

Chapter 15

Water Security Agency—Regulating Wastewater Systems

1.0 MAIN POINTS

Effectively regulating public wastewater systems¹ is essential to protecting our environment and in turn, the health and safety of residents. Wastewater systems treat wastewater² so that it can be safely discharged, limiting the negative impacts on the environment and human health. Without proper treatment, effluent³ released directly into water bodies or onto land can contaminate the environment. As removing these contaminants takes time and financial resources, it is preferable to prevent contamination from happening in the first place.

The Water Security Agency (Agency) is responsible for regulating public wastewater system owners⁴ who are ultimately responsible for ensuring that wastewater is adequately treated before being released into the environment.

For the period of April 1, 2013 to March 31, 2014, the Agency had effective processes to regulate public wastewater systems, except for the following areas. The Agency should:

- › Update its wastewater system design requirements and regulations to reflect upcoming stricter effluent standards
- › Address non-compliance of wastewater system owners that do not upgrade wastewater systems for subdivision expansions
- › Require and review that mechanical wastewater system owners are meeting effluent sampling requirements throughout the year
- › Report wastewater system non-compliance to the public

2.0 INTRODUCTION

Municipalities, Saskatchewan Water Corporation, and others (e.g., Hutterite colonies, provincial or regional parks) own and operate public wastewater systems which treat and release the majority of wastewater from homes, businesses, and institutions (e.g., schools). Wastewater systems are expensive infrastructure developments that are expected to last for 30 to 50 years, although they may be upgraded to accommodate public needs such as population growth. Public wastewater system owners are ultimately responsible for ensuring that effluent has undergone an adequate treatment process before being released into the environment.

¹ Public wastewater systems consist of all municipal wastewater systems and any system that has a design flow of effluent that is 18 cubic meters or more in a 24-hour period.

² Wastewater is water contaminated by waste from residential, commercial, and industrial processes.

³ Effluent is wastewater that has gone through a treatment process.

⁴ The Agency does not regulate wastewater systems on First Nations or other federal lands, smaller semi-public systems, or private on-site wastewater disposal systems at farms, ranches, or acreages.



Properly treating wastewater is a key step in protecting aquatic habitats and sources of drinking water, and keeping streams, rivers, and lakes clean for recreational activities.

The Agency is responsible for regulating public wastewater system owners, as described in *The Environmental Management and Protection Act, 2002* (EMPA 2002) and *The Water Regulations, 2002* (Regulations). The Agency regulates public wastewater system owners by issuing permits to construct and operate wastewater systems, inspecting wastewater systems, monitoring effluent sampling results, and enforcing permits. Effective processes for regulating public wastewater systems are essential to avoid and mitigate the threats posed by wastewater to our water resources.

At November 2013, the Agency inspected and regulated 590 public wastewater systems, the vast majority of which were lagoon systems.⁵

Figure 1 – Wastewater System Types in Saskatchewan as of November 2013

Type of System	Number
Mechanical systems	17
Lagoon systems	567
Collection only systems ⁶	6
Total	590

Source: Water Security Agency records

3.0 WASTEWATER TREATMENT

The goal of wastewater treatment is to reduce or remove organic matter, solids, nutrients, disease-causing organisms, and other pollutants from wastewater before discharge, especially if discharging into a body of water. Treatment of wastewater is a multi-stage process. Treatment significantly reduces the level of contaminants found in wastewater to eliminate adverse short- or long-term effects on the environment before it re-enters a body of water, is applied to the land, or is reused.

In Saskatchewan, mechanical wastewater systems or lagoon systems are most commonly used for treating wastewater. The type of treatment depends on several factors including the system's location and how many people are using the system.

Laws require mechanical wastewater systems in Saskatchewan to have at least a secondary treatment phase. As reflected in **Figure 2**, when wastewater is treated in a mechanical wastewater system, it undergoes several treatment phases. These may include:

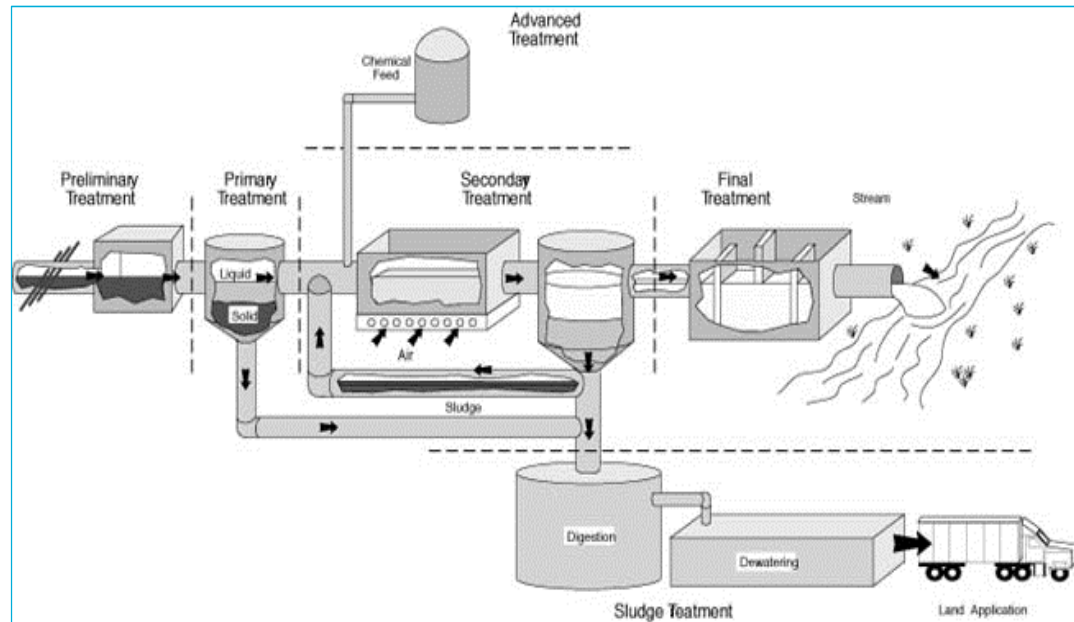
- › Preliminary treatment that screens out debris in the wastewater.
- › Primary and secondary treatments that allow suspended solids to settle out of water and use biological processes to reduce the level of contaminants.

⁵ Lagoon systems are shallow ponds used for biological treatment of wastewater.

⁶ Per the Regulations, collection systems are pipes, conduits, drains, mains, manholes, and appurtenances used for collecting and conveying sewage.

- Advanced treatment that involves the removal of specific components from wastewater, such as nitrogen, phosphorus, and heavy metals (e.g., through chemical treatment). Advanced treatment can also include additional processes that remove disease-causing organisms from wastewater (e.g., disinfection through use of ultraviolet light).

Figure 2—Example of Mechanical Wastewater System



Source: www.rpi.edu/dept/chem-eng/Biotech-Environ/Environmental/WWTP_Principles.html (25 October 2013)

Lagoon systems are required to meet specific waste loading⁷ and storage requirements. Lagoon systems often have two ponds working in a series that provide similar functions to a mechanical wastewater system but at a slower rate (i.e., provide primary and secondary treatments). Ponds allow suspended solids to settle out, and micro-organisms in the pond to consume the organic materials and nutrients in the wastewater. Lagoon systems will generally achieve secondary treatment in the fall, provided the systems are not overloaded and spring discharges benefit from significant dilution during spring runoff.

4.0 WASTEWATER REGULATION

4.1 Wastewater Regulatory Standards—Provincial and Federal

The Regulations set the standards for effluent treatment and quality in the province. As previously noted, the Agency is responsible for monitoring compliance with standards in the Regulations. Currently, standards for mechanical systems and lagoon systems differ. For example, effluent leaving mechanical systems must meet a certain quality, whereas effluent leaving lagoon systems is not required to meet a certain quality. Rather, current

⁷ A loading standard refers to the application of organic matter in the wastewater. It is set in the Regulations as 30 kilograms per hectare per day.



provincial Regulations require lagoon systems to be designed to a loading and storage standard that should result in effluent of a certain quality.

In 2012, the Government of Canada established *The Wastewater Systems Effluent Regulations* (Federal Regulations) that include effluent standards that come into effect in January 2015. Environment Canada is responsible for administering the Federal Regulations, not the Agency.

The Federal Regulations set minimum effluent quality standards for those wastewater systems that receive an average wastewater volume of more than 100 cubic meters daily and ultimately discharge into surface water that are frequented by fish. The Federal Regulations, once effective, will impact an estimated 71 Saskatchewan wastewater systems. Unless these system owners have applied for a transitional authorization,⁸ they will be required to comply with the minimum effluent quality standards in January 2015.

At March 2014, the Agency is in discussion with Environment Canada to carry out federal regulatory duties on Environment Canada's behalf. The Agency noted it hopes to finalize an agreement by June 2014.

Saskatchewan has also endorsed the Canada-wide Strategy for the Management of Municipal Wastewater Effluent (CCME Strategy), developed by the Canadian Council of Ministers of the Environment.⁹ All provinces and territories except Newfoundland and Labrador, Nunavut, and Quebec endorsed this strategy in 2009. The CCME Strategy includes effluent standards (National Performance Standards) that apply to municipal wastewater systems that deposit more than 10 cubic meters of effluent daily to surface waters. The National Performance Standards will impact an estimated 88 Saskatchewan wastewater systems (including the 71 impacted by the Federal Regulations). These standards are stricter than those currently in effect in Saskatchewan, but are equivalent to the Federal Regulations.

Also at March 2014, the Agency indicated it has drafted regulations that support the National Performance Standards and the Federal Regulations. As these regulations are still draft, wastewater systems in Saskatchewan are not yet required to meet these stricter effluent standards.

4.2 Saskatchewan's Wastewater Regulatory Regime

The Agency, through its Environmental and Municipal Management Services Division, is responsible for regulating wastewater systems. As of March 2014, the Agency had 17 environmental project officers (EPOs) who regulate public wastewater systems. EPOs grant permits to operate wastewater systems. Wastewater system owners must comply with the standards set out in the permits.

To ensure wastewater system owners are meeting the standards, the Agency must monitor the results of owners' required wastewater testing and inspect most systems

⁸ Transitional authorizations can exempt low-risk wastewater systems from complying with the Federal Regulations until December 2040 while undertaking system upgrades.

⁹ The Canadian Council of Ministers of the Environment is an inter-governmental organization in Canada with members from the federal government, 10 provincial governments, and three territorial governments. Membership is at the ministerial level and meetings typically occur at least annually to discuss national environmental issues.

annually¹⁰. When a wastewater owner does not comply with the permit, the Agency has a variety of ways to enforce compliance and communicate its concerns to the owner.

5.0 AUDIT OBJECTIVE, SCOPE, CRITERIA, AND CONCLUSION

The objective of this audit was to assess whether the Agency had effective processes to regulate public wastewater systems in a manner that protects the environment and human health. We assessed the Agency's processes for the twelve-month period of April 1, 2013 to March 31, 2014.

As the Agency was not responsible for administration of the Federal Regulations during the audit period, regulating compliance with the Federal Regulations was not included in our audit.

We examined the Agency's policies, procedures, processes, and database reports. We tested a sample of permit applications and approvals, interviewed Agency staff, and attended wastewater system inspections along with Agency staff.

To conduct this audit, we followed the standards for assurance engagements published in the *CPA Canada Handbook – Assurance*. To evaluate the Agency's processes, we used criteria based on our related work, literature including reports of other auditors, and consultations with management. The Agency's management agreed with the criteria (see **Figure 3**).

Figure 3—Audit Criteria

To have effective processes to regulate public wastewater systems in a manner that protects the environment and human health, the Water Security Agency should:

- 1. Permit and monitor wastewater system constructions/expansions**
 - 1.1 Set and communicate appropriate requirements for wastewater system constructions/expansions
 - 1.2 Issue appropriate construction/expansion permits
 - 1.3 Confirm whether owners meet construction/expansion requirements
- 2. Permit and monitor wastewater system operations**
 - 2.1 Set and communicate appropriate requirements for operating wastewater systems
 - 2.2 Issue appropriate operational permits
 - 2.3 Regularly assess compliance with operational permit terms and conditions
- 3. Address and report identified non-compliance with permits**
 - 3.1 Identify non-compliance and serious risks
 - 3.2 Require action on non-compliance
 - 3.3 Report non-compliance to wastewater system owners, senior management, and the public

We concluded that, for the period of April 1, 2013 to March 31, 2014, the Water Security Agency had effective processes to regulate public wastewater systems except that it needs to:

- **Update its wastewater system design requirements and regulations to reflect upcoming stricter effluent standards**
- **Address non-compliance of wastewater system owners that do not upgrade wastewater systems for subdivision expansions**

¹⁰ Smaller, non-discharging systems are inspected every second year as they present a lower risk to the environment.



- › **Require and review evidence that mechanical wastewater system owners are meeting effluent sampling requirements (i.e., frequency and quality levels) throughout the year**
- › **Report wastewater system non-compliance to the public**

6.0 KEY FINDINGS AND RECOMMENDATIONS

In this section, we describe our key findings and recommendations related to the audit criteria in **Figure 3**.

6.1 Update Design Requirements and Monitor “Parallel Growth”

6.1.1 Design Requirements Need Updating

EMPA 2002 requires the Agency to issue permits for the construction, expansion, or alteration of public wastewater systems. In general, EMPA 2002 requires that wastewater systems be appropriately designed and built so effluent will meet the minimum provincial effluent quality standards.

The Agency sets and communicates design requirements through its Guidelines for Sewage Works Design (guidelines). These guidelines are available to the public online at www.saskh20.ca (SaskH20 website). As well, the Agency communicates its design requirements through presentations at provincial water conferences, engineer stakeholder meetings, and Saskatchewan Association of Rural Municipalities and Saskatchewan Urban Municipalities Association meetings.

The loading and storage design of a wastewater system is critical to its ability to adequately treat wastewater. For example, the ability of a lagoon system to adequately treat wastewater (i.e., meet a certain effluent standard) is dependent on the amount of time wastewater is subjected to biological processes, the makeup of wastewater that requires treatment, and its design. Currently, the Agency requires lagoon systems to hold a minimum of 180 days of wastewater storage in an approved loading and storage design.

For wastewater systems to meet effluent standards outlined in the Federal Regulations and CCME National Performance Standards (see **Section 4.1**), the Agency has drafted new regulations that include requirements for lagoon systems. For example, these new regulations will require new or expanded lagoon systems to hold at least 220 days of wastewater storage. This should result in improved effluent quality from lagoon systems. However, at March 2014, the Agency had not updated its design requirements or regulations. The Agency, as an interim measure, has been approving construction or expansion permits with the 220-day storage requirement, along with a stricter loading and storage design for those systems that will be impacted by the Federal Regulations.

Without updated regulations and design requirements that meet the upcoming stricter standards,¹¹ there are inconsistent minimum standards for lagoon systems being built or expanded. This creates a risk that newly constructed or expanded lagoon systems will discharge inadequately treated effluent, increasing the negative impacts on the environment.

1. **We recommend that the Water Security Agency update its wastewater system design requirements and regulations so that new wastewater system constructions and expansions are designed to meet future stricter effluent standards.**

6.1.2 Issuing Appropriate Construction/Expansion Permits

When wastewater system owners decide to construct or expand a wastewater system, they must submit a standard application for the Agency's review and approval in order to receive a construction/expansion permit.

The application requires supporting information that varies depending upon the nature and extent of the construction or expansion. For example, new wastewater construction applications must include a downstream use and impact study¹² completed by professional engineers.

Agency staff (Engineering and Approvals Section) must review applications to determine whether the proposed design will meet the regulatory requirements and the Agency's design guidelines prior to issuing a permit. The construction/expansion permit contains conditions that the wastewater owners must meet. For example, permits indicate the effective and expiry dates of the permit, and the construction standards and specifications the owners must adhere to. From April 1, 2013 to March 31, 2014, the Agency issued about 120 construction/expansion permits.

We found that all six of the applications we examined contained the necessary documentation to obtain a permit, and permits issued were appropriate.

Since 2009, the Agency has adopted a "parallel growth policy". This policy applies to owners where existing wastewater systems do not have the capacity to support new developments (e.g., residential subdivisions). Wastewater system owners sign "parallel growth agreements" with the Agency that outline a commitment for the subdivision expansion to occur along with the upgrade of the associated wastewater system. Once signed, the Agency notifies the Ministry of Government Relations that it has no objection with the subdivision expansion approval. The Agency then approves wastewater system construction permits with a condition that allows a new subdivision to be built at the same time as a new wastewater system is being built or upgraded to support the new development (i.e., "parallel growth" permits). See further discussion in **Section 6.1.3**.

¹¹ As noted in **Section 4.1**, Federal Regulations and CCME National Performance Standards, which apply to certain wastewater systems, set minimum effluent quality standards that are stricter than the Regulations currently in effect in Saskatchewan. The Federal Regulations and CCME National Performance Standards do not set design requirements for the applicable wastewater systems, therefore the Agency must set minimum design requirements to meet effluent quality standards set by CCME and the federal government.

¹² A downstream use and impact study assesses the potential impact the wastewater system will have on its surrounding environment.



6.1.3 Need to Ensure Timely Wastewater System Upgrades

If wastewater systems are not built according to plan, there is a risk that wastewater will be inadequately treated. Wastewater system owners contract professional engineers to design and oversee wastewater system constructions and expansions. Owners are required to submit to EPOs “as built” drawings prepared by the engineers after constructions and expansions are complete.

We found that for a sample of three constructions/expansions, the EPOs did not receive “as-built” engineering drawings as expected. However, EPOs appropriately followed up with wastewater system owners to request the drawings.

Similar to the findings reported in our *2013 Report – Volume 1*, Chapter 17, in some cases, the subdivision expansions approved under the “parallel growth policy” occurred without the requisite wastewater system upgrades taking place. Without the required upgrades, there is an increased risk that wastewater is not being properly treated. We also reported that the Agency did not have an enforcement policy for wastewater system owners that do not follow through with their upgrade commitments.

Since our *2013 Report – Volume 1* was issued, in July 2013, the Agency developed a Parallel Growth Compliance and Enforcement Protocol (Protocol) applicable to both waterworks and wastewater systems. The Protocol provides staff with enforcement actions for addressing wastewater system owners who do not follow the parallel growth agreements.

In 2 out of 10 parallel growth agreements, we found owners did not meet their upgrade commitments by the required deadline and the Agency did not take enforcement action. There are 10 other parallel growth agreements where the upgrade commitments deadline had not passed as of March 2014. Without timely wastewater system upgrades, inadequately treated effluent will continue to be discharged, negatively impacting the environment.

2. We recommend that the Water Security Agency address non-compliance of wastewater system owners that do not upgrade wastewater systems for subdivision expansions.

6.2 Improve Monitoring of Mechanical Wastewater Systems

6.2.1 Setting and Communicating Operational Requirements

EMPA 2002 requires the operation of public wastewater systems to be carried out through permits issued by the Agency. We found the Agency adequately communicated its operational requirements to wastewater owners and operators through permits and through information available to the public online at the SaskH2O website. As well, the Agency held various stakeholder meetings to communicate changes coming with the Federal Regulations and the CCME Strategy.

The Agency has made EPOs responsible for approving and issuing operating permits to wastewater system owners. Permits require wastewater systems to have certified operators working at them. We found that the level of operator certification required changes appropriately with the size and type of the system.

The Regulations, and the Agency's guidelines and permits, outline requirements (frequency and quality levels) for effluent sampling. We found that permit requirements vary based on the size of wastewater facilities, where they discharge (e.g., fish-bearing or non-fish-bearing waters), how often they discharge, and whether they are impacted by industrial activities.

The Regulations set specific limits for each key measure described in **Figure 4** and require wastewater operators to sample them.

Figure 4—Key Measures of Wastewater Treatment

Two key measures of wastewater treatment are:

- **Total suspended solids** – refers to the particles of matter that may be present in wastewater, and can line the bottoms of rivers and destroy habitat for aquatic life.
- **Oxygen demand** – refers to the amount of oxygen required to break down waste. This will impact the amount of oxygen available, in the discharged effluent, to support aquatic life.

Source: *The Water Regulations, 2002*, section 16(3)

The Regulations also require wastewater operators of both lagoon systems and mechanical systems to monitor wastewater effluent quality through the submission of effluent samples to independent labs for testing. These labs upload the effluent quality results into the Agency's wastewater system database (database). The Agency uses this database to update effluent quality results on the SaskH2O website.

Because lagoon systems typically discharge effluent only twice per year, lagoon system operators are required to submit samples to independent labs only at times of discharge. However, most mechanical wastewater systems in the province continuously discharge a large volume of effluent into the environment. Because of this, mechanical system operators are required to regularly submit effluent samples to independent labs for testing, as well as conduct daily on-site effluent testing.

6.2.2 Issuing Appropriate Operational Permits

The Agency uses detailed protocol and permit templates to help guide its EPOs through the permitting process. EPOs typically issue mechanical system operational permits for a two-year period and lagoon operational permits for up to a five-year period.

We found that EPOs appropriately issued operational permits and permits had consistent and appropriate requirements that aligned with permit templates and complied with the Regulations.



6.2.3 Better Monitoring Needed for Mechanical Wastewater Systems

As noted in **Section 2.0**, the Agency regulates 590 public wastewater systems. The Agency's inspection policy expects:

- › Public wastewater systems to be inspected once per year except for non-discharging lagoon systems¹³
- › Non-discharging lagoon systems to be inspected once every two years
- › Re-inspection following a change to a wastewater system
- › Inspection of all newly commissioned or expanded systems upon completion

We found the Agency completed the majority of its inspections as required by its policy.

EPOs complete checklists during inspections to determine whether operators meet permit requirements (operational terms and conditions). Using the checklist, EPOs inspect a number of areas as set out in **Figure 5**. For example, EPOs confirm that operators sample effluent as required (i.e., review on-site effluent testing and independent lab results). EPOs also look for upset conditions (i.e., instances where quality levels were not met in released effluent) that operators are required to report to the Agency.

We found the EPOs properly completed checklists for the three wastewater system inspections that we observed. As well, in our sample of 31 wastewater systems, we found that inspection checklists were completed as required.

Figure 5—Summary of Areas Covered During Inspections of Mechanical Wastewater Systems

- › General (e.g., approved system, certified operator)
- › Secondary Treatment Process (e.g., effluent quality demonstrated to meet permit requirements)
- › Reporting (e.g., immediate reporting of an upset condition or exceedance)
- › Disinfection (e.g., disinfection performed as per permit)
- › Records (e.g., locations where samples are taken are appropriate, results of any tests and dates of discharge are documented)
- › Testing (e.g., sampling is done as required)

Source: Water Security Agency's Inspection Report (See www.saskh20.ca)

As described in **Section 6.2.1**, because most mechanical wastewater systems in the province continuously discharge a large volume of effluent into the environment, the Agency requires testing for additional contaminants and more frequent testing for these systems. Effluent testing consists of both on-site testing and the regular submission of samples by wastewater systems owners to independent labs for testing.

In addition to the stricter effluent testing, we found the Agency requires Regina and Saskatoon (the largest mechanical systems in the province) to submit regular (i.e.,

¹³ A non-discharging lagoon system is where the lagoon does not need to release wastewater into the environment because the lagoon volume exceeds the volume of wastewater being input.

monthly) effluent reports, which are regularly reviewed by EPOs. These effluent reports include more effluent testing detail (e.g., on-site effluent sample results) than the information uploaded to the Agency's database.

However, we found the Agency did not require other large mechanical wastewater systems, generally used in cities, to submit effluent reports throughout the year for EPO review. As well, EPOs only reviewed effluent testing results in the Agency's database during their annual inspections of these systems. The Agency did not use its database to automatically notify EPOs when effluent testing results indicated instances where effluent standards (e.g., total suspended solids or oxygen demand levels) were not met.

In addition, we found sampling is not being performed at some of the 17 mechanical systems as frequently as required and the effluent being discharged is not meeting the required quality levels in all cases. **Figure 6** shows the number of mechanical systems non-compliant with effluent sampling frequency and effluent quality.¹⁴

Figure 6—Number of Mechanical Wastewater Systems Non-Compliant with Effluent Sampling Frequency and Effluent Quality Requirements in 2013-14

Year of Inspection	Effluent Sampling Frequency Non-Compliance	Oxygen Demand Non-Compliance	Total Suspended Solids Non-Compliance
2013-14	4	2	8

Source: Based on mechanical system 2013-14 inspection reports available on SaskH2O.

Note: Non-compliance can result from one or more missed effluent tests as required by the permit and effluent exceeding the required quality levels in one or more tests

Because most mechanical wastewater systems continuously discharge a large volume of effluent into the environment, lack of regular Agency reviews of effluent sampling results increases the risk that negative environmental impacts will go undetected and not be addressed in a timely manner.

- We recommend that the Water Security Agency require and review evidence that mechanical wastewater system owners are meeting effluent sampling requirements throughout the year.**

6.3 Report Identified Non-Compliance to the Public

6.3.1 Identifying Non-Compliance and Serious Risks

The Regulations require all discharging lagoon systems and mechanical wastewater systems to be annually inspected for compliance with their permit requirements. Following an inspection, an EPO discusses all identified issues in the inspection report with the wastewater system operator. Both parties sign the report as evidence that the discussion took place and the wastewater system owners receive a copy. We found that for the sample of inspection reports that we examined, reports were posted on the SaskH2O website in a timely manner.

¹⁴ Effluent quality non-compliance is reflected by the number of mechanical systems that do not meet key wastewater treatment quality standards (i.e., oxygen demand and total suspended solids), as shown in **Figure 4**.



At March 2014, the Agency had identified issues for 81 wastewater systems (14% of the total). These wastewater systems had issues such as aging infrastructure in need of replacement, inadequate lagoon sizing due to growing populations, and inadequate effluent treatment. Management indicated the infrastructure changes required to fix these problems would cost wastewater owners millions of dollars. Management further indicated that it highlights to the Ministry of Government Relations those wastewater system owners that require financial support for infrastructure upgrades.

Our review of a sample of 31 inspection reports found the following non-compliance issues identified by the Agency. Wastewater owners failed to:

- › Obtain a permit to construct a wastewater system.
- › Employ a certified operator. A closer look into operator certification found that as of March 2014, 35 out of 590 wastewater systems did not employ a certified operator as required by their permits. All 35 non-certified operators were operating lagoon systems. The simplicity of operations decreases the risk to the environment.
- › Perform required effluent sampling.
- › Keep adequate on-site records of effluent sampling results.
- › Report an upset condition.¹⁵ The Agency expects prompt reporting by wastewater system operators of such conditions to ensure owners take prompt action to prevent the situation from continuing to occur.

We found that 2 out of 31 inspection reports we examined included instances of serious, ongoing non-compliance at mechanical systems that had led to improperly treated effluent being released into the environment. In these two instances, we saw evidence that the Agency is working with the owners to take steps to address the non-compliance problems. We noted that one owner was undertaking a wastewater system assessment to determine the needed actions. The assessment report is due to the Agency by June 2014. The other owner is required to construct or alter its wastewater system by December 2016 in order to meet effluent standards in the Regulations. The Agency helps minimize the negative impacts of these systems on the environment by requiring owners to take timely action on non-compliance.

6.3.2 Requiring Action on Non-Compliance with Operating Standards

The Agency has a Drinking Water and Wastewater Enforcement Protocol and Supplemental Compliance and Enforcement Protocol. These protocols outline actions the Agency should take for wastewater systems that have continued non-compliance with permit terms and conditions. Non-compliance can escalate from a verbal warning, to a notice of violation or a warning letter, to a sewage works protection order,¹⁶ to an administrative penalty, and finally, to a formal charge.

¹⁵ Upset conditions are instances where wastewater is discharged into a source of water before it is properly treated.

¹⁶ EPOs issue sewage works protection orders (SWPOs) to the person responsible for a wastewater system to facilitate compliance with permits and to protect human health or the environment. SWPOs contain specific actions that must be taken by the person in charge of a wastewater system. Required actions vary, from suspending operation of a wastewater system, to extending or altering a wastewater system, to improving records and reports.

In all of the 31 wastewater system inspections we examined, we found the Agency took appropriate measures to mitigate the non-compliance problems identified.

6.3.3 Improve Non-Compliance Reporting to the Public

The Agency collects and stores data on inspection results and wastewater quality by individual wastewater system. We found the Agency shared inspection results in a timely manner and disseminated wastewater systems' effluent quality information to the public via the SaskH2O website.

Also, the Agency reports some wastewater information through its *2012/13 State of Drinking Water Quality Report*. For example, the Report indicates that approximately 120 Saskatchewan wastewater systems were identified as having a discharge that may reach surface water and represent a risk to source waters under certain conditions. This Report also provides statistics on annual enforcement activities the Agency has taken.

However, we found that the Report contains limited information explaining why the Agency has determined these 120 wastewater systems are a risk to the environment and what the Agency is doing to address these systems. The Agency does not provide summary information on the Agency's inspection findings on wastewater systems' non-compliance with permit terms and conditions. For example, the Report did not indicate the number of wastewater systems it found operating without a certified operator or not meeting effluent quality requirements.

4. We recommend that the Water Security Agency report to the public on wastewater systems' non-compliance with permits.

7.0 SELECTED REFERENCES

Canadian Council of Ministers of the Environment. (2009). *Canada-Wide Strategy for the Management of Municipal Wastewater Effluent*.

www.ccme.ca/ourwork/water.html?categoryid+81 (17 October 2013).

Environment Canada. (2012). *Municipal Wastewater Treatment Indicator*.

www.ec.gc.ca/indicateurs-indicators/default.asp?lang=En&n=2647AF7D-1 (18 October 2013).

Environment Canada. (2012). *Wastewater Management*. [www.ec.gc.ca/eu-](http://www.ec.gc.ca/eu-ww/default.asp?lang=En&n=0FB32EFD-1)

[ww/default.asp?lang=En&n=0FB32EFD-1](http://www.ec.gc.ca/eu-ww/default.asp?lang=En&n=0FB32EFD-1) (21 March 2013).

Environment Canada. (2010). *Wastewater Pollution*. [www.ec.gc.ca/eu-](http://www.ec.gc.ca/eu-ww/default.asp?lang=En&n=6296BDB0-1)

[ww/default.asp?lang=En&n=6296BDB0-1](http://www.ec.gc.ca/eu-ww/default.asp?lang=En&n=6296BDB0-1) (17 October 2013).

Justice Canada. (2012). *Canadian Fisheries Act: Wastewater Systems Effluent Regulations*.

www.laws-lois.justice.gc.ca/eng/regulations/sor-2012-139/FullText.html (17 October 2013).



Saskatchewan Environment. (2013). *State of Drinking Water Quality in Saskatchewan*. Regina: Department of Environment.
www.sask20.ca/WaterInformationFactSheet_Drinking_AnnualReports.asp (17 October 2013).