

Product Recovery (Pigging) Case Study:

Log House Foods

How Automatic Pigging Systems Improve
Efficiency and Minimise Waste in Chocolate
Production



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Summary

- HPS designed, supplied and implemented five fully-automatic single-pig tank select systems at a new Log House Foods production facility in Plymouth, Minnesota, USA
- The systems prevent significant amounts of residual chocolate standing in the pipes, improve lot control, and keep waste to a minimum
- By allowing Log House Foods to clear pipelines as frequently as they like with minimal effort, the company also saves significant amounts of time, labour and ensure product quality
- Pigging has also helped prevent downtime by reducing the chance of product solidifying
- Because they use pigging, there's no need for Log House Foods to flush additional coating through their lines. This prevents changeover and cross-contamination issues
- By saving energy and resources, pigging also helps towards Log House's environmental sustainability goals

About Log House Foods

Based in Plymouth, Minnesota, USA, Log House Foods manufactures and distributes its market-leading baking and bakery products. The company, which has been in business for well over 60 years, is built on a solid foundation of high quality, great value and exceptional customer service. As well as being a well-known brand in its own right, Log House Foods also produces the Candiquik range of baking ingredients and Jacobsen's Snack Toast.



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Project Background

Log House Foods built a new facility to produce white chocolate, milk chocolate and dark chocolate. This included 11 storage tanks. During the project, Log House Foods approached HPS to discuss using pigging to maximise product yield and increase plant capacity while reducing production downtime for changeovers and cleaning. Several of the lines are used for different formulations of product, so it was important to log house to quickly, efficiently and effectively clear them. As well as avoiding cross-contamination, Log House Foods wanted to avoid leaving product standing in the line.



Jeff Green, Director R&D at Log House Foods explained,

“This was a new installation and several of the lines utilize various formulas so it was important that we were able to clear the line. Also, not leaving product in the lines helps prevent settling and freeze ups which can cause unnecessary shutdowns”.

Why Log House Chose HPS as their Pigging Systems Provider

HPS has a strong reputation as the world's leading hygienic and sanitary pigging systems specialist, and has worked with a wide variety of companies that manufacture Chocolate, Baking and Confectionery products.

There are certain considerations that need taking in to account when processing and pigging chocolate products. HPS has extensive experience providing pigging systems for chocolate products, including manufacturers of some of the best-known brands throughout the world. This experience meant that, as well as being fully aware of the chocolate production process, they were quickly able to recommend highly effective, efficient and fully comprehensive solutions to meet Log House Foods requirements and objectives.



Product Recovery Solutions

Jeff Green commented,

“We spoke with some of our vendors to see how they managed similar issues in their facilities. Based on our research, we found HPS had a good reputation in our industry.”

The Solution

The new facility includes two main processing stages. The first one is for incoming delivery of liquid chocolate to store in one of a series of tanks in the tank farm. The second is for outgoing movement of liquid chocolate from storage tanks to a day tank.

For safety, reliability and above all operational efficiency, Log House Foods needed to automatically pig both the incoming and outgoing lines. The system had to be simple to use, and remove product



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from inside the pipework without the need for any additional handling equipment.

HPS designed, manufactured and commissioned three 4-inch and two 3-inch Fully Automatic Single-Pig Tank Select Systems.

HPS has a team of software engineers, programmers and developers. However, some customers, such as Log House, prefer to use their own. So in this case, HPS provided a software functional design specification (FDS) to enable Log House's selected programmers to develop coding for the pigging system operation.



Jeff said

"The solution was simple to use. The HMI was customizable to suit our needs and everyone we dealt with from sales to parts to installation and programming was fantastic to work with."

When commissioning was complete, HPS engineers ensured Log House Foods staff fully understood how the systems worked and were fully trained to properly and safely operate and maintain the equipment.

When asked about his experience working with HPS, Jeff stated

"The installation tech was fantastic, knowledgeable and helpful well beyond the scope of the work. HPS personnel were all knowledgeable and extremely helpful in sharing information based on other operations successes which in turn translated to ours".

"The follow through on a few issues that arose during installation and start up was tremendous. Everything was done on a timely basis and working with your team was about as easy an experience with a contractor that we had during the entire project."

The Results

This was a brand-new facility, so unlike pigging system implementations added to existing processes, there are no 'before and after' results. However, the five pigging systems have minimised product wastage, helped towards optimising changeover times, reduced the risks of cross-contamination, improved lot control and lowered the chances of product settling and freeze ups.

- The receiving line holds between 500 lbs and 2500 lbs of coating (depending on the storage tank being used). With minimal waste, the pigging system enables Log House Foods to quickly and easily send this coating to storage rather than leaving it in the pipes. This improves lot control and prevents products from sitting unavailable for extended periods of time
- From storage to use point, the piggable pipe sections hold about 500 lbs to 600 lbs of product. Not using pigging would significantly increase changeover times as well as resources and labour costs
- Pigging also mitigates the need to flush additional coating through the lines. This not only saves product, it also prevents cross-contamination during changeovers

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- Because pigging enables the operators to clear the pipe as frequently as they like with little to no effort, it helps avoid the product settling and solidifying

Jeff summarized the project results as follows,

“We feel, based on our operation that we have managed to cut down on potential down time by not leaving product in the piping. We definitely have not incurred any product issues by being able to remove as much as possible the various formulations we run through the same piping systems”

“It is a long run from receiving to storage on a sizeable pipe. Being able to clear that line after each receipt allows us to better utilize each lot in a timely manner more completely than if we just left it in the pipe from truck to truck.”

“The receiving line holds between 500 and 2500 lbs of coating depending on which storage tank we are using. With minimal waste (less than 25 lbs typically), we can push all that material to storage rather than leaving it in the pipes. This improves lot control and prevents products from sitting unavailable for extended periods of time.”

“From storage to use point, the piggable pipe sections hold about 500 -600 lbs. Capturing that quantity for change overs would increase labor and change over time dramatically. It also mitigates the need to flush additional coating through the lines so that change overs/cross-contamination issues are mitigated. In addition, it helps prevent settling and freeze ups by clearing the pipe as frequently as we like with little to no effort.”

In addition to the above benefits, by saving energy and resources, pigging has also helped Log House improve its environmental sustainability.

When asked if he would recommend HPS to other companies, Jeff replied

“Definitely”.



Contact HPS

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