

# Tailings triumph



## WINNER

**Canadian Dewatering helps deploy innovative solutions and comes out on top as Supplier of the Year 2011**

By Nordahl Flakstad

**For Canadian Dewatering LP, as a business proposition, oil and water do mix. In fact, it provides the important basis for the firm being voted *Oilsand Review's* 2011 Supplier of the Year.**

The diversified fluid management organization is headquartered in Edmonton, and is the amalgamation of Canadian Dewatering and Northern Underwater Systems. Acquisitions of both organizations by the Mullen Group Ltd. in 2006 and 2004 respectively, created a wide service offering. The Mullen Group owns a diverse stable of independently run subsidiaries in the oilfield services and trucking/logistics sectors, and is based in Okotoks, Alta. Within the Mullen Group, Canadian Dewatering, with 400 employees (up from 60 in 2004), is currently the largest subsidiary.

Founded in 1972, Canadian Dewatering was created just a few years after Great

Canadian Oil Sands (now Suncor Energy Inc.) commenced the first commercial oilsands operations near Fort McMurray, Alta. Over the years, Canadian Dewatering has actively provided fluid management services to major oilsands mining players including Suncor, Syncrude Canada Ltd., and Shell Canada's Albian Sands and Jackpine projects, as well as to the many supporting industry suppliers within the region. An important aspect of these assignments has been the day-to-day maintenance of tailings ponds and site-wide dewatering services to maintain operations.

"Canadian Dewatering provides a specialized service to those who operate in the Municipality of Wood Buffalo region," says company president Dale Marchand. "Together we can face the present and future challenges in the region with practical solutions that work within our environment. We have proven [that] our size and scale fits ►

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the range of smallest to the absolute largest challenges in the region.”

And the proof is in the pond—Suncor recently selected Canadian Dewatering as the main contractor for deployment of its tailings reduction operations (TRO) tailings management technology, a potentially game-changing method of drying the leftovers from the extraction process in weeks rather than decades, allowing for much faster reclamation.

Although Canadian Dewatering got its start in the oilsands and has become heavily integrated into a number of projects, its reach now stretches beyond the bitumen belt.

Besides Fort McMurray, it has seven other branches across western Canada. The Surrey branch, home to the sediment control and high-pressure cleaning divisions, serves the Lower Mainland municipalities in its backyard. Elsewhere, the Yellowknife and Saskatoon branches are specially equipped to serve diamond and potash mining. The Winnipeg and Calgary branches are growing in their provision of pumping and dewatering equipment to serve regional construction and mining clients. Meanwhile, the ever-travelling Castlegar, B.C. team’s expertise is rooted in diving services.

Edmonton provides specialized piping and dewatering competence and is home to a 15-acre assembly yard, plus fabrication and maintenance shops. Each branch has on-site skills and capabilities, and relies on the network between the branches for success. They also draw upon the product support team for specialized personnel or additional equipment knowledge—be it for barges, dredges, or dewatering and sediment-control technologies.

In Fort McMurray, the locally based oilsands tailings management team gets deeply immersed in dewatering even before a project’s

operations begin, amid production, and, increasingly, during reclamation.

Canadian Dewatering seems likely to continue its disciplined growth, given recent trends within the firm and in its key oilsands market. In many ways, the Energy Resources Conservation Board (ERCB) Directive 74 signals the start of a new era by setting out strict requirements on the timing of construction, use and closure of tailings ponds.

The directive includes requiring oilsands producers to hasten reclamation by expediting the traditionally tedious, decades-long process for settling mature fine tailings (MFT). From this push has come the shove by producers to find and apply solutions that speed up reclamation, and, in particular, MFT drying. Under pressure to meet the June 1, 2012 Directive 74 deadline for a targeted 50 per cent fines content in tailings deposited in designated deposit areas (DDA), oilsands producers have sought solutions suited to their operations.

Suncor will spend \$1 billion over the next two years on the commercial deployment of TRO, a technology that provides for the company to never build another tailings pond for its base operations. (Any new mine requires at least one pond as a process vessel.) TRO involves mixing MFT with polymer flocculent then placing the mixture in thin layers on sand banks for quicker drying in DDAs. The intent is to dredge MFT produced from current output as well as legacy tailings generated by past production. But whether old or new, extracting the MFT is not easy.

Given Canadian Dewatering’s many years of experience, not surprisingly, the oilsands industry turned to it for solutions.

In the case of TRO and other tailings operations, Canadian Dewatering is providing both conventional and submersible dredges that draw off MFT from the middle layer where it is suspended in the tailings pond. As dredging has always been a component of Canadian Dewatering’s service segments, the company was able to rely on existing supplier relationships to modify the dredge designs from equipment used elsewhere in the company. This provided the oilsands operators custom-designed and modified solutions.

The dredge services involve accurately locating the layer of MFT, a process that required developing new dredge technologies—including densitometers and flow meters linked to and operated from the dredges. The densitometers, notes director of operations support Catherine MacDonald, are nuclear devices, and working with them meant Canadian Dewatering had to be certified by the Canadian Nuclear Safety Association, which it achieved in 2009. The

company also had to get certification from the Alberta Boilers Safety Association for its Edmonton welding shop in order to fabricate the in-house-designed, custom-spool barge to hold the instruments. The fully operated and maintained dredge services require specifically trained crews—from the operators, mechanics, rig-in crews and radiation-safety personnel, to supervisors and support staff.

In some respects, all of this means diving into new waters, even for Canadian Dewatering. But MacDonald believes the firm has an advantage over some competitors relative to providing Directive 74 solutions. “We are utilizing our existing areas of expertise—fluid management. In many ways, we are doing what we are already competent in supplying, just for different objectives.”

In addition to dredging services, to assist oilsands operators in achieving their tailings goals, the Canadian Dewatering teams are involved in the construction of the DDA cells, operating pumping and booster systems to facilitate polymer addition, and installing discharge piping systems to deposit the material into the DDAs, where their deposition equipment further assists in drying the MFT slurry material.

Separate from, and in addition to, the legacy tailings operations, Canadian Dewatering is involved in the significant long-term solution for Suncor Energy. In early 2010, it was awarded a contract to design, engineer, procure, fabricate, construct, commission and turn over three thin fine tailings (TFT) barges. The 12,000-horsepower barges will have capacity to pump 140,000 gallons of fluid per minute, representing the largest industrial pumping system in western Canada.

These barges will have a footprint in excess of 4,200 square feet and weigh 1.5 million pounds, says Ian Ross, vice-president of product support. They are expected to be mechanically complete this winter.

“Engineering and designing systems for new technologies, such as TFT, is always challenging,” Ross notes, “but we are executing successfully within aggressive timelines.”

Certainly, the project has involved considerable logistical challenges and a widespread network of suppliers providing everything from pumps (from Georgia) to hulls (Maryland, Kentucky and Mexico), motors (Taiwan) and much more. But even with the global supply chain, considerable fabrication has taken place in western Canada, from Edmonton to Prince George, with the Mullen Group transport divisions moving components to Fort McMurray for assembly.

For Catherine MacDonald, “The project demonstrates what we are capable of both

in the water and oil markets. It shows how committed we are to the oilsands industry and providing our services to support the development of sustainable operations.”

From their supply of daily oilsands operations support, to reclamation services, to long-term solutions, Canadian Dewatering’s distinction of service has been the result of the employees committed to the organization. Says Marchand, “Our people possess passion, intelligence, integrity and demonstrate ownership time and time again towards the important work we do in the oilsands region and across western Canada. Our people have proven best-in-class safety results, which we continually find ways to improve upon.”

In contrast to many companies in the Athabasca region that fly in workers, Canadian Dewatering is proud that it hires 90 per cent of its personnel locally. This commitment not only maintains the company philosophy of promoting work-life balance, but it also contributes to the sustainability of the Municipality of Wood Buffalo by encouraging family roots.

**Canadian Dewatering’s locally based Fort McMurray oilsands tailings management team gets deeply immersed in dewatering even before a project’s operations begin, amid production, and increasingly, during reclamation.**

Being raised in Fort McMurray has provided Marchand some added perspective on the growth and changes that have occurred in the community and region: “Today Fort McMurray provides greater opportunity for the younger workers and families thirsty to grow their skills and experience. The development of Keyano College, the increased commitment to community seen by the strength in municipal leadership to develop world-class facilities like MacDonald Island Park and expansion efforts in so many areas like the airport expansion, roadway and infrastructure projects continue to support what is so great about Fort McMurray; a great place to grow a community.” [OSR](#)