



CLEVELAND CASCADE® CHUTE VANCOUVER WHARVES – B.C.

Due to competitive pressures, Vancouver Wharves decided on a strategy for bulk loading that included twenty-two (22) different types of agricultural commodities. The plan was developed to build a world class bulk loading facility that would offer customers and agricultural suppliers the advantage of fast loading with little or no degradation to the agricultural products within Canadian Environmental Guidelines.

CMC Engineering of Vancouver, Canada was the lead engineering firm for developing the bulk handling facility. The project included covered storage, covered conveyors, dust collection, ship loader, and soft loading chute. A task force of approximately twenty-two people made decisions regarding all project parameters and equipment selection.

The key to convincing customers and suppliers to utilize the terminal was the concept of less degradation due to better design. The commodities being handled range from wheat to peas to alfalfa cubes.

Most of the decisions regarding equipment selection were a tradeoff between cost and conceptualizing innovative solutions. The task force easily made these decisions with the guidance of CMC Engineering.

However, the decision on selecting a soft loading chute that could be cleaned between commodities to prevent cross contamination was difficult for the task force. All loading chute options were considered and site visits were made to several manufacturers' installations.

The project parameters were to load 40 pcf agricultural products at 1,900 tons per hour within Canadian Environmental Dust Guidelines with less than 1% fines generation by the loading chute.

After visiting **PEBCO**® installations in San Diego, California and Portland, Oregon it was decided that the Cleveland Cascade® Chute exhibited the degradation qualities most prized by the task force. The only remaining questions were the capacity of the chute, time for manufacture of the chute, and the challenge of quickly cleaning the chute between products.

There were numerous meetings between **PEBCO**® and the task force in Vancouver to solve these issues. **PEBCO**® committed to developing a Mark IV chute specifically to load the agricultural commodities at the requested rate and deliver the finished product to Vancouver by November 1999.

CMC Engineering was assigned the task of developing a cleaning system with minimal assistance from **PEBCO**®. **PEBCO**® confirmed the innovative air cleaning system designed by CMC would work as the chute was dropped down over the 60 foot cleaning pipe.

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Rob Booker, Manager of Operations for the terminal, confirms that the cleaning system is very effective and provides a quick solution for cleanout between various agricultural commodities.

As a testament to the soft loading nature of the Cleveland Cascade® chute, Rob reports that his customers are especially concerned with split peas and degraded alfalfa cubes. He also reports that the Cleveland Cascade® Chute has completely solved degradation issues with the loading of agricultural products. This puts Vancouver Wharves at the forefront of handling friable agricultural product from the Canadian heartland.

The solution to Vancouver Wharves' long term strategy was solved with innovative engineering and an open minded task force.

PEBCO® Incorporated of Paducah, Kentucky has entered into an agreement with Cleveland Potash of England to manufacture and sell the CLEVELAND CASCADE® Chute in North and South America. As part of this agreement, PEBCO® has purchased all the patent rights to the CLEVELAND CASCADE® Chute in these territories.

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