



Resourcing the world



# Veolia North America

## SUSTAINABILITY REPORT 2018



Veolia North America



# WELCOME

## A Sense of Responsibility to Our Customers and the World

At Veolia North America, we share a strong sense of responsibility to meet the needs of our customers by delivering environmental, social and economic value.

As the world's largest environmental solutions company, these priorities can be optimized together, recovering resources and making the most of them to maximize economic efficiency and growth. This formula uniquely positions us as a leader in the world's emerging circular economy.

In these pages, you will see first-hand how our unique problem-solving and technical expertise help enable resource recovery and solutions in water, waste and energy. We have been leading this effort for decades, both across North America and the world, putting us at the forefront of enhancing customer value through sustainability.

Our sense of responsibility extends to cities and industries across the continent, whether

it's reducing emissions through combined heat and power, or reclaiming and reusing solvents through industrial regeneration.

By working toward a circular economy across all our activities in the beneficial recycling and reusing of complex waste streams, we make the world a cleaner and more resilient place.

I would like to thank all of our customers and the communities in which we operate for their support and partnership in helping us achieve these goals.

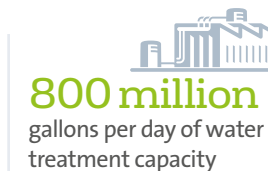
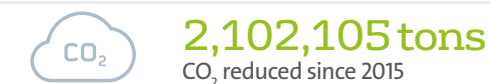
Sincerely,



**Bill DiCroce**  
President and CEO



## BY THE NUMBERS



## OUR KEY PERFORMANCE INDICATORS



## OUR SAFETY GUARANTEE



## SUSTAINABLE MANAGEMENT OF RESOURCES



## FOCUSING ON THE FUTURE



**DEDICATION  
TO OUR  
COMMUNITIES**



**COMMITMENT  
TO THE CIRCULAR  
ECONOMY**

## HISTORY

Founded over  
**160**  
years ago,  
Veolia is an integral  
force in protecting  
the Earth's most  
precious resources.





## OUR SAFETY GUARANTEE



## PUTTING SAFETY FIRST

Veolia's Regeneration Services division is leading the way in Veolia's mission to drive a safer industry.

The division's rigorous safety program gives managers and employees at each of the company's regeneration plants the resources and flexibility to ensure the highest safety standards are being met. The core elements of the program center around strict auditing metrics and positive reinforcement which encourages and recognizes employees for contributing to a safe environment.



Our six sites have accumulated more than

# 11,000

safe days for employees

Plant managers at each of the sites regularly schedule safety meetings in which employees review their processes and analyze their success. In order to prevent minor accidents from becoming significant incidents, employees are given stop-work authority to immediately shut down operations if they identify a hazard or witness an accident taking place.

Employees regularly celebrate safety milestones with lunches and giveaways, while any incidents — no matter how minor — are shared with all locations to provide education on how to keep them from occurring again.

Our safety concerns do not end with our own employees either. We also provide a variety of training programs that cover

sulfuric acid safety, distribution and emergency response. These programs educate end-users, first responders and carriers in how to safely store, use and handle their products. Stringent safety training and continual vigilance helps protect both Veolia's employees and the communities around them.

## GOING ABOVE AND BEYOND FOR SAFETY

## INTERVIEW:

**John Dyer**  
Health and Safety Director  
ESS

Veolia North America's Health and Safety Director John Dyer received the Occupational Safety and Health Administration's Voluntary Protection Programs Participants' Association (VPPPA) Outreach Award in 2018. Over the past 10 years, John has led the campaign for Veolia North America's Environmental Solutions and Services (ESS) business to achieve Voluntary Protection Program status at locations across the United States and Puerto Rico.

### Why did you choose a career in health and safety?

Fifteen years ago the environmental health and safety position became available at Veolia and I interviewed for the role. I've trained and guided many employees since then and haven't looked back. I love hearing an employee tell me that while at home they applied a work safety training and used the proper tools to complete the task.

### What has been the greatest challenge?

This role requires me to not only concentrate on my own health and safety but also the health and safety of more than 130 employees. In addition, I'm

also focused on preventing or assisting with potential environmental and transportation incidents.

Being in the EHS manager role for more than a decade has challenged me to find a way to make safety training fun, interactive and personal while designing new ways to train both new and senior employees.

### What is your most recent accomplishment?

In 2018 I had the honor of receiving two awards – the National VPP Outreach Award and the VPPPA Region III Mentor of the Year Award.

I mentored 125 employees across six Veolia ESS sites through the use of the Veolia VPP Gap Analysis program which helps identify areas of safety improvement in alignment with VPP qualifications. The program also encourages employees to share ideas and lessons learned from previous VPP sites and applying them to new sites working toward the certification.

While I accepted these awards, these achievements represent Veolia's commitment to safety!



John Dyer receives the VPPPA Outreach Award





## SUSTAINABLE MANAGEMENT OF RESOURCES

### TURNING BIOSOLIDS INTO NATURAL FERTILIZER

Fifteen years ago, the biosolids in Toronto's wastewater were incinerated and sent to landfill. But in 2001, the city decided to use its wastewater to provide a sustainable product for the local agricultural market.

The result was Nutri-Pel, a biosolids-based commercial fertilizer which contains nutrients and organic matter that improves the physical condition of soil.

Distributed as pellets, Nutri-Pel holds water and nutrients, resulting in improved yield and growth characteristics for local farmers.

To create it, Veolia operates and maintains the city's pelletizer plant, taking 50 percent of the Ashbridges Bay Wastewater Treatment Plant biosolids and treating them to provide some 25,000 tons of fertilizer a year.

The pelletizer plant replaces a lengthy process that previously produced dried biosolids through the use of open-air drying beds.

With Veolia's help, the facility now operates within a completely enclosed building, equipped with state-of-the-art controls that prevent the release of odors and reduce reliance on drying beds along a local expressway.

The plant incorporates the latest advances in thermal technology, employing an indirect drying system that gently heats the biosolids, removes water and destroys harmful bacteria and pathogens. In addition to being used in Nutri-Pel, the biosolids are also used in other land and mining applications, with 98 percent of it repurposed for beneficial reuse.

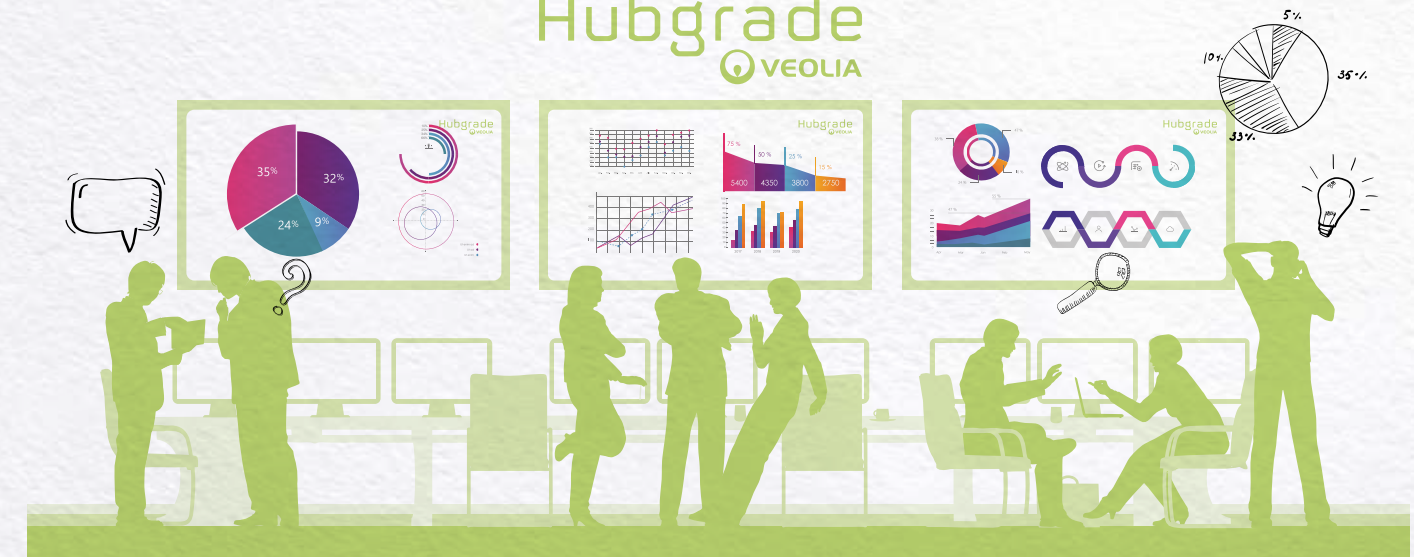


### THE BENEFITS OF NATURALLY OCCURRING, ORGANIC FERTILIZERS

- ✓ Slow-release of naturally occurring nutrients ensures evenly grown, green grass and healthy soil and plants
- ✓ Nutrients available during the growing season when plants need it most
- ✓ Effective, yet economical solution compared to chemical fertilizers
- ✓ Sustainable solution uses biodegradable, organic product from wastewater treatment process
- ✓ Recycling natural nutrients for fertilizer use reduces waste and recovers value from wastewater treatment process
- ✓ The number of trucks on the road that were hauling sludge was four times bigger than now since one Nutri-Pel load equals four truckloads of sludge, thus reducing our environmental footprint even more.

### SMART SOLUTIONS FOR ENERGY CUSTOMERS

Hubgrade  
VEOLIA



In an age where technology, data and advanced analytics are transforming every sector of the economy, Veolia provides smart business solutions for its energy customers. Veolia's Hubgrade facilities serve as monitoring and analytics centers to improve performance and resource management for hundreds of clients across North America.

Hubgrade is Veolia's concept to improve resource efficiency,

combining real-time monitoring and remote management with on-site technician deployment. The goal is to help clients move toward a circular economy by measuring, analyzing and optimizing water, energy and material flows in real time.

Veolia now has over 20 Hubgrade centers around the world, including three in North America (Boston, San Francisco and Baltimore) that provide a broad

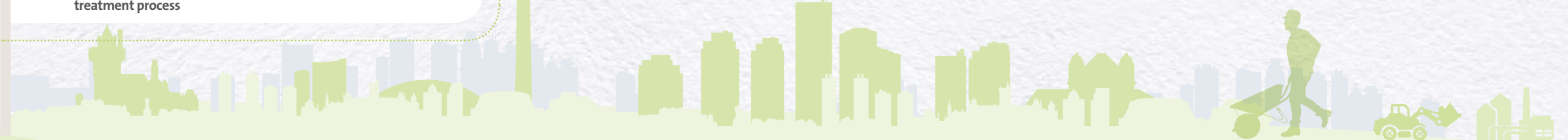
range of solutions for large-scale building portfolios and campuses.

Building owners and managers are receiving the quality data, technology flexibility and actionable data analysis they need to maximize efficiency and conserve resources. This is achieved by using innovative technology, including advanced metering technology, sensors and smart building software platforms.

Through this comprehensive optimization, Veolia is helping reduce the consumption of precious resources.

**15,000** tons

of CO<sub>2</sub> emissions savings in 2018 by optimizing energy services for buildings.





## SUSTAINABLE MANAGEMENT OF RESOURCES

### OPERATOR PRIORITIES PROGRAM

Veolia North America is committed to its operational excellence program and recently launched the Operator Priorities Program to engage its sites at the local level. The program links the company's global sustainability targets to the day-to-day work of their operators.

With 133 sites participating in 2018, the program identifies areas of efficiency or optimization within the operations of each site. Plans are then evaluated, tracked and updated regularly to ensure viability, execution and a performance-driven culture.

In one instance, Veolia's Kneeland energy plant in Boston improved its efficiency by capturing cooling water to drive the plant's air compressors. Rather than releasing water to a sewer, they installed additional piping which redirected spent water back to the boilers to be reused in the makeup water of the system.

By determining actionable goals, and measuring data and performance, Veolia multiplies its successes — like the Kneeland facility's — to save its clients more water, protect precious resources, improve efficiencies and enhance profitability.



### PRODUCT STEWARDSHIP AT VEOLIA

Making sure Veolia's products and services have a minimal impact on the environment is deeply important to Veolia North America. We are able to transform waste into reusable material, helping our customers work towards a circular economy.

#### Solvent Recycling with Corteva

Organizations and industries generate solvents that can either be disposed of as waste or recycled into a usable resource. Using recycled solvents supports a circular economy approach and has environmental advantages. Carbon emissions are avoided, water usage is decreased and reliance on a finite supply of natural resources is reduced.

A leader in manufacturing and materials technology, Corteva has taken a leading role in supporting the development and implementation of the circular economy by converting items formerly thought of as "waste" into new products.

Located in Pittsburg, California, Corteva works closely with Veolia in recycling the site's solvents through chemical reclamation.

Through a proprietary process, Veolia has successfully treated the solvent and met the chemical specification to resell the material for reuse, resulting in the return of 7.2 million pounds of solvent otherwise destined for incineration.

#### Lamp Recycling in Pickering, Ontario

In November of 2018, Veolia's Ontario recycling facility celebrated the completion of its first year in operation. The state-of-the-art facility processed 3,750,000 mercury-containing light bulbs since opening, equivalent to 1,200,000 pounds.

Veolia Pickering's equipment crushes and separates expired mercury-bearing light bulbs like compact fluorescents into several components such as metal,

glass, phosphorus powder and mercury. Ninety-nine percent of the glass and metal wastes are recycled locally by Veolia. The mercury-bearing phosphorus powder is transported to Veolia's Port Washington, Wisconsin, facility for recycling.

In addition, Veolia serves the lamp recycling needs of Ontario by being an approved processor for the Recycling Council of Ontario's Take Back the Light program.

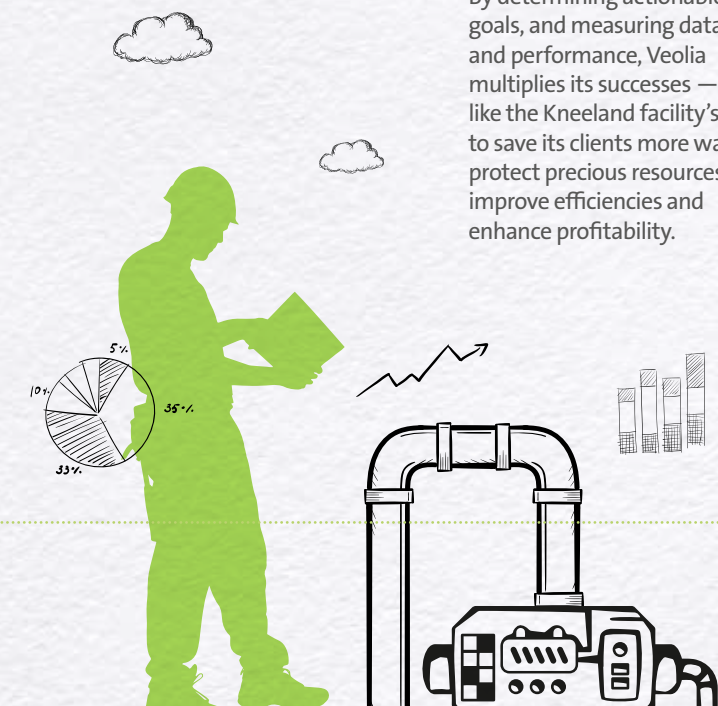


Glass:  
**1,110,430**  
pounds

Phosphorus powder:  
**28,959**  
pounds

Aluminum:  
**20,528**  
pounds

Mercury:  
**292**  
pounds





FOCUSING ON THE FUTURE



LEADERS OF TOMORROW

INTERVIEW:



**Bob Cappadona**  
President and COO  
ESS



**Peter Kavanaugh**  
Project Lead  
ESS



**Michelle Helm**  
Health, Safety and  
Security Manager  
Municipal & Commercial

Veolia Environmental Solutions and Services (ESS) President and COO, Bob Cappadona; Project Lead Peter Kavanaugh; and Health, Safety and Security Manager Michelle Helm discuss the company's development program, Leaders of Tomorrow

**What is the Leaders of Tomorrow program?**

**Bob Cappadona:** Leaders of Tomorrow is an innovative development program for Veolia's future leaders. Participants identify ways to improve business efficiencies and focus on applying their skills to a Veolia project. Around 15 employees, like Peter and Michelle, express a strong interest in learning the business, excelling in their area of expertise or developing specific leadership skills.

Senior leadership members, such as myself, review the employees put forward by managers across the company and decide on the participants for that year. Then, we pair each participant with an external coach and an internal mentor.

**What is your area of expertise at Veolia?**

**Michelle Helm:** I'm the Health, Safety and Security Manager for our Municipal & Commercial line of business in Milwaukee, Wisconsin. This includes supporting 200+ employees in conjunction with our clients' 100+ contractors.

**Peter Kavanaugh:** I serve as Project Lead for ESS's Northeast region and provide project management direction to key clients. I oversee all aspects of a project including setting deadlines, assigning tasks and completing projects on time, within budget and within scope.

**Describe your LOT project**

**Michelle:** My project focused on creating awareness internally and externally

around diversity and inclusion at Veolia. I wanted to establish our company as a leader in the community that supports a diverse and inclusive culture.

**Peter:** I wanted to improve safety through communicating a tangible message. Safety is paramount at Veolia and core to our business. I created a key chain for employees across the Northeast region that served as a token for us all to complete our jobs safely so we could make it home to our loved ones. We've also established a daily safety reminder across the district.



Veolia North America is also invested in the future development of students in the communities in which we operate. In 2018, we hosted over 100 girls and young women for International Women's Day events in North American cities to learn from and interact with female role models across Veolia. Students listened to employees chat about their career journeys and being female in a science, technology, engineering and mathematics-based industry.

**How have you benefited from LOT?**

**Bob:** Being a senior leadership team member, I enjoy being involved in the selection process and seeing how employees grow from the inception of their project to its completion. When companies like Veolia invest in their employees and

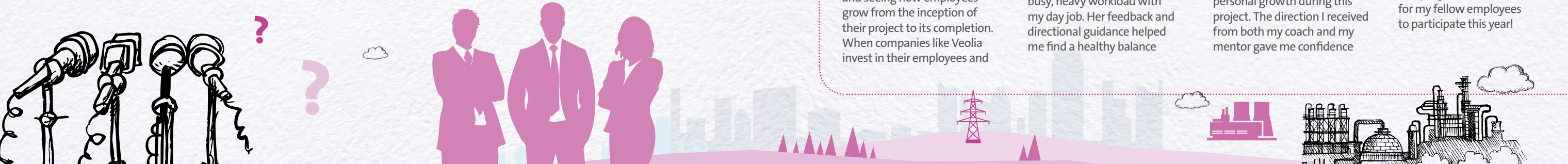
support their development, the business improves drastically.

**Michelle:** My coach held me accountable for my project, especially while having a busy, heavy workload with my day job. Her feedback and directional guidance helped me find a healthy balance

between my project and day-to-day responsibilities which is important to do as a leader.

**Peter:** I definitely learned more about myself and noticed personal growth during this project. The direction I received from both my coach and my mentor gave me confidence

to express to a wider audience the importance of safety to coworkers as well as family and friends. I'm grateful that I was a part of this experience and program, and am excited for my fellow employees to participate this year!





## DEDICATION TO OUR COMMUNITIES



## VEOLIA'S COMMITMENT TO PUERTO RICO



**Patrick Meyers**  
Director, Business Development

When Hurricane Maria descended on Puerto Rico in 2017, it took an enormous toll in terms of human suffering and economic devastation. By the time the storm cleared, it had flattened the island's energy and business infrastructure, with losses estimated at more than \$160 billion.

Over 8,000 businesses were unable to recover from damaged facilities and prolonged outages, contributing to a staggering eight percent drop in the island's gross domestic product output.

One of Veolia's top business development leaders, Patrick Meyers, conducted extensive tours of the island and identified areas where the recovery efforts could lead to a more resilient energy infrastructure. Patrick worked closely with government and business leaders to learn from Maria and find ways to limit the damage when the next storm strikes.

He became so committed to the effort that he moved to Puerto Rico along with his wife and their two golden retrievers.



*This is Odie, one of Patrick Meyers' two Golden Retrievers, who travelled to Puerto Rico with him and his family*

*Veolia's plan to be a long-term partner on the island for microgrid solutions not only includes supplying and installing equipment but also operating and maintaining this equipment for the next 20 to 30 years. We are dedicated to developing sustainable, reliable and affordable energy solutions for Puerto Rico.*

Chief among the company's solutions is microgrid technology which offers energy independence by creating a contained power grid that can provide electricity when the larger national grid fails. Microgrids have proven to be effective for critical institutions such as hospitals or utilities in times of emergency, allowing them to continue operating amid widespread outages.

In response to Maria, many businesses in Puerto Rico, especially within the island's manufacturing sector, have decided to pursue this technology. Patrick and Veolia are working diligently with Puerto Rico in making the island more resilient.



*A woman walks among the wreckage caused by Hurricane Maria on a street in Puerto Rico*

## INDUSTRY AND NEIGHBORS JOIN FORCES

**Beginning in the late nineties, a local company created the Middlesex Community Advisory Panel (CAP) but disbanded in the 2000s.**

When Veolia acquired Middlesex, New Jersey, company Marisol in 2015, there was an important question on Facility Manager Mike Pikulin's mind – how can we build a new relationship with this community? Mike decided to reignite the CAP program.

Why a CAP? A CAP effectively improves communication and understanding between industry and the communities in which they operate. In the 1980's, the Chemical Manufacturers Association, now the American Chemistry Council, developed the concept of a CAP as part of its initiative, Responsible Care®.

**Former Middlesex Recycling Coordinator John Sweeney has been involved with the Middlesex CAP for more than 20 years.**

*"The mere fact that there's still a CAP after nearly three decades highlights the value Veolia puts on its relationships with its communities. CAPs serve as an opportunity for a two-way dialogue where businesses, residents and community officials can swap information and brainstorm ideas."*



*Veolia Middlesex CAP members*

**Former Middlesex Councilman Bob Schueler echoed these sentiments.**

*"Being a resident myself, I'm never far away from what's going on in the town. The CAP helps us learn more about Veolia and neighboring industrial businesses. Mike and his team have always emphasized safety protocol and transparency. We appreciate the opportunity to have a conversation and relationship with the industrial area."*

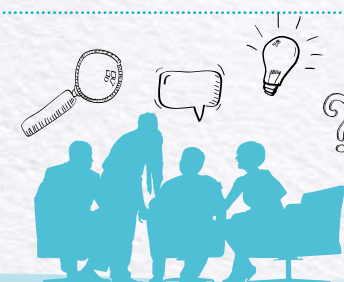
**But the CAP is also a platform for other community members to discuss their projects, not just Veolia or industrial businesses, as Mike explains.**

*"We employ more than 50 local residents at our facility so we like to be involved in as much of the community as we can. This includes having our local police and fire departments share program updates or having the nearby high school robotics team, Flight Crew 747, perform a demonstration."*

*The students share the latest robot they've built, developing their science, technology, engineering and mathematics skills. Veolia is more than just a logo, we are a partner and the CAP supports that message."*



*Local high school robotics team, Flight Crew 747, showcases the robot they built*





## COMMITMENT TO THE CIRCULAR ECONOMY



### GROUNDBREAKING VEOLIA TECHNOLOGY SUPPORTS WATER STEWARDSHIP IN CALIFORNIA

Water is trapped in the same formations as oil and gas. During the production phase, the commingled oil, gas and water is brought to the surface.

The water component, also known as “produced water,” contains impurities even after it has been separated from the hydrocarbons, a compound of hydrogen and carbon.

The management of produced water can become a problem for oil driller operators, the surrounding community and the local ecology.

#### There are solutions, including:

- **Treating and returning water to the oil production process**
- **Injecting into wells — a limited and highly regulated solution**
- **Cleaning and releasing to the surface or into a body of water**

If excess produced water isn’t managed, it can overwhelm an oil drilling operation and cause adverse impacts to the surrounding environment.

That’s why one oil producer in Southern California contacted Veolia.

As a global company, Chevron understands that access to water is essential for communities where the company operates and for the business. Chevron has implemented management systems, processes and standards to manage this critical natural resource.

In fact, the company treated and recycled over two million cubic meters of produced water at its Permian and Delaware Basin operations. In 2018, Chevron also recycled or reused 98 percent of produced water generated by operations in the Appalachian region.

When Chevron’s San Ardo, California, oil field began extracting more than 10,000 barrels of heavy oil each day, the company engaged Veolia’s experts in water treatment technology, engineering and operations to sustainably treat the produced water, helping to preserve and reuse it.

This allows for more water to be circulated back into the production process, reducing overall water consumption, maximizing efficiency and minimizing environmental impact.

Veolia’s innovative application of its OPUS® technology — groundbreaking for produced water management — has delivered exceptional value to Chevron. Veolia developed a sustainable solution that allows up to 50,000 barrels per day of produced water to be discharged to the surface and another 75,000 barrels per day to recycle back into oil production.

By avoiding deep well injection, Chevron has a long-term solution for managing produced water that limits its regulatory risk and supports water stewardship. Veolia is helping Chevron minimize its environmental impact on water-stressed California by returning water to the aquifers.

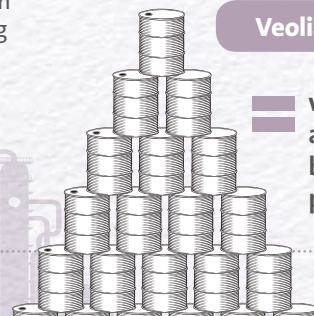


# 125,000

barrels of oilfield produced water a day +

**Veolia OPUS® technology**

**water for wetlands and water recycled back into the oil production process**



### SUSTAINABLE OIL REGENERATION FOR THE FUTURE

For 30 years, Veolia has collected and recycled contaminated oils, oil filters and oily plastics in Quebec from various industries. Until 2013, the materials went to cement plants that reused the recycled materials in their production processes.



**Nathalie Viens**  
Senior Vice President  
Canada East

*“Veolia is a leader in Quebec in the oil regeneration market. Our first and only oil regeneration plant is a solid example of a circular economy, developing the economy while making sure that it is done in a sustainable way for the environment.”*

Fifty-five million dollars and 32 new highly skilled petrochemical jobs later, Quebec now has its first waste oil regeneration plant from Veolia. With a production capacity of 72 million liters per year, and a storage space of 10 million liters of used oil and 3.5 million liters of finished products, the center opened its doors in 2013.

Veolia works in partnership with refineries, manufacturers and distributors of lubricants to create a dynamic and unique circular economy in Eastern Canada.

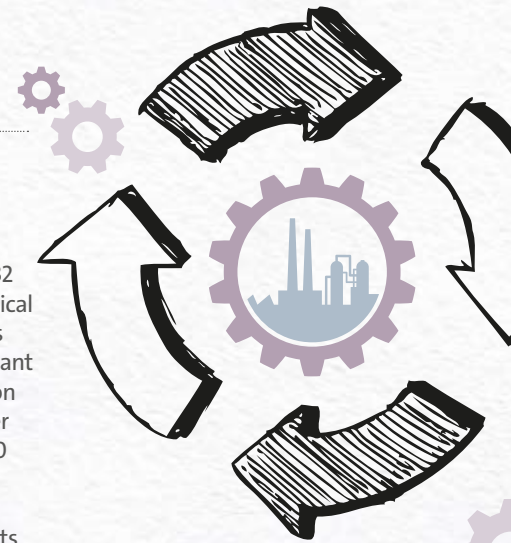
After extracting their waste, the recovered oils are transformed via a distillation process into the following three distinct hydrocarbons:

- **Second generation virgin oil, called vacuum gas oil, is sold on the commodity market and to refineries**
- **Asphalt goes to a nearby company in Montreal**
- **Light vacuum gas oil, goes to a company that produces, distributes and stores heavy fuel oil, bitumen and crude oil**

In addition, the water removed from the waste oil is treated and purified then sent to the city’s sewer, and five percent of the gasoline is used on-site as fuel for the thermal oxidizer.

Veolia also recuperates plastic material which is then sent to a recycler.

Additionally, while the worn oil is regenerated to produce base oil that is blended with new additives and used once again as a lubricant, filters are taken care of, too. Hefty presses compact the filters, collecting the oil that’s left in them — roughly 33 percent of their weight — and leaving nothing at the end of the process but 100 to 125 filter batches turned into 57-kilogram bricks of steel that can be melted and reused.







Resourcing the world

**Veolia North America**

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