



WJ GROUNDWATER
Canada



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SINGLE LANE
ONLY

NO
STANDING

DOWN FRY SCAFFOLD SERVICE

SELWOOD
Super

We are WJ Groundwater Canada

WJ Groundwater Canada offers a complete groundwater control and maintenance service, which encompasses design, installation and operation of pumping, pressure relief, drainage, permitting, water treatment and bypass pumping systems throughout Canada.

Established in Canada in 2016 to undertake the dewatering for the Eglinton Crossline LRT, which is both the largest and most challenging dewatering project in Canadian history - WJ has successfully dewatered 15 underground stations, tunnels and associated structures along 20 km of new light rail alignment in Toronto. Now that the Crossline LRT project has matured WJ Canada is now able to leverage its significant investment in resources, equipment and people in Canada by reaching out to offer our industry leading services to general contractors, specialist subcontractors, engineering firms, design firms, developers and utility owners. The response has been overwhelming.

With more than 35 years of experience behind us and over 2,500 completed projects worldwide WJ Groundwater is the largest Dewatering Company in the UK and the Middle East. WJ Groundwater Canada is now preparing to expand in Canada and across North America by delivering cost effective, state of the art dewatering and water treatment services for all your water management requirements.

Water Management Services

It is no secret that water can pose one of the largest risks to a construction project.

WJ not only aims to help our clients understand and manage these risks, but also provide competitive and practical solutions for all of your water management needs.

Good water management can:

- Improve working conditions
- Produce pumped water free of suspended solids
- Improve excavation stability often allowing increased angle of battered slopes
- Reduce additional temporary works measures
- Improve earthworks productivity
- Reduce environmental impacts
- Improve safety for your work force
- Reduce project costs and programme time



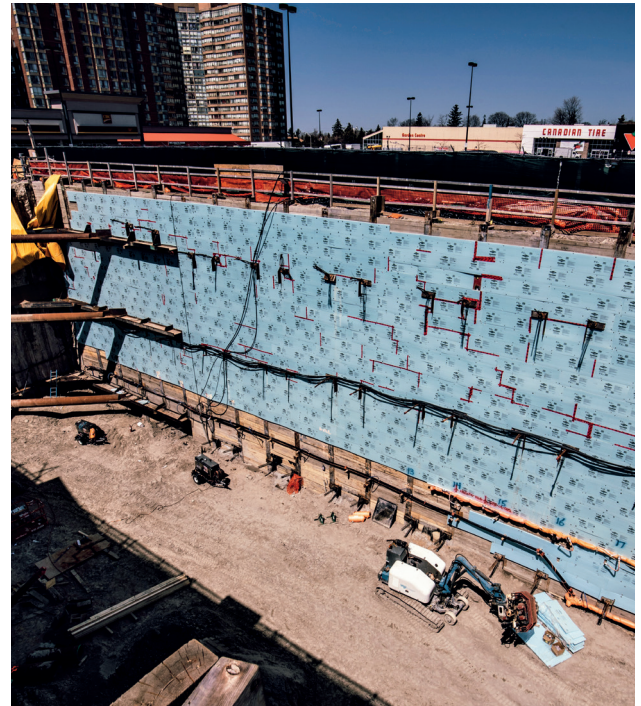
Construction Dewatering: Wellpoints

Wellpoints are used to lower groundwater levels and improve working conditions in shallow excavations.

Groundwater is abstracted via the wellpoints from a vacuum generated by a centrally located suction pump. A wellpoint is capable of drawing water from the ground up to a depth of 6m and is ideal for shallow excavations, basements, pipelines, confined spaces, underpasses and tunnel environments.

Pumping options include surface electric or diesel suction pumps and super-silenced models for residential areas.

Installation is achievable by water jetting, augering or rotary drilling techniques.



Construction Dewatering: Eductors

Eductors also known as eductor-dewatering systems, are used to control pore pressures. They also lower groundwater levels in silty fine sands and laminated silts and clays.

Ejector pumping stations centrally located feed high-pressure water to the base of the wells via an ejector body. The flow of water through the nozzle generates suction in the well drawing in groundwater.

Eductors can dramatically improve ground conditions up to depths of 50m. WJ is the industry leader in the design, installation and maintenance of ejector systems.



Construction Dewatering: Deepwells

Deepwell construction dewatering systems lower groundwater levels using a series of drilled wells, each fitted with its own electric submersible pump.

Large drawdowns can be achieved since the only limits are well depth, pump performance, and prevailing ground conditions. WJ experts carefully design and install deepwell systems to maximise drawdown and pump efficiency while ensure discharge is free of suspended solids.

At the heart of each system an innovative electrical pump station is used to power and control multiple pumps from a central location. Control options include automatic mains failure (AMF) switchover to standby power, visual/audio/GSM text alarm systems, and a secure Cloud based data logger for monitoring groundwater flows, pressures and levels.



Well Drilling Services

WJ have the capabilities to both design and drill wells for your project.

With over 35 years of experience designing and implementing some of the most challenging dewatering mega projects in the world WJ Groundwater has developed its own drilling equipment, well and pump designs, processes, technology, monitoring systems etc., based on our experience working in tunnels, underground, underwater and on construction sites that had very limited accessibility at the surface level.

As a result of our experience and engineering centric approach to dewatering, our drilling equipment has evolved far beyond Industry standards.

Our rigs have the capability to drill at 360° and achieve rotary water flush drilling performance.

We designed to operate within the constraints of any construction site – no matter the limitations of the space or geological conditions.

Our rigs have diesel engines which meet Tier 3B emissions standards and are fitted with safeguards for interlocking rotating parts.

Our drilling crews are experienced geotechnical drillers who are Ontario Ministry of Environment accredited and have the benefit of access to the ground drilling knowledge and wide range of equipment of the WJ Group.

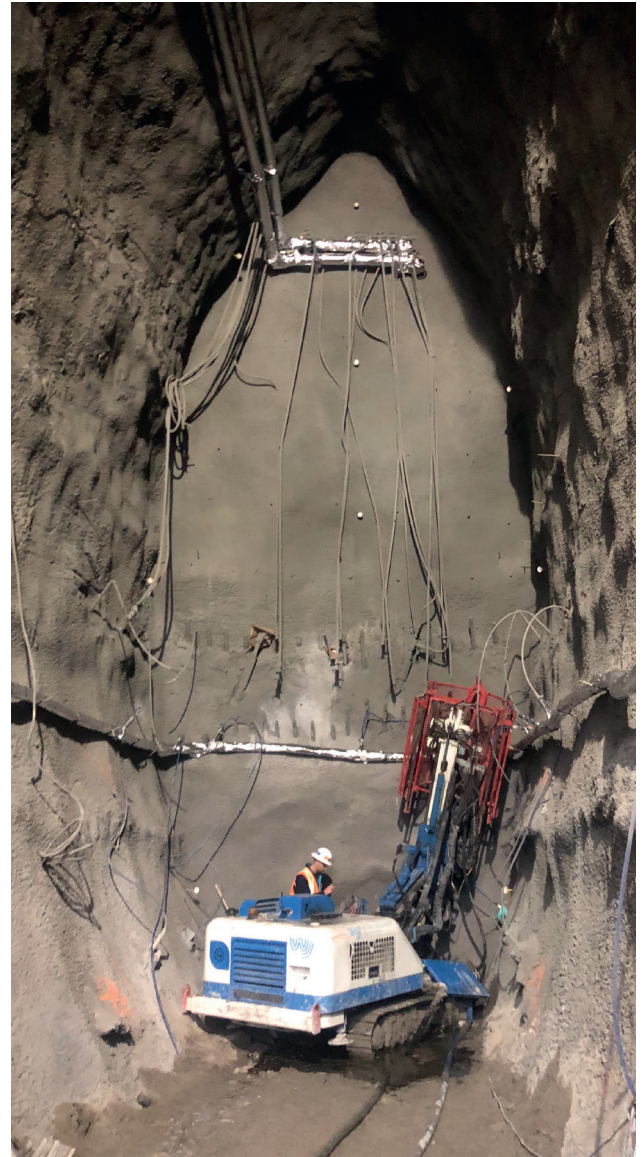


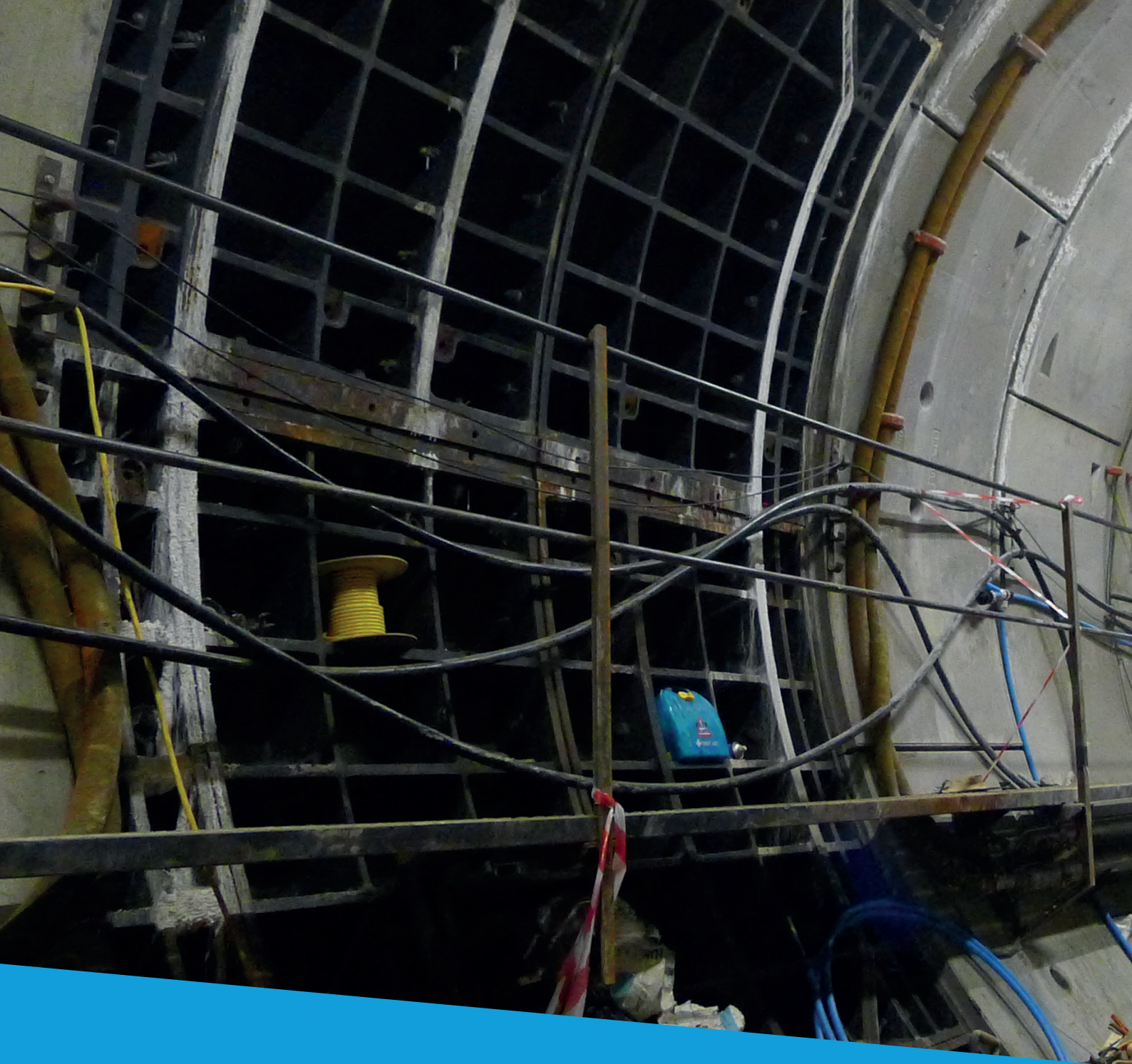
In-Tunnel Drilling & Probing

WJ are the leading Canadian contractor for the installation of in-tunnel dewatering systems and investigative probing surveys.

Our fleet of articulated restricted access rigs, all with the ability to drill at 360°, are capable of installing both in-tunnel wells and probe holes axially, radially and at a range of inclinations, ahead of tunnels, cross passages and shaft construction.

Dependant upon ground conditions and project requirements our rigs are capable of drilling distances of up to 20m.







In-House Design and Consultancy

WJ have unrivalled in-house expertise, experience and knowledge of the design of a wide range of water management control systems.

WJ is able to provide a range of consultancy services:

- Computer modelling of groundwater (e.g. MODFLOW, SEEP/W, Aquiferwin32)
- Assessment of site investigation data for the purposes of groundwater control
- Pipeline design
- Investigation of settlement risks due to construction dewatering
- Design development of water management control strategies
- Liaising with Ministry of Environment and other relevant bodies over abstraction and recharge licensing and permitting



Pumping Tests

WJ are the leading contractor in the design, installation, management and analysis of pumping tests.

Pumping tests are vitally important to understand the hydrological profile of the site. We recognize that best value engineering solutions are developed through a team approach with the client, Ministry of Environment and consultant engineers. When possible we participate in early contractor engagement to enable WJ to fully develop a robust groundwater control strategy best suited to the clients needs.

WJ's real time, 24/7 Monitoring and Alarm can be programmed to have key Project Management People representing the GC, Engineering firm and Owner. This gives direct access to whatever water flow data they need. The same system can also be used as a tool to provide data for client reporting at no additional charge.



Instrumentation and Monitoring

Monitoring and management of data is an important process for many construction projects and provides key information, allowing long term geotechnical and hydrogeological trends to be identified, preventative measures planned and provides useful intelligence for future design and construction methods.

Our dedicated team provides secure cloud based data monitoring dashboards to allow remote 'real-time' system status monitoring for our clients.

WJ offer a variety of monitoring instrument options including:

- Piezometers, standpipes and transducers to monitor groundwater levels
- Flowmeters to measure the flow of water
- Inclinometers, extensometers and strain gauges to monitor the movement of slopes and structures
- Earth pressure cells to measure the stress and pore pressure in soil
- Weather stations to monitor external weather and tidal conditions
- Pump status sensors to monitor pump activity
- Thermal Response Testing (TRT)
- Deep datum



Water Treatment & Suspended Solids Control

WJ designs, installs and operates rapidly deployable water treatment and solids control solutions.

Our range of pump and treat options together with early contractor engagement allows us to provide a bespoke, well budgeted and targeted scheme.

WJ holds an Ontario specific water treatment plant license and can assist with liaising with relevant bodies to obtain the relevant consents for any size of project.

WJ have experience in dealing with petroleum hydrocarbons, chlorinated solvents, metals and pesticides.

Treatment technologies and options include:

- Settlement tanks for suspended solids control
- Oil/water separators
- Chemical dosing
- Plate/tower air strippers
- Carbon and sand filters
- Ion exchange filters
- CO² pH balancing and correction:



Sump Pumping & Overpumping

WJ have extensive experience in providing sump pumping and overpumping solutions as a part of a complete water control strategy for a project.

All WJ pumps are fully tested and serviced before being deployed to site to ensure each pump performs at its optimum efficiency and effectiveness.



The Water Management Partner of Choice

We strive to deliver confidence through excellence for every project. A clear example of this can be seen in what we achieved for the massive Crosslinx Project, the largest transit expansion in Canada.

Thanks to our innovative dewatering design and state-of-the-art processes, TTC/Crosslinx were able to realise this enormous engineering infrastructure project under one of the busiest streets in Toronto... and way under the original estimated cost.



Find out more

There's so much more to tell than we can share here!

For more information about WJ Groundwater Canada, our services, the sectors in which we work, our awards and accreditations, not to mention our extensive library of project case studies and white papers, please visit our website or contact us directly.

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