OPERATOR DIGEST

WINTER 2019 | NUMBER 139

k EOCP

Quarterly Newsletter of the Environmental Operators Certification Program–BC/Yukon

CAPITAL REGIONAL DISTRICT WASTEWATER FACILITY

It's been a long time coming, but a cuttingedge wastewater faclility is under construction at McLoughlin Point.

TRAINING Profile

2018 Co-op Student of the Year Award Recipient Shelby McFarlane.



OPERATOR Profile

Max Taylor, Industrial Water Treatment Operator at the Brucejack Gold Mine, north of Stewart, BC. P2



OPERATOR DIGEST

The **Operator Digest** is the official newsletter of the **Environmental Operators Certification Program**.

Submissions for publication in the Digest are welcome. Please email them to the EOCP office at eocp@eocp.ca

Changes of address, annual dues, Continuing Education Requirements, exam applications, as well as general inquiries about the program should be addressed to:

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The Environmental Operators Certification Program is a charter member of the Association of Boards of Certification and is a registered society with more than 4,500 active members.

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OPERATOR PROFILE Max Taylor



Tell me how did you become an Operator? I took a bit of an unusual path to becoming an Environmental Operator. Four years ago, I completed an Environmental Engineering degree at the University of Waterloo, which runs as a co-op program. For my first work term, I was at an environmental consulting company where I completed river surveys and groundwater sampling at remote mine sites in northern Canada. I was hooked, and knew from that moment I wanted to work in the mining industry. Unfortunately, I graduated into a mining slump in 2015, but things soon picked up and I was hired to commission and operate a new industrial water treatment plant at the Brucejack Gold Mine, deep in the mountains north of Stewart BC.

How long have you been an Operator?

I've been an Operator for two years. When I started at the Brucejack Mine, I learned water treatment with an old temporary plant that had rented equipment and snow drifts that would reach the roof outside. As the mine continued to be built, I was moved to the commissioning team for a new water treatment plant built to handle the larger flows needed during the mine's life. Now that I have experience, I'm studying for my Level II exam.

What do you most enjoy about the

work? I love that my job has variety. It combines plant operation, lab work, maintenance, and reagent handling. Since our plant is located within the mill building at the mine, I also get to crosstrain in other areas such as grinding and flotation, and get close to the gold ore moving by on the conveyor. There's always lots to learn!

What has surprised you most about your job? There's a lot of technology in

water treatment! Almost everything in the plant can be monitored and adjusted through the control system, and automation does a good job at watching the process. It also means there are lots of components to maintain and calibrate, and even opportunities to get involved with programming.

What do you wish other people knew about Industrial Water Treatment?

It's an incredibly broad field depending on the industry you work in. There are treatment facilities at lumber mills, food processing plants, oil and gas, and at mines. Even at our mine we have three different treatment plants: one that supplies potable water to the mine camp, a biological wastewater plant serving the camp, and the facility I work at that treats water pumped from the underground mine.

What are some opportunities regarding the field of Environmental Operators? It looks like the industry has a bright future for Operators with steady growth and a retiring workforce. Municipalities are still the big employers for water jobs, but I believe more people should consider mine water treatment as an exciting career path. Every mine has unique treatment requirements, and you have to be very self-sufficient when working at a remote site.

What do you do when you aren't working? We have a great work schedule where you work two weeks, then have two weeks off every month. I spend my free time in Squamish, which has amazing trails for mountain biking, alpine hiking, and skiing. I also love to pack my camping gear onto my bike and go touring around the province, it's a great way to see new places and stay healthy at the same time!

MESSAGE FROM THE DIRECTORS AND STAFF



Brian Dean, Chair

Kalpna Solanki, CEO

As we begin a new year with a whole set of new initiatives, we would like to take a moment to outline again the priorities from our 2017-2020 Strategic Plan:

- Deepen existing relationships and develop new ones with stakeholders in British Columbia and Yukon
 - a. Develop relationships with key government agencies, employers, and First Nation communities, and support their knowledge of the water and wastewater sector
 - b.Expand on compliance frameworks with government agencies to increase adherence to pertinent regulations
 - c. Collaborate with agencies in the water and wastewater domain to further the cause of providing safe drinking water and effective wastewater management
- 2. Develop and deliver best of class classification and Operator certification programs
 - a. Expand on new and improved facility classification processes for all systems
 - b.Increase outreach to enable Operators to upgrade their skills
 - c. Facilitate the ability for Operators to write exams when and where they choose
- 3. Measure and communicate our impact to our membership
 - a. Ensure regular marketing and communications processes occur
 - b.Increase outreach to employers and Operators on the value of training and certification
 - c. Report on issues relevant to the sector through newsletters and social media channels
- 4. Build our internal capacity and sustainability



EOCP Directors and staff pose proudly with the ABC Award. L to R Rob Fleming, Stephanie Hall, Kalpna Solanki, Brian Dean, Mike Firlotte and Heather Reynolds.

- a. Communicate customer relationship management processes to facilitate increased use of services
- b. Increase outreach to attract more Operators to the sector
- c. Develop strategic plans every five years that include strategies for the EOCP's sustainability

These priorities will help us chart our path over the next year, and continue working towards meeting the needs of our stakeholders while ensuring the protection of public health and the environment.

Drilling down, some initiatives that we will be pursuing this year, include:

- 1. Development of a compliance framework with the Ministry of Health and Health Authorities, as well as the Ministry of Environment and Climate Change Strategy to ensure increased adherence to regulations;
- Continue with the re/classification of facilities and systems with our new facility classification models, and investigate the feasibility of an online classification model for small systems;
- 3. Review channels of communication with our membership to ensure we reach as many of you as possible;
- 4. Investigate additional membership

benefits for our members such as insurance (health, life, liability), and fitness club membership; and

5. Revise our business plan to ensure the continued sustainability of the EOCP.

Although we do not work with the expectation of accolades or honours, it

is nevertheless wonderful to get recognized for what we do! The EOCP has been honoured by the Association of Boards of Certification Awards Committee as the recipient of its Certification Program Award



- presented to a member certifying authority in recognition of outstanding contribution toward establishing or advancing the certification of environmental professionals.

We will continue to advocate for the protection of public health and the environment in 2019, and look forward to continue working with you.

Brian Dean, Chair Kalpna Solanki, Chief Executive Officer

CAPITAL REGIONAL DISTRICT

McLoughlin Point Wastewater Treatment Project

The construction of the Capital Regional District (CRD)'s Wastewater Treatment Project is fully underway after decades of discussion and planning.

The project is interesting in that the major components of the system are spread out across a few municipalities. Construction began with the state-of-the-art McLoughlin Point Wastewater Treatment Plant in Esquimalt on CRD-owned land at the entrance to the Victoria harbour.

The McLoughlin Point Wastewater Treatment Plant will provide tertiary treatment to the core area's wastewater. A cross-harbour undersea tunnel from Ogden Point to McLoughlin Point was completed in Spring 2018.

The CRD is mandated to meet both federal and provincial regulations to treat their wastewater by December 31, 2020. The project received board approval in 2016. The \$765M investment is being funded by all three levels of government. The capital cost includes the wastewater treatment facility, the conveyance system, and the Residuals Treatment Facility. Construction began in the spring of 2017 and all of the project components are scheduled for completion by the end of 2020.

Federal and provincial regulations require a minimum of secondary treatment, but the CRD is going above that and will implement tertiary treatment, one of the highest levels of treatment, with an optional upgrade built in for UV treatment as well. When complete, the plant will process an average of 108ML per day, with capacity to accommodate future population growth. It will be fully automated and staffed 24/7. The operations and maintenance building is planned to be certified LEED Gold.

Primary treatment consists of a conventional settling tank as well as a Densadeg plate settler to account for the high flows expected from storm water. Primary effluent will be finely screened to 2mm before moving through the Moving Bed Biofilm Reactor (MBBR) and Biological Aerated Filter (BAF). Secondary effluent will then pass through a 5-micron disc filter, which will reduce pharmaceuticals, hormones, microplastics and other



contaminants. Tertiary-treated effluent will flow to an ocean outfall, 2km from shore, 60m deep.

The CRD analyzed many options for treatment. Footprint was a big driver once the location was selected. Everything at the facility is high rate, which makes for a very high-efficiency facility and good use of space. The preliminary design process included both a climate change and lifecycle analysis, focusing on overall impact and energy efficiency.

The two influent pump stations, Macaulay Point and Clover Point, are not located at the facility; the headworks are located approximately 8km from the plant. They contain screening and grit removal before wastewater is conveyed to the treatment plant. The treatment plant will house an onsite lab with dedicated technicians. All analysis will be done and certified onsite.

One of the most interesting aspects of this facility is that the solids handling

components of the process is at an entirely different location, 19.3km away. The decision to house the residuals processing at the existing Hartland Landfill was the outcome of a triple bottom line approach, with a major driver being physical space constraints at the McLoughlin Point site. The treatment plant and residuals treatment facility will be connected by a residual solids conveyance system which consists of three pump stations.

CRD project engineers worked with the EOCP to pre-classify the facility. Preclassification is available to any facility undergoing a major upgrade, or a new facility that is in the design process. The cost is \$50+GST and you will be issued a letter which will provide certainty as

to the classification level of the facility. This process was beneficial in helping the CRD understand their staffing needs, including the certification requirements for the Chief Operator. Pre-classification results found the facility to be a level 4 municipal wastewater treatment (MWWT-IV).

The residual solids conveyance system and solids treatment facility will be classified independently when they are commissioned. Check the next issue of the Operator Digest to learn more about these systems.

The CRD is currently in the process of hiring operators for this new state-of-theart facility. Postings are available online at <u>https://www.crd.bc.ca/about/careers/</u> current-opportunities.

There will be more operator postings coming in 2019 and 2020.

Facility name:	McL	McLoughlin Point Wastewater Treatment Plant				
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Step 1: Complete	the Inventory					
Size and Scale						
Enter the values below.						
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Maximum population (Varies seaso	onally, Source: October 2018 Core Area Liqu	id Waste Management Plan – Annual Programs Report)	0	320,000		
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SYSTEM OVERVIEW

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STUDENT PROFILE Shelby McFarlane

Water Engineering Technology Student, Okanagan College

2018 Co-op Student of the Year Award Recipient



Why did you enroll in Okanagan College's Water Engineering Technology (WET) program?

I was looking for a hands-on educational program that would lead to a rewarding and long-term career – one that would allow me to work in the city I live in as well. When I came across the WET program, it felt like a perfect fit. I really liked the science and math behind it all and I decided to dive in and I'm so happy I did.

What year of study are you in?

I'm currently in my final semester, slated to graduate this December. Thanks to three co-op terms, I've completed all of my work hours and I just successfully wrote my Level I Wastewater Treatment EOCP exam in November.

Who did you complete your co-op terms with?

All three of my co-op terms, totaling 12 months, were with the City of Kelowna. There are a lot of first- and second-year students competing for a handful of coop jobs which makes the process very competitive. I successfully applied to the job at the City in my first year and made a pact with myself to work harder each day while there. When I reapplied for the next co-op term, the City was happy to have me back. I have a family with two young children in Kelowna so to get a co-op job in Kelowna where I live meant everything to me.

What did you learn during your co-op terms?

The City of Kelowna has its co-op designed to allow you to learn more and train on the job. I wasn't just a labourer and I didn't just pull weeds; I went through real training to learn how to be an Operator as if I was an actual regular employee. The mentorship was excellent and because the work was so relatable to what we were learning in school, I felt more confident when I got back to the classroom.

What was your favourite part of the work you completed?

I loved that my work changed almost every day. Part of being successful in the Wastewater Treatment industry is being adaptable. I liked the lab work, taking samples and doing tests and I also really enjoyed the mechanical side of things, which was a surprise. I wasn't very familiar with using wrenches, pumps, doing oil changes, etc. but it really grew on me and became very enjoyable.

How did you feel when you won the 2018 Co-op Student of the Year Award? It was pretty cool to find out that I won. It's definitely exciting to win it. I made it

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> my goal to work as hard as possible every day during my co-op terms with the City of Kelowna and receiving this award is a really tangible way to see that my hard work is being noticed in a positive way.

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REGISTRATION NOW OPEN FOR THE 2019 LOWER MAINLAND OPERATOR SCHOOL

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Date: April 29 - May 3, 2019 Location: Douglas College, New Westminster, BC Registration deadline: April 19, 2019 Courses on offer:

- Water Distribution I (2.4 CEUs)
- Wastewater Collection II (2.4 CEUs)
- Water Treatment I (2.4 CEUs)
- Water Treatment II (2.4 CEUs)
- Management Skills III: Communication & Financial Skills (3.0 CEUs)
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- Unidirectional Flushing (0.6 CEUs)
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TOPOPS First Nations Water & Wastewater Operator Conference

First Place Team (L to R) James Tomma, Jim Brown, and Richard Chipesia with Vonna Moses, who provided gift cards to participants.



The 2018 First Nations Water & Wastewater Operator Conference was held in October in Vancouver.

The conference theme was Powerful Spiritual Waters. The keynote session speaker was Alaya Boisvert from the David Suzuki Foundation, with the address on Drinking Water, Reconciling Promises and Reality.

EOCP participated in the interactive tradeshow over the two-day event and was able to showcase the Customer Relationship Management (CRM) system to the Operators in attendance.

EOCP provided the Top Ops guiz contest,

which is a fun event to test Operator knowledge in water and wastewater. It is a leopardy style game where teams gain points for answering questions correctly and lose points with incorrect answers.

Four teams participated in the contest that was moderated by Shawn Sanders from MTS, and the three judges were, Len Bloc, Krista Derrickson and Joe Jewell. Marie James from MTS kept score.

Vonna Moses, Maintenance Systems Officer, Community Infrastructure Directorate, Indigenous Services Canada provided gift cards to Top Ops participants.



Participants during Top Ops contest

WHO'S ON THE MOVE

Vonna Moses

Program Coordinator at Indigenous Services Canada (ISC) BC Region



Vonna Moses has recently accepted a position with Indigenous Services Canada (ISC) BC Region as the Program Coordinator for the Circuit Rider Training Program and the Operator Training Program. She works with Operators in BC First Nation communities as well as with 13 Circuit Rider Trainers that provide hands-on training for these Operators. She will be also be working closely with training providers like MTS Inc. and TRU to ensure Operators who work for First Nation communities get the required applicable training and education.

Before working for ISC Vonna was employed by Lower Nicola Indian Band (LNIB). She was the Executive Assistant in the Public and Capital Works Department and the main water and wastewater Operator for her community. LNIB is one of the largest populated First Nation communities in the Merritt/Nicola Valley area. LNIB maintains four small water systems and one small wastewater system. The biggest accomplishment other than becoming a certified water and wastewater Operator was receiving her Diploma from TRU in Water and Wastewater Technology.

Vonna is looking forward to all the new challenges of the new position with ISC and using her educational background and her experience as a First Nation water and wastewater Operator.





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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

INSURANCE PROTECTION For Operators of Community Infrastructure



By Vernon Rogers M.Sc. P.Eng. Sustainable Infrastructure Society

Owning, operating, or maintaining a water or a wastewater system comes with risks. Part of your risk management program should include insurance protection . It is also important to review the extent of your coverage from time to time. Changes in circumstances can lead to increased risk exposure. For example, if a treatment plant is upgraded to meet new quality standards it may mean that complicated and expensive equipment is installed. Will the current insurance coverage provide the necessary protection against faulty operation or equipment breakdown?

One of the external factors that may increase the risks faced by owners and Operators is the threat posed by climate change. For example, in some parts of British Columbia climate change is causing glaciers to recede more rapidly than in the past. This may affect runoff, possibly creating greater peak stream flows in the spring which can lead to floods; and reducing stream flows in the summer which can create water shortages. Do you have contingency plans in place to protect assets such as intake works from floods; are you able to respond rapidly to drought condition?

Sections of the insurance industry are contributing to the mitigation of climate change. Other organizations are also helping to raise awareness of risks. For example, an article in the Resources section of the Canadian Water Directory (see references) outlines the risk to water supply organizations from climate change

Insurance Protection

Insurance has been developed to meet the needs of community water and wastewater systems in British Columbia to cover:

- Liability Insurance
- Directors & Officers Insurance
- Property Insurance
- Boiler & Machinery Insurance
- Contractors' Liability Insurance

These coverages are outlined in the following sections.

Liability Insurance

If you own or operate a water or wastewater system, liability insurance can protect you from the consequences of certain rare and potentially devastating accidents. It provides protection against loss arising from claims made against your system, and if you are found legally liable for property damage or bodily injury, liability insurance will respond.

All utility systems should have liability insurance coverage in place; it is the most important insurance coverage for small entities. While the frequency of loss is typically low, the severity of loss when it happens is usually very high. Liability insurance covers injury to third parties for which you are legally liable. Injury may include bodily injury, such as sickness, disease and death. It also typically covers property damage, libel and slander.

Directors and Officers Insurance

A Directors and Officers (D&O) Liability Insurance policy can provide coverage for directors and officers for claims arising from their wrongful acts, omissions or decisions. Directors and officers of both for-profit and non-profit water systems and wastewater organizations can potentially be sued or involved in proceedings by several parties, including members, third parties and government agencies.

Lawsuits may arise from a wide range of causes, including conduct of fundraising activities, payment of wages and deduction of taxes for employees, breach of statute, insolvency, breaches of fiduciary duty and duty of care, negligent supervision, screening or hiring of employees and volunteers.

Property Insurance

Property insurance covers loss or damage to your physical assets, such as buildings, reservoirs, office contents, equipment, tools and stock. However, certain assets are excluded from coverage, such as land and underground services. Property that is located on owned premises, other locations or is in transit can be covered. Particular attention needs to be paid to the valuation of the property, which may be done based on actual cash value or replacement cost.

Property insurance can also cover losses from the reduction in revenues, or the extra expenses incurred to continue to operate and provide services as normally as possible following insured damage or destruction to property and equipment.

Equipment Breakdown Insurance

Equipment Breakdown Insurance, also known Boiler and Machinery Insurance, will provide coverage for accidents to insured objects within your water system or wastewater system.

An accident is defined as a sudden and accidental breakdown of an "object" resulting in physical damage to the object that requires the object to be either repaired or replaced. Objects may be a

Continued on page 12







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Our Yukon Water and Wastewater Operator Program (YWWOP) offers a range of courses designed to meet the needs of new and prospective Operators, as well as current Operators working within governments (e.g. municipal, territorial, First Nation) and the private sector (e.g. mining, water delivery, plumbing). Our courses are relevant to anyone involved with or interested in water and wastewater.

<u>Core</u> courses are designed to prepare the participant to challenge a related **Environmental Operator Certification Program (EOCP)** certification exam.

<u>Elective</u> courses are designed to develop technical skills and workplace essential skills, and offer **Continuing Education Units (CEUs).**

ELECTIVE COURSES INCLUDE:

- Polyethylene Pipe Fusion
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- Passive Wastewater Treatment
- SCADA and Control Systems in Yukon
- Water Quality Monitoring and Recordkeeping
- Emergency Response Plan
- Source Water Protection

INFORMATION:

867.668.8798 or ywwop@yukoncollege.yk.ca yukoncollege.yk.ca/ywwop

YWWOP classes and EOCP exam sessions can be facilitated at any Yukon College campus or surrounding NWT and Northern BC community on an on-demand basis. Alternatively, YWWOP classes are available through web-conferencing (FUZE).

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INSURANCE continued from page 10

pressure object, a mechanical object or an electrical object. One of the reasons for securing equipment breakdown coverage is that Property Insurance typically excludes a range of items, such as electrical arcing of motors and other devices, and mechanical breakdown.

As with Property Insurance, Boiler and Machinery can include coverage for extra expense and/or loss of revenue.

Contractors Liability Insurance

If you provide operations and maintenance services as an independent contractor to waterworks or wastewater systems, you can apply for liability insurance coverage and contractor's pollution liability insurance.

The reasons for obtaining it are much the same as those discussed in the Liability Insurance section above.

Occurrence Insurance

An Occurrence policy is a type of policy that protects you from any covered incident that 'occurs' during the policy period, regardless of when a claim is filed. An occurrence policy will respond to claims that come in - even after the policy has been canceled – so long as the incident occurred during the period in which coverage was in force. In effect, an Occurrence policy offers permanent coverage for incidents that occur during the policy period.

Claims-made Coverage

A claims-made policy is a type of policy that provides coverage for claims only when BOTH the alleged incident AND the resulting claim happen during the period the policy is in force. Claims made policies provide coverage so long as the insured continues to pay premiums for the initial policy and any subsequent renewals. Each succeeding year the policy is continuously renewed, the 'coverage period' is extended.

INSURANCE continued on page 14



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OPERATOR PEER NETWORK

We asked, you responded, we listened...

QUESTION	RESPONSE
1. Are you interested in participating in the EOCP's Operator Peer Network mentor program?	65% said Yes
2. Have you participated as a Mentor in the past?	75% said No
3. Have you participated as a Mentee in the past?	80% said No

We had been asked by Operators about opportunities for mentoring – both for being a mentor and being a mentee . At the same time, we had been asked by Operators about the feasibility of earning CEUs for mentoring . We put the two together and developed the Operator Peer Network.



The goal of the EOCP's new program is to match mentors and mentees based on skills available and skills needed, and also to formalize this process whereby both can earn up to 0.6 CEUs in each reporting period for participating in the program.

We appreciate your feedback on this new initiative and we will be in touch soon to get additional feedback from those of you who are interested in participating to develop a skill-set inventory.

To check the level of interest, we put together a survey and the response rate was incredible. Whilst the majority of respondents had not officially been a mentor or a mentee, they were interested in participating in the new program.

As in many professions, experienced Operators already participate unofficially as mentors in their workplaces, providing guidance and advice to new Operators . Similarly, new Operators are unofficially mentees learning from more experienced Operators.



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INSURANCE continued from page 12 Once premiums stop, the coverage stops. Claims made to the insurance company after the coverage period ends will not be covered, even if the alleged incident occurred while the policy was in force. A claims-made policy will cover claims after the coverage period ONLY if the insured purchases extended reporting period or 'tail' coverage.

Resources

For more information about insurance coverage, and to apply for insurance

protection go <u>www.WaterBC.ca</u> This website is operated by the Sustainable Infrastructure Society (SIS) and gives access to insurance protection designed for water and wastewater systems and water and wastewater system contractors.

The insurance for water and wastewater systems owners would apply, subject to the limitations of coverage, to the organization and the directors, managers, operators and other employees . The insurance for water and wastewater systems contractors would apply, subject to the limitations of coverage, when a contractor does work, as an operator or in some other capacity under contract, for the owners of a water or wastewater system and works as an independent contractor.

Follow this link to the website of Canadian Water Directory for an article on Climate Change and Water. This will help you to identify risks that may occur to your water or wastewater system due to climate change: <u>https://www.canadianwater.</u> <u>directory/climate-change-and-water-</u> <u>supply-article.</u>



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STATISTICS January to September 28, 2018

We are at the midway point in the current CEU reporting period. Operators have been working hard to get their course completion certificates to the EOCP office before December 31, 2019. Operators have earned 1,832 CEUs as of December 20, 2018, that is 18,320 hours of training!!

The figures in the Operator certification report reflects those Operators who have met their certification requirements for the 2016 -2017 reporting period, as well as having paid their 2018 Operator dues.

You can check your status by logging into your profile at <u>https://crm.eocp.ca/</u> and clicking on ACCOUNT to see if

FACILITY CLASSIFICATION as of Dec. 20, 2018

Classification	IV	III	П	I	Other	Total
WT	19	41	123	65		248
WD	33	62	175	149		419
WWC	12	21	75	123		231
MWWT	26	29	75	58		188
IWWT	1	1	5	1		8
SWS					897	897
SWWS					201	201
Total	91	154	453	396	1098	2,192

your dues have been paid, and CEU under the LEARNING STATUS tab to confirm that your CEUs have been met.

Exam Statistics

EDATOD CEDTIELCATION

• **389** Operators wrote certification exams in 78 exam sessions between October 1, 2018 and December 20, 2018.

Facilities

• **43** facilities were newly classified or reclassified from July 1, 2018 to September 28, 2018.

UPERAI	UKU	EKI	FICA		as of Se	ptemb	er 28,	2018
Classification	IV	ш	Ш	MUII	Т	MUI	ΟΙΤ	Total
WT	49	96	216	7	374	19	54	815
WD	80	180	709	12	791	24	53	1,849
WWC	15	65	408		627		43	1,189
MWWT	119	145	226	6	282	24	51	853
IWWT		2	18		22			42
BWD								44
SWS								719
SWWS								273
Total								5,823

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