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WESTCOAST DIVING CONTRACTORS

Constructing a 1,200 metre sewer outfall on Salt Spring Island had more than a few challenges, not least of which was laying the pipe 100 feet underwater.

FEATURE | Sewer and Watermain

British Columbia company goes deep for its customers

High risk work means safety is always top of mind when on the job

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Providing sewer and watermain service to residents of Canada's island communities means getting to the bottom of the matter – literally.

And so when the 10,000 residents of British Columbia's Salt Spring Island required a new sewer outfall in 2007, the contract was awarded to Westcoast Diving Contractors Ltd. of Nanoose Bay.

"The sewage is treated on the island," says John Dekker, owner of Westcoast. "It was our job to construct a 1,200-metre sewer outfall that would transport treated water to the bottom of the channel by gravity."

The job required about two weeks worth of surface work and 10 days of diving services.

The shoreline near the installation site offered little space for Westcoast to manoeuvre the six-inch high-density polyethylene (HDPE) pipeline, which needed to be assembled in its entirety before installation.

Dekker rented a large work barge and outfitted it with a fusion welder, a five-ton crane truck and other construction equipment. The barge was anchored in Long Harbour, about eight kilometres from the installation site.

"We were allowed a certain amount of time to use that harbour space, which is normally open to boat traffic.," said Dekker.

The crew assembled the sewer line section by section, using the onboard seam welder. Every two metres or so, the crew added cylindrical eight-inch lengths of concrete anchor to prevent the sewer line from shifting or floating to the surface. A flange at the end of the pipe allowed the air-filled sewer line to float on the surface of the water.

"When we completed the assembly, we used a tugboat to move the entire line to the space designated for the sewer line on the bottom of the channel."

There one end was fixed to a thrust block and a concrete anchor placed on shore above the tide zone, to minimize the movement of the line. The other end was attached to the tugboat, which stretched and positioned the line over the water lease.

"When the line is in place, we slowly pump in water from the shore end, which displaces the air inside the line and allows it to sink to the bottom of the channel," says Dekker.

"With four divers and four people on the beach, we carefully control the sinking pipe so all of the air bubbles move out of the line. The end of the outflow ultimately came to rest about 100 feet below the surface of the water."

Once the line hit bottom, Westcoast divers used a high-pressure water jet to displace mud and rocks from underneath the line. "It's like digging a trench underwater," says Dekker. "The sewer line sinks into the trench and is covered again when the material settles into place."

Sewer and watermain contracts form only part of Westcoast's business. Other specialties include construction of oil and gas pipelines, docks, pilings, dams, underwater welding and inspection, and salvage work for a diverse range of clients.

Safety on the job is paramount. WorkSafeBC regulates the contractor both as a construction company and as a diving company. "Most of the jobs we take on are treated as high-hazard," says Dekker. "Every job is different, so each new project begins with a pre-job evaluation and a notice of project forwarded to WorkSafeBC."

Westcoast's upcoming watermain contract for a new development on Salt Spring Island can also be classified as "different."

It requires the installation of an eight-inch HDPE pipe across the island's St. Mary's Lake.

"But in this case we'll be pulling a six-inch HDPE watermain through the inside of the eight-inch line to provide extra protection," says Dekker. "Contracts like this keep the job interesting."



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