

# SUSTAINABILITY

# **REPORT**



2018

This report on Powertech's state of the environment and safety provide a summary portrait of the company's strategies and achievements for sustainability.

# **MESSAGE FROM OUR CEO**

Fiscal 2018 was another exceptional year for Powertech. We saw top-line growth of 17% and bottom line growth of 43%. While we are doing many things right, the process of improvement is never-ending, and we firmly believe that we can always do better. This drives us day-in and day-out to challenge ourselves. To this end, during Fiscal 2018, we took a number of steps towards enhancing our safety, health, environmental and social performance; all of which we regard as essential to the sustainability of our ongoing business. We recognize that our shareholder and customers have high expectations of us, and we are determined to remain a safe and responsible employer, neighbor, partner and testing laboratory.

We are proud of our commitment to sustainable operations, and the effort and achievements described in this report reflect just that commitment. We hope that you find this report informative, and we welcome your feedback as we look for continued opportunities to increase our environmental responsibility, safety performance, employee well-being and development. If we do things right, our financial performance will be sound.



Raymond Lings
President and CEO
Powertech Labs

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This report outlines Powertech's commitment to responsible and sustainable operations and presents the company's environmental and social performance pertaining to all operations and sites for the period of Fiscal 2018 (April 2017 until March 2018). This is the 2<sup>nd</sup> annual sustainable development report produced by Powertech Labs Inc.

#### Ensuring Sustainable Performance—Objectives

Strengthen the quality of our work.

Ensure operational continuity and growth from new services.

Social	<ul> <li>Prevent workplace injuries and ill health, and continue to improve performance.</li> <li>Operate facilities in a safe, secure and reliable manner that minimizes risks to equipment, employees/contractors and the public.</li> <li>Conduct relationships with stakeholders and partners in accordance with the principles of Safety, Integrity and Excellence.</li> <li>Through a formal Activity Committee, ensure a vibrant and active workplace for all staff.</li> <li>Ensure staff have formal development plans that are enacted.</li> </ul>
Environmental	<ul> <li>Meet all legal requirements and commitments with the objective of exceeding requirements where it makes business sense.</li> <li>Maintain an environmental management system to the ISO 14001 standard.</li> <li>Through continuous improvement, work relentlessly to prevent and/or mitigate adverse environmental effects from operations.</li> <li>Evaluate actions to maintain, and/or enhance natural habitats and associated species of concern.</li> </ul>
omic	<ul> <li>Pursue efficiency and productivity improvements while reducing costs.</li> <li>Maintain a net profit margin.</li> </ul>



In the life of a test laboratory, every day is different. The type and complexity of tests change daily. This means equipment and laboratories are routinely reconfigured. In some cases we are testing prototype equipment (high potential for premature failure), while in other cases, manufacturers are testing to establish design limits (i.e., equipment is tested to destruction). In some cases. different tests, with different safety profiles, are run in parallel in the same laboratory. The fluid nature of the daily operations demands extraordinary attention to safety.

We recognize the responsibility that comes with managing the complex daily operation of Powertech Labs, and we understand the gravity of potential consequences of failing to operate safely. Keeping people and assets safe while being good stewards of the environment are critical to the running of our business. Irrespective of our financial performance, one safety incident will undermine all other achievements.

Our safety policy states that:

"Powertech Labs Inc. will conduct its operation in a responsible manner that minimizes the risk of injury or disease to employees, contractors and the public.

Powertech will not only meet the mandatory requirements of the Workers' Compensation Board (WorkSafe BC) and BC Hydro but will aim to achieve superior standards of safety and health specific to Powertech Labs Inc. The core of our safety effort is only achieved through our commitment to provide a safe work environment for all employees and customers. As such, all employees are accountable for the mindful support of safety and health. No job is so important or service so urgent that we cannot take the time to perform our work safely."

On a daily basis, our risks include high voltage and electric power, high temperature, high pressure, equipment under stress, and chemicals. In some cases, multiple risks are present in one laboratory.
All actions require staff to be vigilant, and to operate as one team while looking out for each other.

Our Values—Safety, Innovation, Accountability, Integrity, Service and Teamwork—inspire our actions and further amplify that safety is core to how we operate.

#### **EMPLOYEE SAFETY**

Powertech's health and safety management system has been developed to ensure employees are protected from workplace hazards through the effective development and implementation of health and safety plans, procedures, monitoring processes and continuous improvement activities. Developing a strong culture of safety and delivering superior safety performance are achieved by having a dedicated and engaged leadership team who work with a committed and skilled workforce. Through the Occupational Health and Safety Program, Powertech's operations emphasize the importance of occupational safety, risk management, emergency preparedness and environmental performance, along with a stringent

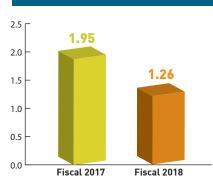
focus on safety. The Joint Health and Safety Committee, with representatives from across the full breadth and width of Powertech, ensures that concerns are raised, investigations completed and recommendations implemented. The full leadership team meets monthly to review the safety performance as well as planned actions.

Core to safety is staff training. Every staff member completes an annual assessment of needs and is assigned training. Training spans both computer as well as actual hands-on requirements.

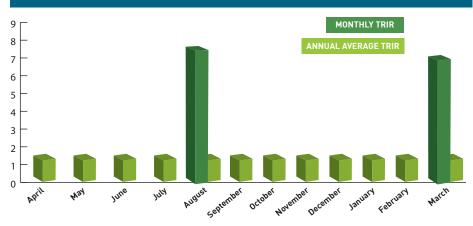
# BEST SAFETY PERFORMANCE ON RECORD

Overall safety performance in Fiscal 2018 was self-assessed as excellent, with significant reductions in workforce recordable injuries. Further, no serious injuries were recorded for the year. As of the end of Fiscal 2018, our Total Recordable Incident Rate (TRIR) dropped significantly and improved by 35% compared to the previous year. Core to this achievement was an increased focus on risk assessment and safety training. The following tables showcase the improvements.



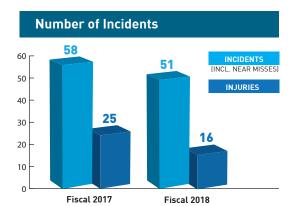


#### Total Recordable Incident Rate (TRIR) - Fiscal 2018



The TRIR is a standard industry measure to showcase safety performance and includes all injuries beyond a first aid treatment (includes medical treatment case, restricted work case, lost workday incident and fatalities). In Fiscal 2018, there were two cases of medical treatment that averaged on a full 12-month period to a TRIR of 1.26. These medical treatment cases were related to hand injuries from activities involving cutting and equipment use. Corrective actions included use of specific cutting tools, better awareness for the job hazards, caution statements and use of cut-resistant gloves when needed.

With the focus on safety awareness, effective walkthrough inspections, and a culture of incident reporting without any repercussions for the employees, the Powertech staff reported a total of 51 incidents in the Fiscal 2018. This open reporting culture helped the organization to capture many incidents at the near-miss level and therefore avoided actual injuries or cases of occupational illness. The results show that actual injuries at Powertech reduced by 36% in Fiscal 2018 when compared with the total injuries reported in last Fiscal 2017.

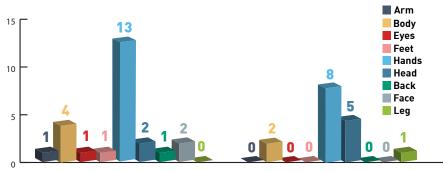


Included under incidents are injuries and near-misses. Most of the injuries lead to first aid treatment as shown in the figure below.

# Injury Severity 25 20 15 10 Fatality Serious Lost Medical Injury Workday Treatment Aid

The injuries are further broken out in a separate graphic shown on the following page. Though a decrease is observed, hand injury still remained as the highest recordable injury, leading to a focus on selection of

### Fiscal 2018 Injury Types



Fiscal 2017 Injuries

Personal Protective Equipment (PPEs) and specialized cutting tools. Employees were encouraged to discuss the task-specific use of gloves with the Safety Team, and the requirements around cut level protection and dexterity were evaluated using employee feedback on samples of the gloves.

In summary, we witnessed a 100% decrease in injury severity from Fiscal 2017 to Fiscal 2018. Further, most injuries did not require more than local first aid treatment. In Fiscal 2017, there were 19 person-days lost due to injury, whereas in Fiscal 2018, there were

Fiscal 2018 Injuries

none. In looking at the types of injuries, 50% of the injuries were hand-related, and in particular, use of appropriate gloves was the underlying factor. The typical incidents of hand injury involved activities such as pulling out ground wires, wire cutting, moving metal boxes, and removal of spring clamps. There were two medical treatment cases in Fiscal 2018 (i.e., the impacted employee was taken to hospital).

#### **BUSINESS CONTINUITY**

Along with our intense focus on prevention, we continue to enhance our emergency preparedness and response capabilities. A Business Continuity Plan is being put in place to enhance our Emergency Response Plan. All of our Emergency Incident Commanders have undergone emergency response training, and we plan to conduct two emergency response exercises in Fiscal 2019.

# SAFETY ACCREDITATION – OHSAS 18001/ISO 45001

Powertech has set the objective of being recognized as an OHSAS 18001/ISO 45001 organization. This complements our existing ISO 9001 and ISO 14001 accreditation. It is another demonstration of our commitment to safety. To this end, we have completed an external audit and identified the gaps in our safety system. These gaps are being addressed with this effort, started in Fiscal 2018, for completion in Fiscal 2019. Internal safety audits have been completed, and non-conformances are being addressed. We are aiming for a formal external audit towards the end of fiscal 2019. Depending on results, formal accreditation may be in Fiscal 2019 or 2020.



We are committed to attracting and retaining innovative team-players and to making sure they are supported through a combination of formal

and informal training. As Powertech addresses some of the more challenging opportunities facing the power and automotive industries, our staff are being given the opportunity to both exercise and expand their skills. Besides the on-the-job development, we encourage every staff member to



have a constantly evolving Personal Development Plan (PDP), which is reviewed every six months. In short, we invest in our staff in order to strengthen our organizational capability and to ensure we are ready for our industries' and customers' needs.

The process of the PDP program also incorporates continuous coaching, feedback and progress assessment throughout the yearly cycle. In Fiscal 2018, 79.5% of Powertech staff took part in the PDP program.

Employees are responsible for managing their own careers, and we offer many tools to assist employees in their career development. In Fiscal 2018, our employees logged 9762.9 hours in training, with an average of 52 hours of training per employee. Around 175 employees took part in some form of training in Fiscal 2018.

To ensure continuity, an active succession plan is in place for every employee and is reviewed annually. This plan is input into staff PDPs.

Performance management at Powertech is an ongoing process in which supervisors and employees work together to:

 Set individual development and business goals.

- Ensure goals are aligned with overarching business performance objectives.
- Measure progress toward goals.
- Identify developmental needs required to achieve goals.

#### **SOCIAL—DIVERSITY**

Powertech takes pride in the fact that we attract staff from around the world. Over 40% of our staff is foreign born. Valuing everyone's contribution isn't just something we simply talk about; it's what we put into practice each day. We believe that diverse opinions, ideas and perspectives are what fuel innovation throughout Powertech. Everyone plays an important role in giving our company a competitive business advantage. Consistent with our focus on excellence, we continue to embody diversity and inclusion.

# SOCIAL—EMPLOYEE HEALTH & WELLNESS

Besides a comprehensive health benefits plan, Powertech offers multiple programs to help employees achieve better health and wellness. Our Health and Wellness Program is intended to educate, encourage and challenge all employees to improve their overall well-being through nutrition, physical activity, stress management and biometric screenings.

Powertech draws on BC Hydro's
Employee and Family Assistance
Program (EFAP), which offers
immediate, confidential support to
assist with critical life problems and
challenges. Employees and family
members can receive support over the
phone, in person, online or through
a variety of issue-based health and
wellness resources.

Powertech has a vibrant, employeemanaged Activity Committee, which arranged 36 activities in Fiscal 2018, ranging from cultural (e.g., Kids Christmas Party, BCH Hockey Tournament, Halloween, etc.), to social (e.g., Lunch Days, Family Summer Barbeque, United Way Bake Sale, etc.)



to health related (Pilates, Vancouver Sun Run, Infant and Child CPR, Bike to Work etc.) activities. Under the leadership of the Activity Committee, Powertech has a state-of-the-art gym on campus, open at all times to staff. Staff are actively encouraged to use the gym augmented by organized sessions such as Pilates, boot camp, etc.

The Health and Wellness program offers a wide range of events and activities, such as Bike to Work Week, where individuals and teams earn points for physical activity, track their progress and challenge others to increase their level of activity. The Fiscal 2018 Health and Wellness campaign focused on mindfulness, which connected both mental and physical wellness, and addressed fatigue, distractions and stress.

# SOCIAL RESPONSIBILITY— SUSTAINING COMMUNITY ENGAGEMENT

Powertech values its community relationships and strives to be a safe and responsible employer, neighbour, partner and operator. Powertech is proud of its enduring relationship with the City of Surrey, and the city holds

Powertech up as an example of a local firm, with a significant global brand name and reach, which attracts highly skilled individuals to work in Surrey.

#### **COMMUNITY INVESTMENT**

Powertech staff are generous with their time and money. Powertech offers our employees the opportunity to amplify their donations to social and community causes that they care about through donation matching from Powertech. In Fiscal 2018, employees across Powertech supported several initiatives through the United Way such as improving life locally, across Canada, community food banks and development charities working across the world. In Fiscal 2018, Powertech and staff donated \$43,437.90 to the United Way, with Powertech providing 50% of this in matching funds. Further, many staff at Powertech donate time and perform volunteer activities within their communities.

#### THE GREEN TEAM

Trees within the built environment provide numerous environmental, economic and social benefits to commercial firms and residents alike.

Powertech's Green Team is dedicated to the protection, improvement and addition of trees within the urban setting. Each year the Green Team encourages staff to bring their families and friends out to participate in Arbor Day, a worldwide event where individuals plant trees in their local community.

#### Bike to Work Week

Powertech annually participates in the Commuter Challenge, a nationwide program implemented to encourage sustainable commuting. Each year the Green Team registers and takes the lead in the Bike to Work Week event. In Fiscal 2018, Powertech cycled a total of 863km in 1 week, and finished 4th in the BC Hydro Lower Mainland standings.

#### Powertech Garden

In Fiscal 2017, the Green Team set up a small garden on campus consisting of three soil beds available to be used by Powertech employees. Since then, the garden has grown immensely and has more than nine garden beds that grow a variety of fruits, vegetables, herbs and flowers; all available to be enjoyed by Powertech staff.







# ENVIRONMENTAL MANAGEMENT SYSTEM

Powertech has an Environmental Management System (EMS) that ensures both negative and positive impacts on the environment are recognized and managed. Powertech's EMS is the framework around the processes put in place at all levels of the company to meet its environmental regulatory requirements and policy commitments. The EMS has been in place at Powertech for more than 15 years, and Powertech is continually striving to improve its environmental performance through innovation and dedication.

#### **ENVIRONMENTAL POLICY**

Powertech's commitment to the environment is described in its Environmental Policy. This policy commits Powertech to meet all legal requirements as well as its own environmental commitments that aim to exceed legal requirements where it makes business sense. Through the policy, Powertech commits to:

 Manage its operations in a manner that minimizes spills, pollution, waste and consumption of resources across the life cycle of materials, products and services.

- Demonstrate respect for the environment and commit to meet or exceed compliance obligations.
- Work at continually improving our environmental performance and conducting business with full transparency by discussing our operations, services and products with all employees and interested parties.

The success of Powertech's environmental management system requires commitment from all levels and functions within the organization.

The Environmental Policy establishes accountability for environmental management. Powertech's senior leaders are accountable for the effective implementation of the environmental management system within their respective sectors. All employees are accountable for environmental performance and compliance within the scope of their accountabilities, and are encouraged to constructively challenge actions that may have adverse impacts on the environment.

Powertech's Environmental Policy is available at www.powertechlabs.com.

# SIGNIFICANT ENVIRONMENTAL ASPECTS

Each year we thoroughly review and update our Environmental Aspects Register. This register identifies our key risks and our response. In summary, the following are significant environmental aspects recognized by Powertech pertaining to our daily operations. These aspects are addressed and prioritized by Powertech's environmental management system.

- Chemical emissions to water
- Air emissions
- Spills and leaks
- Handling of polychlorinated biphenyls (PCBs) on campus

# ENVIRONMENTAL PERFORMANCE

Powertech's environmental performance was self-evaluated as excellent in Fiscal 2018. There were no significant environmental events, and performance was equal to, or better than, the identified target for all key measures. Moreover, Powertech's performance demonstrated improvement in the following indicators: carbon dioxide emissions, spills reaching the natural environment, water consumption, natural gas consumption and energy consumption.



All environmental performance targets for Fiscal 2019 remain either unchanged from Fiscal 2018, or have been revised upwards, where appropriate, to recognize improved levels of operation.

#### ISO14001:2015 REGISTRATION

In 2017, Powertech re-registered under the ISO14001:2015 standard. The transition has improved alignment and consistency across the organization, streamlined the work required to maintain the environmental management system (alongside our matching ISO 9001:2015 accreditation). This also helps as we embark on journey to achieve OHSAS 18001 (more recently renumbered as ISO 45001).

#### **ENVIRONMENTAL COMPLIANCE**

Powertech complies with many environmental requirements detailed in statutes, regulations, bylaws, licenses, permits and approvals spanning federal, provincial and municipal requirements. Powertech considers regulatory compliance to be a minimum, non-negotiable standard and strives to improve performance year after year.

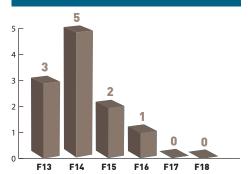
Environmental awareness throughout the company has increased greatly as a result of increased environmental training to ensure all employees understand the potential environmental impacts of their work. This awareness, combined with an overhaul and increased focus on environmental incident reporting of minor spills, has seen the number of incidents reported increase in the last few years. The occurrence and root cause analysis of these minor spills are seen as opportunities to improve our performance. As a result, Powertech has not had an oil spill of a reportable quantity since Fiscal 2015, and has not had a spill reaching the natural environment since early Fiscal 2016.

The graph to the right shows the number of spills reaching the natural environment. Powertech has grown to twice its size since 2012, yet overall spills have shown a steady decrease since Fiscal 2014.

Powertech self-identified six environmental infractions in Fiscal 2018, which were reported

by Powertech to the appropriate federal, provincial and/or municipal agencies as required (all to the Environmental Emergency Program -EEP). Of these infractions, four were due to refrigerant gas leaks (all 10kg - 34kg), while the other two were detected by our active stormwater monitoring program. Powertech reviews all infractions to learn from the events and takes corrective actions to prevent recurrence. Trending and analysis of regulatory compliance is also conducted, with a formal review on a monthly basis to identify opportunities for improvement.

# Spills impacting or potentially impacting natural environment\*



\* escaping Powertech's secondary containment and yard.



#### **LEAK & SPILL MANAGEMENT**

Powertech recognizes that our most significant environmental hazard is leaks and spills. Leaks are mostly from our refrigeration systems, while spilled substances are primarily from oils used during testing. To this end, Powertech places considerable effort and invests significant resources to ensure the risk of leaks and spills to the environment is managed effectively. We remain committed to improvements that ensure that leaks and spills don't impact the environment. In short, the focus of Powertech's spill management program is prevention. In Powertech's operations, prevention of incidents occurs through the following:

- Each laboratory and work site conducts assessments to evaluate the risk of spills and maintains processes for spill prevention.
- All equipment with the potential to cause a spill undergoes ongoing visual inspection, monthly formal inspections and regular preventative maintenance, which is tracked by our online equipment manager software.
- Past spill events are reviewed and analyzed for lessons learned and actions for the future.

- A design hazard and operability study is conducted prior to commissioning any equipment or new laboratory.
- As of 2018, all chemicals on site are now tracked by our online chemical tracking system. This ensures that information on chemicals, quantities, locations in which they are stored and any environmental and health and safety risks associated with them are easily accessible to anyone who needs it.
- Potential consequences from spills are minimized by selecting less hazardous materials where possible and by minimizing the volume of all chemicals stored on site.
- Secondary spill containment structures are in place throughout the campus, and additional secondary containment is being planned as appropriate.
- Training and procedures for handling and storing chemicals are required by all appropriate laboratory staff as well as shipping, receiving and facility staff to reduce the likelihood of spills.
- When a spill does occur, emergency response procedures are in place to minimize the potential adverse

- impacts to the environment. The Safety and Environmental team and all laboratory staff are trained for such events.
- Powertech also has procedures in place to ensure we meet our legal obligation to report spills to government agencies within the required timelines.
- When placing contracts, Powertech selects only accredited and environmentally responsible suppliers and waste contractors.
- Routine housekeeping actions focus on proactively removing unwanted or unneeded oil, chemicals and equipment from campus as a way of reducing the potential for spills and leaks.
- Underpinning all our actions: we execute our operations in a manner that maintains our commitment to observe the highest safety standards as well as sound and responsible environmental stewardship.

Having said this, Powertech had six spills that were reportable to the Environmental Emergency Program (EEP) in Fiscal 2018. Over time, Powertech's spill performance has demonstrated continual

improvement, and the Fiscal 2018 performance improved on previous years. Looking back over the last five years:

- The leaks are centered on our large refrigeration systems. The focus is on routine inspection to catch leaks earlier than in the past, making sure we have sensors that detect leaks and to replace equipment that habitually leaks.
- The most frequent spills on campus have been various oils into secondary containment structures.
   Nevertheless, more can be done: the ongoing focus is to ensure that oil-filled equipment is housed within secondary containment and also, seals and gaskets are appropriate for the purpose.

Finally, turning to management of sulphur hexafluoride (SF,) - an extremely effective insulating gas with a notorious reputation as a greenhouse gas. The power industry makes extensive use of SF4, and as a test lab, Powertech actively works with SF, as a standalone gas or when used within equipment. In the last fiscal year, there were four releases of SF, and all releases were below reporting limits (all were in the range of 1.3 - 3.1kg). Further, while SF, gas may be released when testing power equipment to destruction, the underlying objective of testing is to ensure that the equipment will be safe and reliable when used by the power industry. In essence, while our testing may release SF4, the long-term objective is to ensure that the equipment meets industry requirements over its full life-cycle.

POLYCHLORINATED BIPHENYLS
MANAGEMENT

Polychlorinated biphenyls, commonly known as PCBs, are synthetic compounds that were manufactured for use in industrial applications until the late 1970s. Since then, actions have been taken to phase out PCBs due to environmental and health concerns. PCBs are recognized as a carcinogen.

Power equipment on campus have PCBs, and the plan is to be PCB free by the end of Fiscal 2019. In meeting this self-imposed objective, Powertech is taking three broad actions:

- Replacement of equipment containing PCBs.
- Reconditioning of PCB-contaminated oil using Powertech's in-house developed online PCB removal technology. To learn more about this technology, visit Powertech website: www.powertechlabs.com.
- Drain, flush and refill equipment containing PCB-contaminated oil.

Since 2015, Powertech has been implementing an active plan to steadily reduce PCBs from campus each year. In Fiscal 2018, 20 transformers were removed from site, weighing approximately 5000kg and were disposed of responsibly by BC Hydro. This removal amounted to approximately 1548L of PCB-contaminated oil removed, far exceeding the Powertech's self-imposed annual target. Powertech

remains on track to be PCB free by the end of Fiscal 2019.

#### **HAZARDOUS WASTE**

Powertech has established programs to manage its hazardous waste in accordance with provincial and federal regulations. Powertech's hazardous waste includes items such as oils and lubricants, solvents, batteries, paint and laboratory chemicals. Within practical limits, Powertech strives to minimize the amount of hazardous waste that is both generated and stored on campus, and actively pursues a program of reuse and recycling when the generation of waste cannot be avoided. We use only appropriately accredited waste contractors and, as part of our ISO14001 program, we ensure that hazardous waste is disposed of appropriately and responsibly by insisting on a documentation detailing treatment or disposal methods.

#### **STORM WATER MANAGEMENT**

The Powertech campus has a robust system of storm-water catch basins. The drains in higher risk areas contain sediment traps and oil/water separators. The entire system is mapped; drains are numbered, actively inspected, and sampled on a monthly basis. Our in-house full chemistry laboratory ensures that we have ready access to both the skills and equipment to perform this activity. Quarterly samples are collected and analyzed from selected catch basins. All sampling and testing complies with BC Reg 63/88: Hazardous Waste Regulations, Schedule 1.2 (Standard for Discharges to the Environment or to Storm Sewers). Further, all sinks in the chemistry and other labs working with chemicals discharge to our chemical

lift station (which ensures that chemicals are trapped and assessed within the campus before being discharged to the municipal system). This chemical station is visually inspected monthly and analyzed quarterly to ensure compliance with the Hazardous Waste Regulations, Schedule 1.2 (Standard for Discharges Directed to Municipal or Industrial Effluent Treatment Works).

In addition to our preventative maintenance and good housekeeping practices related to all chemicals stored on site, chemicals are stored in secondary containment having a minimum 110% capacity of the primary stored container. Finally, should a spill occur and enter the stormwater catchment system, shutoff valves are available at strategic locations on the site to limit the impact. Further, all six identified highspill-risk zones on site are equipped with spill kits. All staff working within areas of high-spill risk are trained in spill response. As backup, Powertech retains a third-party emergency response contract with a spillage cleanup contractor.

When viewed together, all the actions listed above work to ensure a robust spill response capability, which is designed to minimize any environmental impact from an uncontained chemical spill or leak.

#### **RESOURCE USE**

#### **Energy Efficiency**

While energy efficiency continues to be a "work in progress", Powertech has made steady progress in improving its internal energy efficiency. This improvement includes:

- Equipment upgrades.
- Replacing windows with more efficient double-pane glass and improving the insulation of the building envelope.
- Replacing incandescent lights with LED lights in areas undergoing tenant improvement.
- Improving power factor in certain areas of the campus by the installation of capacitor banks.
- Adding zero emission vehicles to the fleet.

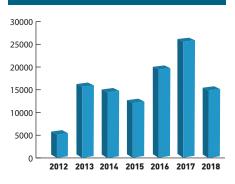
At the end of Fiscal 2018. Powertech has three zero-emission vehicles in its fleet: two electric vehicles (EVs) and one hydrogen fuel cell vehicle. There is one EV DC Fast Charger (DCFC) and four level 2 chargers on the campus, all of which are available for public use. Powertech estimates that, together, these chargers have displaced >10,000L of fuel and kept 25 tonnes of CO<sub>2</sub>eq GHGs out of the atmosphere. Powertech generates hydrogen on campus (for fueling vehicles and for laboratory use) using electricity from renewable sources (BC Hydro). In late Fiscal 2018, Powertech began development of a larger EV test park that will include additional EV chargers.

In Fiscal 2019, attention will turn to rebalancing the HVAC system to optimize building temperatures and reduce the stress on both heating (natural gas system) and cooling systems (electric system). Further, attention will turn to replacing existing lighting with LED lighting.

#### Water Use and Conservation

As Powertech has doubled in size since 2012, it should be expected that

#### **Water Consumption**



water consumption will increase. In addition, a number of open-loop water systems (i.e., water is not recycled or reused) are in operation, which increase our water consumption. In particular, two such open-loop systems were identified for upgrade: mechanical laboratory and highpressure laboratory. To date, the mechanical laboratory has been upgraded to a closed system, and the high-pressure laboratory upgrade is under review. The upgrade in the mechanical laboratory alone accounts for most of the reduction in water consumption from Fiscal 2017 to Fiscal 2018.





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