
From Bog to Bag

- by Larry Meneely

The Langley Peat Operation

During its 22-year operation (1958 – 1980), Jack Bell's Langley Peat Limited employed both dry (dry scratch system) and wet (hydraulic system) peat extraction methods.

In the dry scratch peat extraction method, tractors and vacuum machines were brought in to remove the peat. First, all vegetation was removed off the top of the bog with tractors and brush cutters. Then the land was rotovated to loosen a very thin top layer of soil. The depth of cultivation was limited by the wetness of the bog. The bog was dug in small increments, allowing it to dry between diggings. It could take three to four years to dig down one foot. Usually a bog was dug to a total depth of about four feet below the surface.

The Langley Bog had no previously drainage prior to the commencement of peat extraction. Consequently, conditions at the Langley Bog were extremely wet. Of even greater concern was the lack of wind in the area, as this was necessary for drying the peat. These two conditions so hindered the success of the dry scratch operation attempted at Langley in 1958, that it was finally abandoned in 1961. The land was cleared and blueberries were planted to earn income from the site until a more suitable method of peat extraction could be attempted. Langley Peat introduced its revolutionary method of peat extraction to the Langley site in 1968, deciding to build hydraulic machinery for dewatering the peat in an operation similar to that of a paper plant.

To start the operation, the company obtained a shipbuilding subsidy that was used to build a barge for the hydraulic system. A clamshell excavator was situated on top of the barge now located in the peat bog. As the peat was extracted, a hole was created that filled with water. Eventually, as the hole grew the barge began to float on an artificial lake in the bog. Extracted peat was de-rooted on the barge and then pumped through an 8" pipe to the peat plant.

The peat slurry first passed through a coarse screen with bars called the "root picker" and then a second, finer, rotating screen situated on the concrete stock tank. Coarse peat dropped off the end of the screen, falling into the stock tank while the finer peat and dirty water passed through the screen and was pumped back to the bog.

A circulating pump kept the peat from settling to the bottom of the stock tank. Peat could be fed to the plant presses or kept circulating. The slurry had to be kept wet enough to keep it moving, but also dry enough to position it onto the machine presses. Therefore, a third screen dewatered the peat before it was moved onto the pressing machines.

Peat dropped from the screen onto a wooden box to be fed onto the presses. A gate regulated the amount of peat. Excess water was

sent to a scavenging pump and back to the bog. Once squeezed, the peat rolled out like a sheet into a long trough located at the foot of the presses. An auger ground up the peat carpet into small chunks to be conveyed outside the building and dropped into a hopper feeding a large three-pass drum dryer. Hot flue gas from the combusted oil or natural gas forced the peat into the dryer. The peat was carried along in the flow of gas and forced up into the top of a large separator cyclone. Operating like a cream separator, the cyclone separated the wet air emitting a huge cloud of steam. Peat dropped onto a conveyor that transported it to the roof of the baling shed. This story is based on a article prepared by the GVRD and researched by Anne Chartrand, December, 1995.

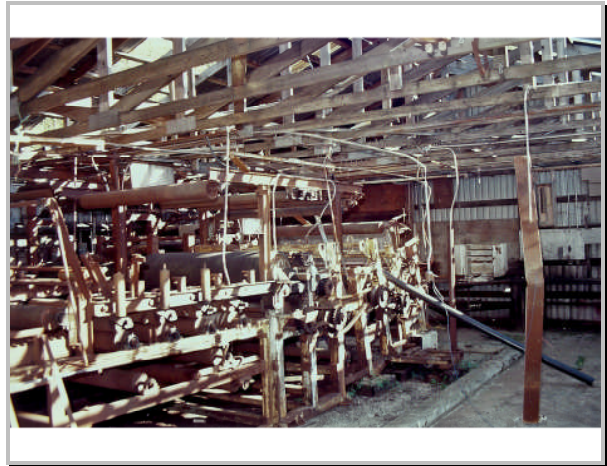
The Value of a Restored Bog

Some estimates of the level of smog pollutants go as high as 600,000 tonnes released into the air annually in the Lower Mainland. Bogs have a role in combating excess carbon dioxide contained in our polluted atmosphere. A State of Forestry in Canada Report states: "The greatest proportion of carbon is stored in peatlands, which comprise about 60 percent of the stored carbon. Peatlands clearly play a positive role in addressing the global problem of atmospheric carbon dioxide." A controversial theory expounded in "Discover Burns Bog" by Bill Burns states: "As bogs expand, they suck carbon out of the atmosphere, and trap carbon in peat, cooling down Earth like gigantic air conditioners. Bogs work to cool the planet..." According to Bill Burns, bogs delay decay often for thousands of years. Plants die but do not decay because there is little oxygen to aid the bacteria breaking down the plants. Over the centuries, organic material piles up, trapping the carbon. This forms peat, or "young coal".

Sphagnum moss is the dominant bog plant. Functioning like a sponge, it traps water in its cells. Slowly expanding, tangled mats of sphagnum make the soil acidic and kill off competition. Bogs directly affect the quality of our life. A properly functioning bog will help to maintain air quality by absorbing carbon dioxide, releasing oxygen and cooling the atmosphere.

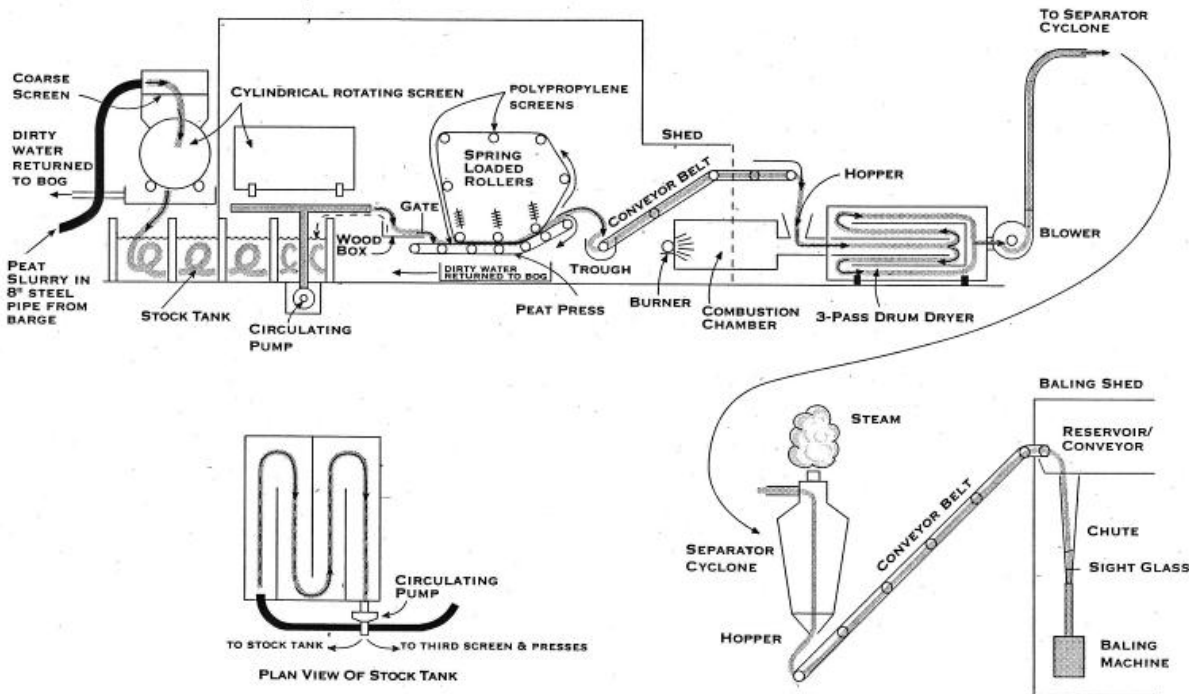


Langley Peat - the plant operation



peat press used to de-water the peat

LANGLEY PEAT PROCESSING PLANT



LEGEND
 ROUTE OF PEAT THROUGH THE PLANT 
 ROUTE OF EXCESS PEAT SLURRY - - - ->