



# WORKSAFEBC REGULATION PART 9 (CONFINED SPACES)

DISCUSSION DOCUMENT ON WATER SECTOR CHALLENGES –  
UPDATED FEBRUARY 05, 2019

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# INTRODUCTION AND KEY FINDINGS

This discussion document is a compilation of the issues and impacts experienced by members of the water sector in relation to Part 9 of the WorkSafeBC (WSBC) regulations. The intention of this document is to communicate the key issues the water sector faces in complying with the current regulations and inform the regulation review committee in WSBC's upcoming regulatory review process. This document may also be used as a tool by other stakeholders as they formulate their own feedback on the regulations.

The content within this document has been gathered through a series of consultations, feedback sessions and document reviews conducted by a cross-section of water sector representatives, from the fall of 2017 to the fall of 2018. The working group that supported development of this document (see Acknowledgements) unanimously agrees that worker safety is a primary concern in their respective organizations and should remain the primary focus of safety regulations. In fact, many organizations in the water sector have been proactive in creating robust safety programs and incorporating safety into the design of their infrastructure.

The consultation process revealed three key findings:

**1. Part 9 of the current WSBC regulations presents a considerable burden to the water sector and does not improve worker safety in many situations.**

In some instances, the existing regulations prescribe actions that either fail to improve workplace safety or reduce protection for workers, and several sections of the regulations are too prescriptive to apply in 'real life' situations. The ambiguity in some clauses and the overly prescriptive nature of other clauses create situations where compliance becomes difficult.

The areas of the regulation that provide the highest level of concern involve prescriptive language that does not take industry context into account and, sometimes, results in extraordinary measures that do not improve worker safety.

**2. A risk-based approach to future regulation would provide workers with the structure to make good safety-focused decisions and address many of the compliance issues identified by the water sector.**

Regulations should restrict workplace activity only to the extent necessary to ensure safety. Systems have faced excessive engineering, equipment, and labour requirements to maintain regulatory compliance for low risk environments identified as confined spaces.

**3. The water sector is a large and unique stakeholder group that would benefit from specific consideration within Part 9 of the WSBC regulations.**

Existing regulation appears to "shoehorn" remedies that do not make sense within the context of this sector. As water infrastructure evolves, the existing regulations may prevent the sector from adopting the innovative and creative solutions needed to deliver safe, sustainable services in safe working environments.

As WorkSafeBC reviews Part 9 of their regulations, consultation with the water sector will create solutions that can be applied by the sector, benefit the people they serve, and ultimately increase protection for workers.

# USING THIS DOCUMENT

This document outlines the experiences of the water sector in complying with Part 9 of the WorkSafeBC (WSBC) regulations. As such, these experiences have been categorized into three sections.

**Section A** describes general impacts on the water sector when complying with the current regulations.

**Section B** provides greater detail on aspects of the regulation that are particularly difficult for the water sector to comply with.

**Section C** outlines challenges related to the process of compliance.

For the purposes of this document, the following **terms** will be used:

Contractor or Consultant	Individual or company hired to perform work on a water system, or to provide professional services such as industrial hygiene, engineering, safety, etc.
Employee	Water system worker
Engineer	Workers responsible for designing water infrastructure – may be employed or contracted by the system or municipality
Facility	Physical asset or location within a water system
Organization	Municipal entities and system owners
Safety Manager	Employee responsible for safety procedures and plans
Sector	Small, medium, and large water systems that employ more than 6,200 people across the province, as well as a network of supply and service providers and consultants
Small Facility	Facility serving 500 users or less – typically irrigation districts or small systems
Qualified Person	A person with adequate training and experience in the identification, evaluation and control of confined space hazards
Water	Refers to water, wastewater and stormwater
WSBC Officer	WorkSafeBC representative providing instruction, remedy, or audit to a water system

# SECTION A: IMPACTS ON THE WATER SECTOR WHEN COMPLYING WITH THE REGULATIONS

# 1.0 Systemic Impacts

This sub-section describes the impacts on water systems when attempting to comply with the current regulations.

REF #	ISSUE	DESCRIPTION
A 1.1	Non-compliance	<p>The rate of compliance (especially with Part 9.18) is very low in the sector. This is especially true for small systems.</p> <p>Older equipment was not built to accommodate Part 9 standards, and equipment designed today does not always accommodate the regulations as currently written.</p>

## DISCUSSION

### Employees

- Compliance is complicated and in many cases unclear, leading employees to implement the wrong procedures.
- Workers perform necessary, routine confined space tasks, knowing they should have alternative procedures in place. Many workers feel it is worth the risk to perform the routine 5-minute task, rather than wait six weeks and spend \$5,000 in taxpayer dollars when the task has been completed safely numerous times before.

### Facility

- Non-compliance damages the reputation of the facility. Elected officials, senior administrators and the people they serve lose faith and trust in the water system's employees.
- The credibility of a water system's safety program is at risk when its processes and procedures contradict WorkSafeBC (WSBC) regulations, even though a non-compliant program may be more effective in ensuring worker safety than a compliant program for that specific site or situation.
- The motivation and benefit for a facility to change its practices is lacking when the space and materials of a confined space have not changed and the facility has decades of data and records demonstrating it is a safe working environment.

### Contractors

- Unfair bidding processes result when compliant and non-compliant contractors compete for a job. The lowest bid usually gets the job, regardless of safety records or practices.
- Hiring lowest-cost contractors places the facility at risk of non-compliance.

Example: Requirement to install bypass piping versus fixing the leak. Even then, the facility may still be considered in willful non-compliance.

REF #	ISSUE	DESCRIPTION
A 1.2	Impacts or delays to critical services in the community	Compliance with WSBC regulations can delay the implementation of services to the community because organizations must perform additional administrative tasks to find work-around solutions (Alternate Measures).

#### DISCUSSION

- Extensive delays potentially place the community at risk through loss of service. WSBC’s lengthy application processing period is also a concern.
- Delays in implementing services can negatively impact public health and may prevent the facility from shutting down and bleeding the system.
- Being proactive and asking a WSBC Officer to perform an on-site review of alternate measures usually results in written orders; employees would prefer a collaborative consultation to resolve the problem.
- Public health (i.e. hospitals and care homes) is negatively impacted when workers are prevented from working on live systems and being able to maintain sewer and water services.

REF #	ISSUE	DESCRIPTION
A 1.3	Public/Elected Official Support	Public support is critical to ensuring the utility is adequately funded; compliance can erode that support.

#### DISCUSSION

- High cost of projects, in order to comply with regulations, negatively impacts public support for the work required to ensure the safety of public health and environment.
- Delays due to compliance reduce public and political support for critical infrastructure projects.
- The additional resources required to complete a task or project, and comply with the regulations, can cause customers to question the credibility of the organization and its employees (e.g. “Why are so many people involved in getting this small job done?”)

REF #	ISSUE	DESCRIPTION
A 1.4	Increased costs	To be in compliance with the regulation, organizations must sometimes take extraordinary measures that negatively impact budgets.

## DISCUSSION

- Compliance can result in additional costs from delays, extra consultations, additional equipment, additional real estate to complete the job, and administration.
- Some additional costs are incurred by repeating processes to ensure compliance with the regulations (e.g. Having an alternative measure expire and within a month having to re-apply to do the same work).
- Costs increase when systems need to hire consultants in order to comply with WSBC regulations; this is particularly difficult for small systems that may not have engineers or experts on staff.
- A small tax/strata base limits the budget available for extraordinary measures. When extraordinary measures are implemented, they cut into a large percentage of a small system’s budget.
- Small systems may not have the resources to adequately assess projects, resulting in higher than anticipated costs and heavier workloads for employees.
- There is an additional cost to eliminating confined spaces in capital projects.

Example: Requirement for an above ground kiosk, resulting in thousands of extra dollars for power and heating, when a small in-ground vault would have sufficed. In ground vaults look nicer than above ground structures that tend to be marked with graffiti.

REF #	ISSUE	DESCRIPTION
A 1.5	Access to Expertise	Complying with WSBC regulations require extensive logistical expertise. Remote areas are less likely to be able to access experts or persons “qualified” by WSBC.

## DISCUSSION

- Most systems do not have in-house experts and may need to hire consultants to complete the work.
- Small systems or those in remote communities are often challenged to find qualified, experienced employees or consultants.
- Most systems lack hazard recognition (assessment) and risk assessment procedures. The work is not being completed legally.
- Many systems are completing the work safely, but not legally.
- Not having access to expertise delays procuring alternate measures and completing the work.

REF #	ISSUE	DESCRIPTION
A 1.6	Compromised Maintenance	Complex regulatory compliance requirements discourage the efficient and timely maintenance of critical systems where confined space entry is required.

## DISCUSSION

- Additional costs do not improve worker safety but do negatively impact the ability to ensure well-maintained facilities.
- Lack of maintenance increases risk to worker safety.
- Maintenance projects are being delayed due to the complexity of complying with the regulations. These delays place the entire system at a greater risk of failure.

Example: There was a geyser of fecal matter in a community because of compromised maintenance. The maintenance wasn't performed because of compliance concerns over proven safe working procedures.

Example: A head gates structure built in the 1960s did not have double block or bleed. The screen was jammed and WSBC was asked to provide advice, which resulted in a direct order and the head gate to run on a single screen for the duration of the summer. This put the utility at risk. In low flow season the lake was drawn down below the intake valves and the screen was entered. FLNRO had reports of dead fish after reducing the flow to the stream resulting in another order. The entire process was counterproductive.

- To protect the system at the property line, the inability to use a vault results in no protection for smaller projects.
- Infrastructure is more vulnerable and less secure due to delays in maintenance because the process is too complex.

## 2.0 Impacts to Employees

This sub-section discusses impacts on employees of organizations engaged in confined spaces-related activities, when attempting to comply with the current regulations.

REF #	ISSUE	DESCRIPTION
A 2.1	Uncertainty and confusion	<p>Inconsistent application of the regulations leads to uncertainty and confusion among employees.</p> <ul style="list-style-type: none"> <li>• Trainers interpret the regulations differently.</li> <li>• WorkSafeBC (WSBC) Officers interpret the regulations differently.</li> </ul>

### DISCUSSION

- WSBC regulations can contradict long-established practices, leading workers to become confused and frustrated over changing expectations; this can also lead employees to experience increased levels of work-related stress.
- Some employees experience “analysis paralysis”: They are unwilling to make a decision for fear of not meeting expectations.
- Inconsistency in training leads to confusion in applying confined spaces principles.  
Example: One trainer advised that an excavation is a confined space and workers needed to be tethered. A different, subsequent trainer said it was not.
- Employees may be prohibited from completing their work or may refuse to do their work.  
Example: Workers stating, “Just let us do our work”.
- Employees feel compelled to implement excessive controls due to fear of non-compliance.
- Incorrect interpretation of the regulations leads to non-compliance, which opens the facility to regulatory risk.

REF #	ISSUE	DESCRIPTION
A 2.2	Motivation	Employees question whether compliance with WSBC regulations will increase worker safety.

#### DISCUSSION

- The skepticism of whether compliance will increase worker safety results in some employees becoming cynical about the value of complying with the regulations.
- Employee morale decreases and they stop complying with the regulations if they are unrealistic.

## 3.0 Impacts to Contractors

This sub-section describes impacts on contractors engaged in projects that have confined spaces requirements. These companies perform work for a wide range of clientele, ranging from municipalities to individuals.

REF #	ISSUE	DESCRIPTION
A 3.1	Owner understanding	Responsibilities regarding compliance are poorly defined in the regulations.

### DISCUSSION

- The regulations may be interpreted in different ways, leading to conflict between staff and organizations (or owners and contractors) with regards to responsibilities and associated costs.
- In some cases, significant time and costs are incurred for delays in resolving issues related to the interpretation of responsibility and required documentation; occasionally, work must be cancelled or deferred.
- Sometimes system owners do not include a risk assessment in their call for proposals - risk becomes part of the project cost.
- Contractors are frustrated by owners who do not comply with the regulations; this can negatively affect the relationship between contractors and organizations.
- Contractors often end up providing unbillable time to complete the overlooked safety aspects of the job.

REF #	ISSUE	DESCRIPTION
A 3.2	Contractor compliance	Contractors struggle to comply with WSBC regulations, while still remaining competitive against contractors who don't comply.

### DISCUSSION

- Contractors who incorporate additional safety measures in their quotes are competing with contractors who don't include the costs of complying with legal requirements in their bids. The contractor with the lowest bid, typically gets the job.
- There is a perception that WorkSafeBC (WSBC) is overly strict with proactive contractors who try to comply with the regulation, while ignoring non-compliant contractors.

- Many contractors are also unaware of the requirements with respect to alternate measures applications. WSBC Officers need to ensure that contractors are aware of these requirements. Municipalities also need to include these requirements in the bidding process.
- Contractors who incorporate additional safety measures in their quotes are “low-balled” by contractors who don’t include the costs of regulatory compliance in their bids.
- Contractors purchase unnecessary equipment and employ unneeded staff in an effort to comply with the regulations.

# SECTION B: ISSUES WITH WORKSAFEBC REGULATION PART 9

## 4.0 Issues with Definitions

This sub-section outlines the language and definitions within the regulations that have proven problematic for the water sector.

REF #	ISSUE	DESCRIPTION
B 4.1	General Language	The language of the regulation is difficult to interpret, leaving it unclear which regulation takes precedence and where to find more information.

### DISCUSSION

- Confusing language in the regulation has led to the following results:
  - Inconsistency on alarm levels between consultants.
  - Inconsistency in information presented in training.
  - WorkSafeBC (WSBC) Officers giving different interpretations of the regulations.
  - Industrial hygiene consultants offering different interpretations of the regulation.
  - Confusion and difference definitions of the term “orifice.”

### IDEAL STATE

The language used in the regulation is converted into layman’s terms.

REF #	ISSUE	DESCRIPTION
B 4.2	Definitions – Confined Space	The definition of a “confined space” is flawed and based on geometry, not potential hazards or risk assessment.

### DISCUSSION

- The current definition is so broad that it includes spaces that should not be regulated. As a result, facilities must maintain an unmanageable inventory of confined spaces in order to ensure compliance. Having a large list of confined spaces results in escalating costs (labour and materials) that are subsequently transferred to the customers/taxpayers.

Example: “I am working with very small water vaults which are over 1.2 m deep for frost protection. The regulations are excessively restrictive for this application. No one has yet been able to tell me where the safety concern is regarding small water vaults.”

- Definition of a “confined space” can be confusing.

Examples:

Reaching into a municipal space from above can be defined as confined space entry.

Is a water meter box a confined space?

Can a building be a confined space?

Is an excavation a confined space?

Is it a confined space when the breathing zone crosses or could cross the plane of the entrance of a confined space?

- Some of the hazards cited in the regulation do not have much impact in the field (e.g. the regulations emphasize the hazards of falls and injuries but fail to give much consideration to the problem of atmospheric hazards).
- It is unclear which features (e.g. staircases, HVAC, egress) are necessary or may be used to avoid confined space classification.

**IDEAL STATE**

- The definition of a “confined space” is simplified, using less prescriptive language.
- The definition of a “confined space” is separated into “confined space”, “confined space entry” and “confined space rescue.”
- The definition of a “confined space” includes atmospheric hazards as it does in other provinces.
- The regulations are crafted based on risk-assessment so that the rules can be applied more consistently and appropriately.

REF #	ISSUE	DESCRIPTION
B 4.3	Definitions – Excluded Space	There is confusion in the water sector regarding whether a space can be excluded or not.

**DISCUSSION**

- The poor definition of an “excluded space” in the regulations has led to problems with workload and staff interpretation of the rules.
- The process of applying for excluded spaces is long and onerous.
- Some excluded spaces require applications through a formal process, while others must be internally justified.
- The definition of a “confined space” should not require excluded spaces.

**IDEAL STATE**

- Given the lack of clarity in this section, “excluded spaces” are redefined or eliminated from Section 9 altogether.
- A prescribed timeline is provided for decisions on excluded spaces applications.

REF #	ISSUE	DESCRIPTION
B 4.4	Definitions – Alternative Measure of Control (9.22)	The definition for “alternate measure of control” is confusing and inconsistently interpreted.

**DISCUSSION**

- The definition of “alternate measure of control” is confusing, vague and tends to be inconsistently interpreted by the water sector and WSBC. Compliance is a moving target; it is not hazard- or risk-based.
- WSBC typically requires that 22 elements be met in the alternative measures process, but guidelines suggest eight elements may be sufficient.
- The regulations don’t marry up with reality. Why are people going to alternate measures in the first place? Alternate measures should not be the default procedure.

**IDEAL STATE**

- The definition for “alternate measure of control” is clear.
- There is consistency regarding requirements to achieve compliance.

REF #	ISSUE	DESCRIPTION
B 4.5	Definitions – Qualified Person	The competencies and process to become a Qualified Person are not clearly defined.

**DISCUSSION**

- The regulation states that a Qualified Person must perform a hazard assessment, but the definition of a “Qualified Person” is unclear (e.g. Do qualified people need to complete particular training programs or is equivalent experience enough to be considered “qualified”?)
- The lack of definition around the term “Qualified Person” means that the approval of a Qualified Person varies depending on the situation and WSBC Officer involved in each case.

- Employees report that WSBC Officers will only tell them when they are not qualified to perform a particular task.
- Ambiguity around whether someone is a Qualified Person interferes with individuals performing their own risk assessments, particularly if they have extensive on-the-job experience but lack formal education. As a result, there are increased risks to projects due to delays and rising costs due to outsourcing. This issue is more acute for smaller systems with limited staff.

#### IDEAL STATE

- There are clear competencies and a path to becoming a Qualified Person.
- The water sector is involved in developing the competencies of a Qualified Person.

REF #	ISSUE	DESCRIPTION
B 4.6	Definitions – Hazard Assessment	The definition for “hazard assessment” is incorrect.

#### DISCUSSION

- Hazards are identified and risks are assessed. This language is representative of an approach that identifies a hazard and requires a prescriptive remedy regardless of the level of risk that the hazard actually presents.

#### IDEAL STATE

The language used in the regulations is representative of risk assessment instead of hazard assessment.

REF #	ISSUE	DESCRIPTION
B 4.7	Definitions – Respirable Air	The definition for “clean respirable air” is not realistic or manageable.  In some cases, chemical concentrations are so small that they are virtually undetectable.

#### DISCUSSION

- Environmental levels of O<sub>3</sub> and SiO<sub>2</sub>, and trivial CO<sub>2</sub> and CO concentrations found in workplaces are sufficient to disqualify an atmosphere from meeting the definition for clean respirable air.
- It is very difficult to find information on clean respirable air in the regulations.

- Background levels of airborne contaminants on street corners may make it impossible to blow clean respirable air into a confined space.
- Relief from prescriptive ventilation and monitoring requirements in low hazard atmospheres under Part 9 is lost when ambient O<sub>3</sub> or CO or SiO<sub>2</sub> levels exceed 10% of 8-hour exposure limits.

#### IDEAL STATE

The definition for “clean respirable air” is reconsidered.

REF #	ISSUE	DESCRIPTION
B 4.8	Definitions – Adjacent Piping	The definition for “adjacent piping” is open to broad interpretation in the context of isolation; it is not risk-based.

#### DISCUSSION

- WSBC Officers may interpret the term “adjacent piping” in many different ways.
- Adjacent piping is one of the single most problematic aspects of the regulation and creates undue hardship for systems, small and large.
- There is a lack of clarity on the difference between a pipe and a channel.
- Gases can escape if the space has an opening on the top.

#### IDEAL STATE

- There is a clear definition on what a pipe and a channel are.
- The definition of “adjacent piping” is changed to “connections allowing harmful substances to enter the space.”

REF #	ISSUE	DESCRIPTION
B 4.9	Definitions – Harmful Substances	The definition of “harmful substances” is extremely broad and does not necessarily improve worker safety.

#### DISCUSSION

- Hazards related to harmful substances are not well- considered in the regulations (e.g. biological and chemical hazards, hazards that threaten to engulf workers). The wording of the regulation is onerous, confusing and vague.

Example: Wastewater is heavily diluted in the waste stream and includes biological hazards with small amounts of other contaminants, most of which are not acutely harmful. The treatment of wastewater reduces the concentration of the contaminants, thereby changing the level of risk throughout the wastewater treatment process. However, the regulation treats the wastewater the same regardless of its place within the treatment process.

#### IDEAL STATE

- The regulations consider risk and not just presence or absence of a hazard.
- There is a clear definition of “harmful substances” (acute risk versus chronic risk) based on a risk assessment by a Qualified Person.
- The definition of “harmful substances” is based on acute hazards that would impair a worker’s ability to escape unaided. It is not to be based on chronic health hazards.
- There is a specific statement included in the regulations regarding raw sanitary sewage (acute vs. chronic risk).

## 5.0 Issues with Hazards & Risk Assessment

This sub-section outlines several issues related to utilizing a hazard assessment model of risk recognition.

REF #	ISSUE	DESCRIPTION
B 5.1	Hazard Assessment	The general approach to safety is through hazard assessment instead of risk assessment. The focus of the regulation should be on risk assessment.

### DISCUSSION

- The prescriptive approach to hazard assessment prevents experienced professionals from conducting risk assessments and creating plans that ensure worker safety within the context of the industry.
- Because the regulations only considers hazards, workers trying to comply with regulations may be compelled to take costly, overly cautious measures for low risk activities. This can result in project delays, increased costs, employee frustration with minimal benefit for the project, and, occasionally, a negative impact on employee safety.
- There isn't a requirement for written hazard assessment, yet WorkSafeBC (WSBC) requires the opportunity to review written assessments rather than procedures.
- Hazard assessments are specific to a work activity and, as a result, pose challenges for workers:
  - Anticipating all activities in advance can be a challenging.
  - Multiple documents for a task can be confusing for operators.

### IDEAL STATE

- Anticipation, Recognition, Evaluation, and Control are used as the drivers – a risk-based process.
- Risk assessments are performed by individuals knowledgeable about the sector.
- Examples of risk assessments are made public to provide guidance and shared learning. There are credible, collaborative resources to help all workers in the sector learn how to conduct a proper risk assessment.
- Risk assessment includes a focus on the control of hazardous materials.
- Clear guidelines defining hazard assessment, work procedures and entry permits. This would reduce uncertainty, as the regulation would not be subject to different interpretations.
- The evaluations of a good hazard assessment are the procedures that result from the assessment.

REF #	ISSUE	DESCRIPTION
B 5.2	No provision for emergency activities	Facilities do not have a mechanism to fast track an application or conduct an emergency entry.

## DISCUSSION

- In some cases, facilities need to stay in operation to service critical infrastructure. The regulation, however, is written with routine work in mind and doesn't apply to emergency work.
- There are delays in performing critical repair work due to administrative processes (e.g. alternate measures application, engineering review and certification for isolation).
- During times of emergency there may be no time to do more than a quick informal hazard identification and risk assessment and draft procedures (without joint health and safety committee consultation).
- Delays in approval for emergency entries risk public health and can lead to safety issues and property damage and environmental impacts. As a result, willful non-compliance becomes a viable fallback position.
- Other potential problems include:
  - Slower operations.
  - Increased work complexity.
  - Requirement to access local fire department resources.

## IDEAL STATE

- Risk-based approaches are used, especially in emergency situations to streamline processes and ensure continuity of service.
- Qualified Persons are given the responsibility and authority to conduct the risk assessment.
- Risk-based approaches are reviewed without alternative measures to allow for professional judgment and innovation.

## 6.0 Issues with Isolation

This sub-section outlines the water sector’s issues with the prescriptive language used in reference to “isolation” in the regulations.

REF #	ISSUE	DESCRIPTION
B 6.1	Section 9.18 (Isolation) has too many limitations and too few options	Isolation of harmful substances as the only acceptable means of control is too limiting in the context of the water sector.

### DISCUSSION

- Meeting isolation controls requires a significant expenditure of money and time for temporary work approvals on items that need regular service. Many organizations do not have the resources to cover the requirements.
- Isolation as per 9.18 is nearly always impracticable for water systems, which were not designed in this manner. Because the systems are primarily underground, most confined spaces are regulated under the alternate measures process. This leads to additional administration demands on municipalities and WorkSafeBC (WSBC).
- There is a difference in acceptance of isolation measures for clean water vs. wastewater.
- The regulation restricts innovation and practical application/use of engineered systems to achieve isolation.
- Many organizations are in willful non-compliance regarding isolation requirements; field compliance with Part 9.18 for wastewater systems is likely near zero.
- Requiring isolation as a control mechanism does not take into account the varying levels of risk within the sector and is often a redundant safety measure. In some cases, the process of isolation creates other hazards. In all cases, the restrictive approach to the regulation prevents innovation and the adoption of better solutions within the context of an evolving industry.
- The “one-size” approach to isolation is particularly challenging for facilities that have legacy infrastructure. As a result, facilities struggle to find solutions that are compliant and they often need to hire consultants to address the requirement, at a high cost to the facility.

**IDEAL STATE**

- A risk-based approach is used. The regulation focuses on controlling the hazard; isolation is considered one approach, but other measures can be used if they achieve the same outcome.
- The regulations include requirements that consider scale and the level of risk.
- The risk assessment is reliant on the Qualified Person and engineering team to conduct risk assessments and develop plans to control hazards based on risk.
- WSBC is involved in reviewing every isolation procedure that does not depend on blanking, blinding, disconnecting or double-blocking and bleeding.
- The approach to isolation takes into account key hazards and considers the composition of the potable water or wastewater being handled.
- Engineered gates are recognized and legal (because they are an industry standard).
- Isolation measures are based on pressures, quantity and overall acute risk, not just the nature of the material.

REF #	ISSUE	DESCRIPTION
B 6.2	Double block and bleed	It is extremely difficult to comply with the double block and bleed aspect of the regulation; compliance with the regulations offer minimal to no safety benefit.

**DISCUSSION**

- Most municipal systems are not designed to allow double block and bleed.
- Double block and bleed is rarely possible due to existing installed single blocks or less than line-sized bleed configurations. These configurations continue to be installed regularly.
- The risk associated with situations requiring double block and bleed is extremely varied, but the control requirements are the same. As a result, the only path to compliance is through alternate measures. Situations that require double block and bleed require considerable resource and monetary investment.
- Bleeds are not the same size as pipes even if a double block is installed. In one community, all pressure reducing valve (PRV) stations are now above ground, resulting in a greater risk of contact between vehicle and infrastructure. This wouldn't occur if the infrastructure was below grade. There is also a lack of real estate and it is difficult to find a suitable location above ground.

**IDEAL STATE**

- A risk-based approach relying on a Professional Engineer or Qualified Person is used.
- The water sector is provided specific regulations.

- The regulations include a check-list to demonstrate how a single block is effective for double block and bleed.
- There is guidance on how to double block and bleed (at line size) piping systems in meter chambers, pressure reducing valves, etc.
- Alternate means can be established through limits on input pressures, volumes and space fill times, where not-immediately-hazardous water is the only concern.
- Consideration is given to allowing a double block and less than line-sized bleed.

REF #	ISSUE	DESCRIPTION
B 6.3	Engineering Certificate	The requirement for engineers to re-certify existing infrastructure is unreasonable.

#### DISCUSSION

- Initially, only valves required certification. Now, existing infrastructure also needs certification.
- Certifying old or buried equipment is extremely difficult.

#### IDEAL STATE

- For a single block only: if the valve is built to a proven standard (e.g. American Water Works Association) and is within its expected lifespan (e.g.: 50 years), approval and sign-off from an engineer is not necessary.
- Existing equipment and infrastructure is grandfathered and certification is not required.

## 7.0 Issues with Rescue

This sub-section outlines the water sector’s issues with the prescriptive language used in reference to “rescue” in the regulations.

REF #	ISSUE	DESCRIPTION
B 7.1	Rescue	The section of the regulations on “rescue” is unnecessarily prescriptive in the context of the water sector.

### DISCUSSION

- The depth/height of a space affects the ability to extract a worker and isn’t recognized in the regulations.
- The regulations specify the requirements for rescue – these should be based on the risk assessment.
- The water sector has challenges related to the definition of “rescue” and the provision of first-aid.
- Municipalities often don’t have the resources to comply with the regulations related to rescue.
- The regulations related to rescue can be confusing and stressful for staff because the requirements are unclear regarding when rescue requirements take precedence over the work.
- The regulations related to rescue increase costs as a result of the increased work responsibilities and required training; this diverts resources from other system functions.
- It is difficult for municipalities to make resources available to perform rescues. It is difficult for rural communities’ fire departments (volunteer-based) to respond to and perform extractions.
- Access to rescue consultants is limited.

### IDEAL STATE

- The language used in the regulations regarding rescue is less prescriptive.
- A risk-based approach is used for rescue and a Qualified Person is responsible for developing a rescue plan. Teams are then able to practice rescues and demonstrate capability, perform assessments, and plan necessary rescue procedures.

# SECTION C: ISSUES WITH THE ADMINISTRATION PROCESSES TO ACHIEVE COMPLIANCE

## 8.0 Implementation of the Regulations

This sub-section outlines the water sector’s challenges related to the administrative process of complying with the regulations.

REF #	ISSUE	DESCRIPTION
C 8.1	Interpretation of the regulations	WorkSafeBC (WSBC) Officers inconsistently interpret and apply the regulations.

### DISCUSSION

- Employees and contractors believe they receive different direction from different WSBC Officers. As a result, employees and contractors become confused about what they should do. This confusion leads to work delays and higher costs for the facility.
- Employees describe being intimidated and frustrated when working with WSBC Officers due to the lack of consultation and assistance they provide.
- The regulations as they are currently written often result in confusion for WSBC Officers.

### IDEAL STATE

- Compliance guidance is provided to the organization and employees in writing.
- Subject matter experts (SMEs) for key sectors, like the water sector, are made available by WSBC for organizations to contact with questions.
- WSBC provides access to published safety literature (e.g. case studies).
- Interpretations of the regulations are standardized and shared broadly with organizations, employees, contractors, and WSBC Officers.

REF #	ISSUE	DESCRIPTION
C 8.2	Application of the regulations	Applications to WSBC are reviewed with a varying level of scrutiny; applications are not evaluated and processed in a fair manner.

### DISCUSSION

- Facilities are denied applications due to factors unrelated to the application. This results in confusion, work delays and higher costs.

- There is a perception that facilities working to comply with the regulations are targeted for scrutiny by WSBC, while non-complying facilities are ignored.

#### IDEAL STATE

- There is a fair, consistent application of the regulations and the application process.
- Compliance guidance is provided to the organization and employees in writing.

REF #	ISSUE	DESCRIPTION
C 8.3	Regulatory Knowledge	Small system facilities lack the required regulatory knowledge.

#### DISCUSSION

- Small systems lack education regarding WSBC regulations. Contractors spend a lot of time trying to educate small systems and fielding negative responses to the regulations.
- Contractors are often left to deliver the “bad news” about the additional costs needed to comply with WSBC regulations. These increased costs can result in contractors losing work to cheaper, non-compliant competitors.
- Contractors spend considerable unbillable time showing/teaching/debating with customers regarding the regulations, reducing customer satisfaction and increasing stress and tension in the working relationship.

#### IDEAL STATE

- Section 111 of the *Workers Compensation Act* requires consultation, education and enforcement. WSBC invests in contacting small system owners and creating educational support materials.
- A handbook for small systems, similar to the WSBC handbook on lead, would be helpful.

REF #	ISSUE	DESCRIPTION
C 8.4	Administrative Timeline	A heavy burden is placed on facilities to file administrative applications. Once filed, WSBC’s application processing timeline is extremely lengthy.

#### DISCUSSION

- The effort required to meet the administrative demands of the WSBC regulations diverts resources away from improving worker safety.

- Paperwork and applications processed by WSBC require a processing time of 4-10 weeks (60-90 days for a repeat alternate measure application). This timeframe impacts the scheduling of potentially critical infrastructure work and makes it difficult to accommodate alternate measures in regular maintenance and project schedules. Some applications for alternate measures have taken more than a year—projects cannot be held up this long.
- Definitions for adjacent piping, through piping and orifices need to be clearer so that individuals without expertise in the regulations know when the process is required. Slide gates in wastewater channels is another area that should be clarified.
- Reviews of extensions are time-consuming and bureaucratic with minimal benefit, particularly when no changes have occurred at a location. WSBC reviews of extension applications take a long time.
- The percentage of projects that require applications to WSBC is particularly high because of the definitions in Part 9.
- Alternate measures applications, engineering reviews and certifications for isolation cause delays in being able to perform critical work for breakdown repairs. This can lead to higher chances of public health, safety and property damage issues because they involve critical services like fire hydrants, and hospitals.
- The alternate measures process is impractical and takes significant time, leading, in some cases, to loss of service.

#### IDEAL STATE

- Changes to the regulations (outlined in previous sections) that would reduce the number of alternate measures and other documents to be filed.
- A streamlined process is implemented for no-change renewals.
- A prescribed timeline for reviewing and responding to submissions is available and adhered to.

## BACKGROUND

The water sector in British Columbia is responsible for managing small, medium and large water systems. The sector employs more than 6,200 people across the province, as well as a network of supply and service providers and consultants.

The BC Water and Waste Association (BCWWA) is a not-for-profit organization representing more than 4,000 water professionals in BC and the Yukon. Our members work every day to keep our water systems clean and safe. BCWWA members are employed in many professions, including water and wastewater facility operators, utility managers, engineers, technicians and technologists, consultants, government policy and regulatory staff, backflow assembly testers, cross connection control specialists, researchers, and suppliers.

The BCWWA worked with a working group (see Acknowledgements) comprised of a wide cross-section of the water sector, including representatives from the BC Municipal Safety Association (BCMSA), municipalities, consulting firms, contractors, and the federal government, to communicate the key issues the water sector faces in complying with Part 9 of the WorkSafeBC (WSBC) regulations.

In a workshop hosted by Metro Vancouver on October 25, 2017, the participants documented the common issues and impacts the current WSBC regulations have on the sector. Following the workshop, the results of the consultation were presented at industry conferences for feedback, and a portion of the working group reviewed the resulting document on September 25, 2018.

Throughout the sessions, participants expressed their motivation for participating in this process:

“Bring a consolidated voice on behalf of the water and wastewater association on the regulation.”

“Delayed emergency repair situation last year ... could have cost homes and impacted public safety.”

“Employer’s risk. WSBC enforces confined space requirements with little regard for actual safety risk. Employers are driven to emphasize trivial safety risks in confined space work above more serious risks due to WSBC priorities.”

“Just want my guys to go home safe every day.”

“A good set of regulations will improve workplace safety.”

“Things are being built for regulation, not for worker safety. In some cases, this is at an extraordinary cost to tax payers when the priority/driver isn’t worker safety.”

“How do we get this regulation to work for small systems, including First Nations?”

“Alternative measures process is put in place to compensate for a flawed regulation.”

“Confined spaces are currently defined by geometry, not risk level/hazards.”

“Regulation should not have to be interpreted for us. We should be able to do it ourselves.”

“Losing business because I’m complying, when others are gaining because they aren’t.”

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- Greg Anderson, *Mearl's Machine Works Ltd.*

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