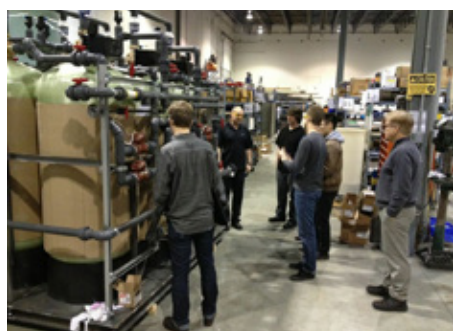


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bridging the gap

RESEAU-WaterNET partnership allows engineering students to apply skills in real-world scenario



The student design project group visits Nickeyeah (top). Scott Foster, BI Pure Water (middle picture, second from left) and George Thorpe, VP, BI Pure Water and member of the RESEAU-WaterNet Board of Directors (far right in middle picture) giving a tour of their company facility. Above, Jim Brown (yellow coat) provides a tour of the Lytton plant.

Putting theory into practice is an exciting learning process unto itself, as seven University of British Columbia (UBC) engineering students recently learned.

In partnership with Aboriginal Affairs and Northern Development Canada (AANDC), UBC and BI Pure Water, RESEAU-WaterNET invited a team of seven fourth-year students to design a community water treatment system for the Lytton First Nations, Nickeyeah Reserve No. 25. in BC. The group met with engineers from AANDC to understand the community's needs, travelled to Nickeyeah to meet with local system operators and discussed the validity of their proposed solutions with technical experts at BI Pure Water. They also attended a provincial symposium for BC First Nations water operators to gain added end-user perspective.

"We wanted to add an additional layer to the fourth-year design project all chemical engineering students must do at UBC," explains Dr. Madjid Mohseni, RESEAU-WaterNET's Scientific Director. "In collaboration with network partners, we created a unique opportunity for the students to work directly with experts from industry, government and, perhaps most importantly, community operators. The challenges with source water quality, operational requirements and budgets in Nickeyeah were all real, and it was a true test of applying theoretical knowledge to a specific situation while learning to work to build consensus among diverse viewpoints."

Elliot Nash, a UBC chemical engineering graduate from the US, signed on to the project with only one course on water treatment under his belt – and now wants to pursue a career in water.

"For me, the best part was getting to visit the community and talk to the operators to see what they wanted and what kinds of systems they were comfortable using," he says. "In engineering, we are taught that there is always a "right" answer. But on this project, we had to meet with different engineers and consultants to talk about what was possible and affordable, and everyone had different opinions about what would work and what wouldn't – everyone had

their own right answer. So, even if you have the theory down, the applied side of things is very different. This project definitely made me want to work in water."

Jim Brown, a member of the Lytton First Nation and lead operator for the community's water plants, applauded the students' enthusiasm for solving important issues.

"I thought it was great that the students could experience real life on a First Nation Reserve," he explains. "They were very excited about evaluating our existing system to come up with a working filtration/disinfection process to upgrade a 1990 design. I think all researchers should listen to the views of on-site operators to find out what works and what doesn't according to our experience, especially at different times of the year. Operators across BC are very interested in developing standardized components for community water systems, such as chlorine pumps, valves, etc. so that neighbouring bands can share parts in an emergency. Right now, all things are not equal, but hopefully this will change."

Recent graduate and fellow group member Travis Pahl credits his experience on the project for helping him land a position at a BC environmental engineering firm based in Vancouver.

"It was a great experience for me," Pahl says. "Most projects are highly theoretical, so one of the nice things about this one was that it was practical. We had to work through every detail head on with the engineers and consultants to make sure it would work and they would get behind it. This was a big advantage to me, and one of the big reasons I was able to subsequently get the job that I wanted."

Mohseni adds that the project's key partners have all agreed to make it an annual event.

"RESEAU-WaterNET is all about collaboration between researchers, regulators, industry and end-users in small water systems, and our goal is to create the next generation of water professionals who understand the unique needs of these small communities. We are thrilled with the level of engagement the students experienced, and look forward to doing it again next year." ♦