Ministry

Environment and Protected Areas

Describe: Basic Job Details

Position

Position ID

Position Name

Drinking Water Operations Spec

Current Class

Engineering & Related Level 2

Job Focus

Operations/Program

Supervisory Level

00 - No Supervision

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

Employee

Employee Name (or Vacant)

Vacant

Organizational Structure

Division, Branch/Unit

Regulatory Assurance, Regulatory Programs Branch

Supervisor's Position ID

Supervisor's Position Name

Supervisor's Current Class

Manager (Zone 2)

Design: Identify Job Duties and Value

Changes Since Last Reviewed

Date yyyy-mm-dd

2021-12-21

Responsibilities Added:

No Responsibilities added at this time - minor wording updates. New format.

Responsibilities Removed:

None

Job Purpose and Organizational Context

Why the job exists:

This position is a key part of the Regulatory Programs Branch that is responsible for the integrity of public drinking water supplies as mandated under the Water for Life Strategy and the Department Business Plan. The main responsibilities are to assist water treatment plant operators and owners with continuous improvement of potable water quality, educate waterworks personnel and owners on the full spectrum of source to tap protection and work

with regional Health Authorities to mitigate situations where public health is threatened. This is a specialized and highly technical professional position, geographically located in regions, working closely with regional compliance inspectors and approval writers. This provincial regulatory programs position also provides guidance to municipal, industrial and consulting clients during normal and emergency situations involving drinking water supplies.

Responsibilities

Responsibilities:

1. Drinking water quality and waterworks operations are continually improved.

Key Activities:

- Assist operators to optimize water treatment plants to operate "beyond compliance" such that the best possible water quality is produced for consumers.
- Analyze water treatment plant design to determine if upgrades or modifications are required to allow plant performance to be optimized.
- Assess and consult with professional consulting engineers, on the proposal for water treatment process upgrades, new water treatment process installation, after comprehensive "pilot testing".
- Interpret bacteriological, chemical and physical monitoring results when complaints arise or when requested.
- Provide critical insight and expertise into regulatory programs document development and education for operators around new initiatives including adoption of Health Canada standards and guidelines, review of Drinking Water Safety Plans and education on source water protection planning initiatives.

2. Waterworks owners and operators are educated on providing "source to tap" protection

Key Activities:

- Source protection plans are facilitated to mitigate contamination of raw water
- Advice is provided on Operations Plans to ensure proper maintenance and emergency preparedness
- Laboratory quality assurance procedures are reviewed with operators
- Provide technical, regulatory and operational presentations related to water treatment processes to various audiences

3. Public Health emergencies are mitigated

Key Activities:

- Advice is provided to Public Health Authorities when a "boil water advisory" may be required
- Lead, organize and collaborate with various stakeholders including inter-governmental organizations while addressing emergency events related to drinking water including but not limited to pandemics, floods, droughts and ice jams
- Work closely with consultants, owners and operators to resolve situations where a boil water advisory was issued
- Interpretation of technical information to rescind a boil water advisory is provided

4. A comprehensive provincial drinking water program is maintained

Key Activities:

- Advice provided to approvals staff on pending amendments and /or renewals
- Advice is provided when requested from compliance inspectors and/or investigators
- Questions are answered on the application of the Waterworks Codes of Practice

5. Waterworks systems meet provincial standards

Key Activities:

- A facility assessment database is maintained
- Audits of pipeline and water main installations are conducted during construction, upon notification by consultants, in accordance with EPEA requirements
- Work closely with compliance staff to determine if abatement strategy is appropriate when non-compliance issues have been identified within a facility
- Access to funding programs is promoted

6. Service quality excellence is provided to the public and utilities

Key Activities:

- Complaints about potable water quality are acted upon with prompt personal contact with the complainant and waterworks authority
- Share assessments and provide feedback on engineering proposals for treatment process upgrades / implementation to municipal operations group, system owners including municipal administration and elected officials
- Specialized training and practical experience enhances advice on all aspects of waterworks operations
- Direction is given on where and how to obtain professional assistance for specific problems

Problem Solving

Typical problems solved:

The position, co-located in a regional office, will be expected to interact with all waterworks systems within the geographic boundaries delineated by regulatory programs branch. Extensive fieldwork is required to interact with the approved waterworks systems. As well, the scope of the waterworks systems will vary from the size of a city to as small as a community hall. Typically, expertise will be required to deal with both surface water supplies and groundwater supplies and the various treatment technologies that may be used for each type of source. The most complex situations will involve water supplies where the source is difficult to determine, such as when groundwater is classified as groundwater under the direct influence of surface water.

In addition, the drinking water operation specialist will be expected to interact pro-actively with both the Municipal Approvals and Compliance program delivery staff such that there is a synergistic approach to delivering the provincial drinking water program. While being the eyes and ears for these two programs the incumbent must take care not to compromise investigations or approval processes. A need for consistency between DWOS geographically located across the province and a need to have performance assessment on a provincial scope will require interactions with the other DWOS in the provincial Drinking Water Wastewater program team as well as key municipal drinking water data stewardship staff.

Types of guidance available for problem solving:

A high level of originality and judgment is expected in the abatement process as often drinking water systems and associated incidents are non-routine and unpredictable due to the different site-specific circumstances for each facility. The incumbent is expected to work with a diverse range of technical professionals, health professionals, tradespersons, regulators and administration to identify problems, deficiencies or areas for enhancement, develop possible site-specific solutions and appropriate strategies, and then proceed to implement the strategies to achieve the required goals/objectives/remedial measures. Action may include technical assessment, preliminary engineering to bring about physical process changes and educating communities of the need to follow up with corrective action. The incumbent will, at times, negotiate agreements and solutions.

Direct or indirect impacts of decisions:

Decisions will impact the health and safety of potable water across the province. Acting to ensure emergencies are handled quickly and effectively is paramount to success. Many years of experience is necessary as the consequence of

error is high in terms of human health, facility safety, and immediate expenditures of funds.

Key Relationships

Major stakeholders and purpose of interactions:

Daily interactions with staff including compliance, approvals and the operations certification team.

Frequent and ongoing interactions with ADM, executive director(s) and senior managers. The position also periodically interacts with municipal and facility representatives, operators of municipal and private water systems and the drinking water and related association(s).

The position also interacts with representatives from other ministries (e.g. Alberta Health Services, Alberta Health) as well as provincial and national subject matter working groups.

Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Bachelor's Degree (4 year)	Engineering	Science	PEng

If other, specify:

Job-specific experience, technical competencies, certification and/or training:

The work at this level requires either a civil/chemical engineering degree with courses in water treatment design and some practical experience or a registered engineering technologist with extensive (10 years or more) experience in waterworks. The most applicable experience must be in water treatment processes as opposed to water distribution. While theoretical knowledge is essential, the application of practical experience cannot be emphasized enough as the diversity of treatment processes and age of systems requires an ability to analyze each situation on its own merits.

Knowledge of the *Water Act, Environmental Protection and Enhancement Act, Potable Water Regulation, guidelines for Canadian Drinking Water Quality, Alberta Waterworks Standards*, operator certificate program and laboratory assurance program are essential.

The following skills and abilities necessary to deliver an effective drinking water abatement program:
- A strong knowledge of physical, chemical and biological processes and what constitutes "good engineering practice" in the municipal waterworks field, and the ability to apply their knowledge and experience to existing facilities independently;
- Strong problem solving skills, including the ability to evaluate and oversee pilot testing and/or process optimization
- Strong troubleshooting and operations skills to assess plant performance and demonstrate facility capabilities
- Expertise in public health and watershed protection principles to safeguard the public and raw water sources
- Detailed knowledge of quality assurance/quality control relating sampling, testing and interpretation of analytical data
- Effective communication and presentation skills to a variety of audiences
- Knowledge of legislation, standards, guidelines and other resource material to make decisions, back up recommendations and resolve conflicts
- A knowledge and understanding of personal safety and risk/hazard associated with the operation of facilities
- Instincts to know when an emergency response and/or investigation is needed

Behavioral Competencies

Competency	Level A B C D E	Level Definition	Examples of how this level best represents the job
Systems Thinking	○ ◉ ○ ○ ○	Considers inter-relationships and	Is aware of changing drinking water

		emerging trends to attain goals: • Seeks insight on implications of different options • Analyzes long-term outcomes, focus on goals and values • Identifies unintended consequences	regulations or industry practices and tries to ensure water system operators/owners incorporate into their operations and long-term plans. Actively encourage water system owners/operators to consider upgrades to their systems as required by impending regulatory changes.
Creative Problem Solving	○ ◉ ○ ○ ○	Focuses on continuous improvement and increasing breadth of insight: • Asks questions to understand a problem • Looks for new ways to improve results and activities • Explores different work methods and what made projects successful; shares learning • Collects breadth of data and perspectives to make choices	Consults with scientific, technical literature, industry experts and other when analyzing an operational problem at a water treatment plant. Helps operators/owners develop and weigh alternative solutions.
Develop Networks	○ ◉ ○ ○ ○	Works on maintaining close relations with all stakeholders: • Identifies key stakeholder relationships • Has contact with range of interested parties • Actively incorporates needs of a broader group • Influences others through communication techniques	Maintains a network of municipal water and wastewater system operators and owners. Builds relationships with these operators/owners over time. Delivers technical presentation to audiences at technical/ professional conference.
Drive for Results	○ ◉ ○ ○ ○	Works to exceed goals and partner with others to achieve objectives: • Plans based on past experience • Holds self and others responsible for results • Partners with groups to achieve outcomes • Aims to exceed expectations	Works with municipal drinking water operators to develop plans to improve water system performance or to solve operational problems.
Agility	○ ◉ ○ ○ ○	Works in a changing environment and takes	Keeps track of performance of municipal

		initiative to change: • Takes opportunities to improve work processes • Anticipates and adjusts behaviour to change • Remains optimistic, calm and composed in stressful situations • Seeks advice and support to change appropriately • Works creatively within guidelines	drinking water systems, identifies systems that are at risk and works with owners and operators to develop solutions. Seeks out additional expertise from peers, consultants and experts. Addresses emergency situations when the arise.

Assign

The signatures below indicate that all parties have read and agree that the job description accurately reflects the work assigned and required in the organization.

Employee Name	Date yyyy-mm-dd	Employee Signature
Supervisor / Manager Name	Date yyyy-mm-dd	Supervisor / Manager Signature
Director / Executive Director Name	Date yyyy-mm-dd	Director / Executive Director Signature