

# PROJECT NAME

T-501 DRYING TOWER REPLACEMENT

## PROJECT HIGHLIGHTS

- Packing removal and tower dismantle accomplished ahead of schedule
- New tower installed ahead of schedule
- One nozzle on the tower was installed by the manufacturer 1 ¾" lower than required. The Gemini crew, proficient in cast iron piping assembly, quickly modified the adjoining cast iron piping to remain on schedule
- The new tower was turned over to operations at the exact time scheduled, fully operational

## PROJECT DESCRIPTION

Gemini Maintenance Solutions completed for Agrium the removal, demolition and replacement of an existing drying tower which was 28' in diameter, 40' high, brick lined, filled with ceramic packing and located in the heart of SA1 sulphuric acid plant on an elevated concrete platform 20' above grade. Agrium procured a replacement drying tower when Gemini was tasked with the scope of removing the old tower, and installing the new tower during the annual shutdown.

## SCOPE OF WORK

Gemini's scope of work was to remove the existing drying tower, followed by the installation of a new tower during the annual plant shutdown. As part of this, Gemini workers were required to prepare the old tower for removal by disconnecting the adjoining platforms and electrical wiring system while the plant was in full operation. This required the installation of temporary steel structures and temporary electrical power for lighting. This work was undertaken by staff dressed in acid resistant suits complete with GRAYLITE hoods. The goal was to undertake this work without disrupting operations. The actual demolition required that Gemini design and install two packing and brick removal chutes, cut the roof off the tower and cut out two 6' by 8' doors at the chute locations using water jet cutting technology. Gemini recruited the services of KT Grant from Alabama to bring their specially designed hydraulic hammer onto the plant to break up and scoop out the packing and brick from inside the tower and to facilitate the cutting into sections and removal of the old tower. The new tower was hoisted into place using a 550 ton crane provided by Sterling Crane. Gemini was required to survey the old and new tower using laser technology to ensure the new tower was accurately placed to align the new nozzles with the existing cast iron piping flanges. Gemini had to accomplish the entire demo and reinstall the drying tower in a 25 day time window by working around the clock on back to back twelve hour shifts. Gemini also had to co-ordinate the work schedule to ensure workers working time was designed to achieve optimal peak employee performance. Gemini, in its execution, was able to ensure the tower and its associated ducting, piping, internal components and packing were all expertly assembled and operational to produce sulphuric acid as per the clients start-up schedule. All of this was accomplished under a lump sum contract.

## RELEVANT SKILLS EMPLOYED

Gemini provided workers with unique GRAYLITE suit training to ensure employee safety and protection that was specific to the work that was to be undertaken at the Agrium plant site. Gemini was the first Western Canadian service provider to co-ordinate and import KT Grant workers and unique equipment necessary for the project. Key in the execution of the project was the supervisor group assembled by Gemini and that group's experience in the removal and installation of sulphuric acid towers.

