barrette-Chapais Ltée wishes to maintain the confidentiality of the volumes of co-products which are sold outside. Thus, it is impossible to provide the precise volume of chips, sawdust or other product that will be sold by the sawmill.

In conclusion, the volumes of biomass are available in the region and overall economic activity will be increased by adding an additional production process in the region.

11. The proponent will specify if the movement of the machinery needed for the construction of the plant is likely to disrupt the regular activities of the Barrette-Chapais Ltée sawmill.

The installation of this new project will not disrupt the Barrette-Chapais Ltée sawmill activities

Mitigations Measures

12. The proponent noted that before the release into the environment, the water will be sent to the treatment of domestic wastewater system, receiving the waters of toilets and others. The developer will have to specify if purge and wash water will be treated with this system. If necessary, the promoter will indicate the specific treatment for industrial water (washing and purges).

As explained above, the project does not require purges from the furnace. This avoids an obligation to a pH adjustment and a cooling of the water.

In addition, noted that wash water would be sent directly into the domestic wastewater treatment system. These waters will be characterized by a presence of fibrous material and the absence of chemical.

A septic tank will be installed before the treatment by infiltration. This will make sure to intercept too large particulate who find themselves in the mud. The treatment of these waters will be done conventionally or by infiltration. The size and location will be approved by a competent person.

13. According to the treatment of used water, the proponent will specify if sludge will have to be managed and how it intends to dispose of it.

As discussed previously, the wastewater treatment system will be made by infiltration. This implies the presence of a septic tank or will accrue large and non-degradable materials.

The management of sludge will comply with municipal and provincial regulations. A duly accredited company will be liable for the management and disposal of sludge. Currently, the sludge will be managed as a rejection, and therefore sent to a licensed landfill. Although the volume of sludge produced by the new plant will be minimal, Barrette-Chapais Ltée intends to reduce its environmental footprint. This being, the avenues of development will be considered in order to limit the impact on the environment.

Emergency Measures

14. The drying of the sawdust for transformation into pellets increases its flammable nature. The proponent will present the outline of its emergency plan including if the Barrette-Chapais Ltée sawmill there is involved.

Barrette-Chapais Ltée has always acted in a responsible and professional ways on health and safety of workers and investment in equipment and infrastructure. It therefore intends to prepare an adequate emergency plan in order to meet the needs of this new process

Barrette-Chapais Ltée undertakes to comply with the construction of the Building Code standards and will seek to establish best business practices regarding the methods of work and prevention for a manufacturing process such as envisaged.

Barrette-Chapais Ltée will obviously introduce internal management policies for additional fire hazard risks, applied to the new plant, to address its peculiarities.

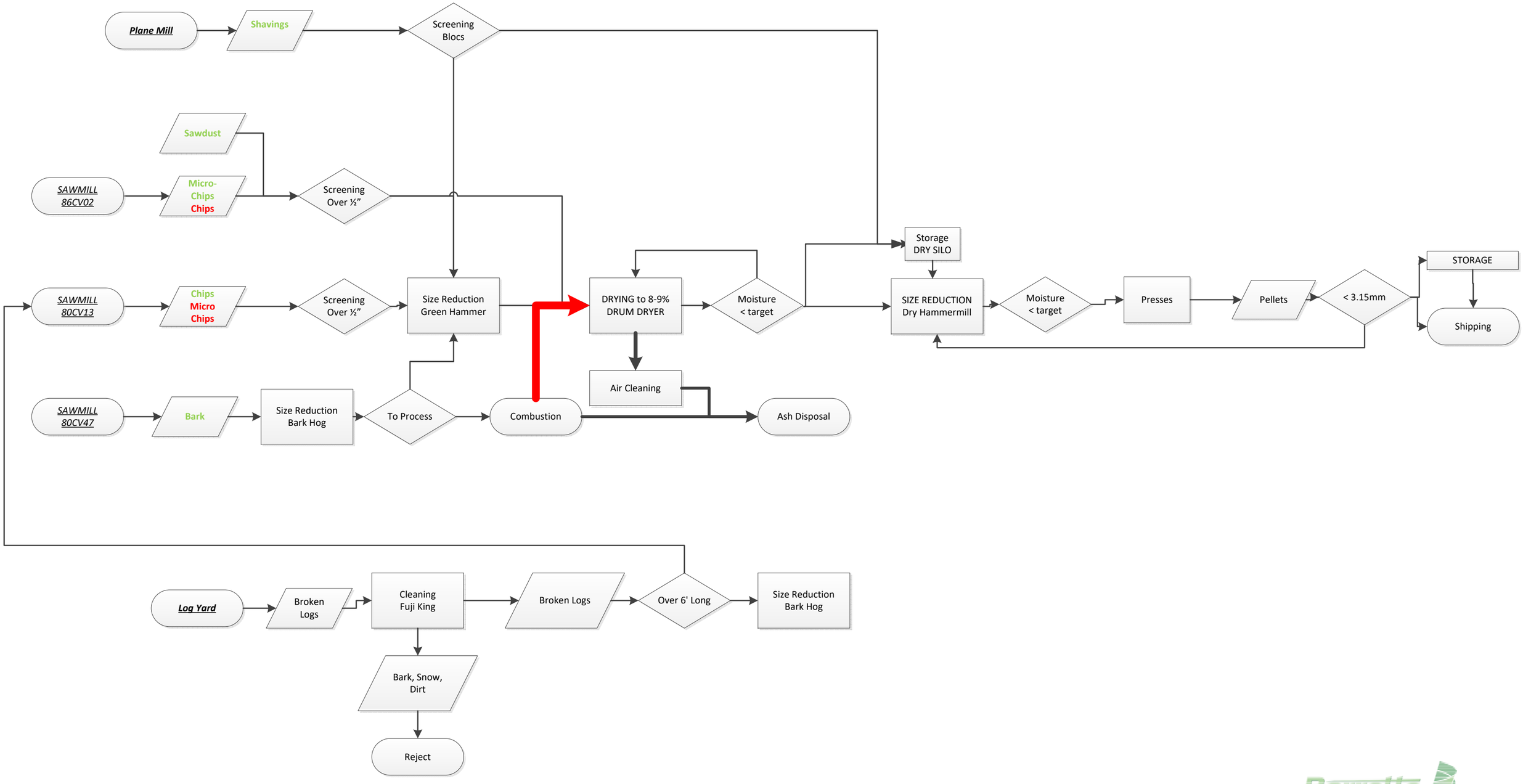
Besides, with regard to the water supply for fire fighting, the project will be connected on the network of the sawmill.

Annex 1

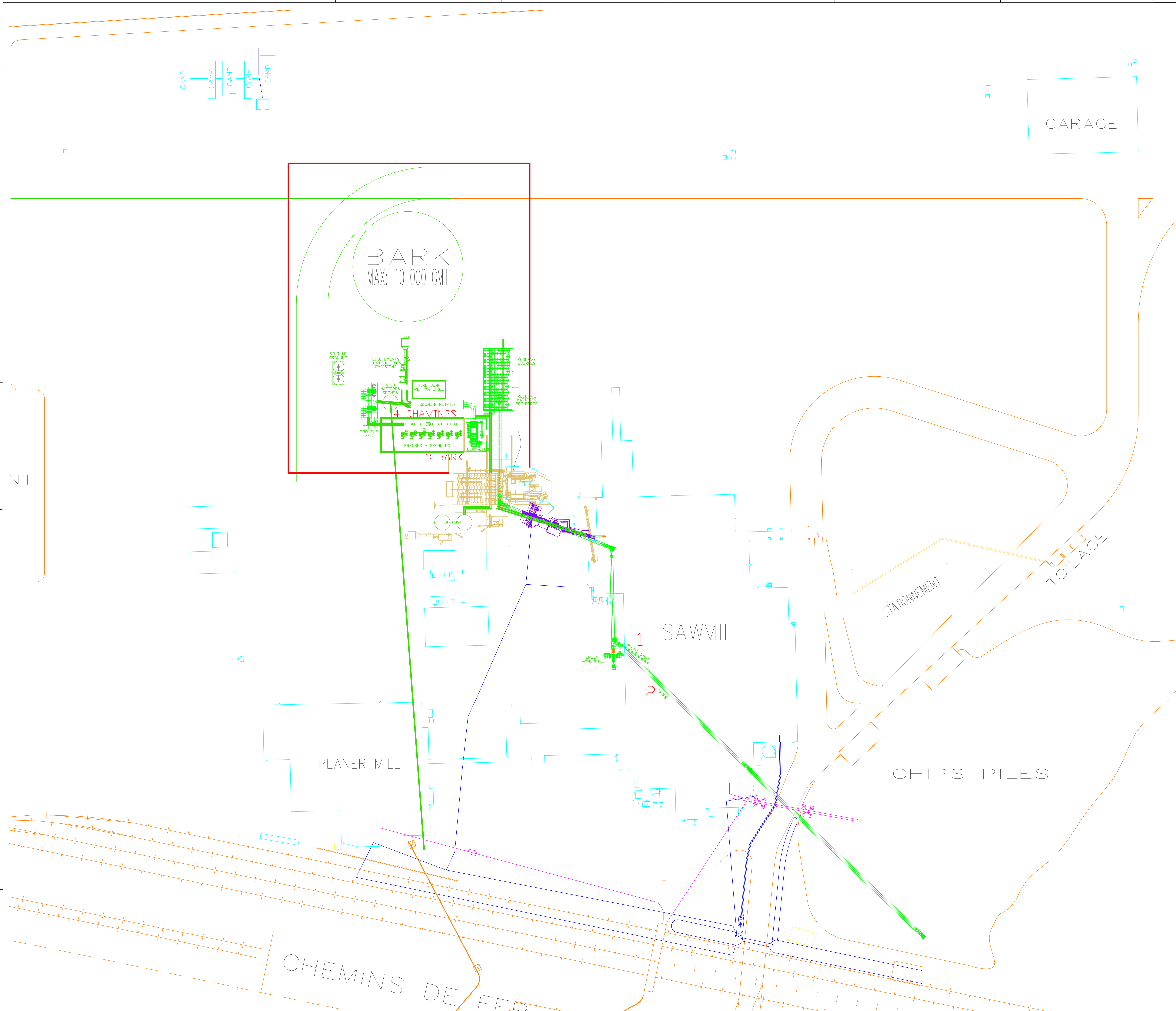
Barrette-Chapais Ltée Process Flow Diagram

Annex 2

Barrette-Chapais Ltée General Layout



Barrette Chapais Ltd
WOOD PELLET PLANT
GENERAL PROCESS FLOW DIAGRAM
October, 2017



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