### TABLE OF CONTENTS

3.	Contr	ractor's Management Systems and Plans	3
	3.1	General	3
	3.2	Quality Management System	
	3.2.1	Province's Quality Objectives	
	3.2.2		
	3.2.3		4
		3.2.3.1 Document Control	5
		3.2.3.2 Internal Audits	
		3.2.3.3 External Audits	6
		3.2.3.3.1 Payment Adjustment	6
	3.2.4	Quality Management System Requirements	7
		3.2.4.1 General Requirements	7
		3.2.4.2 Design Requirements	
		3.2.4.3 Construction Requirements	
		3.2.4.4 O&M Requirements	
		3.2.4.5 Audits Requirements	10
	3.2.5		
		3.2.5.1 Payment Adjustment	
	3.3	Environmental Management System	
		3.3.1.1 Environmental Management System Accreditation	
	3.4	Safety Management Plan	
	3.5	Collaboration Plan	
	3.6	Handback on Expiry Plan	
	3.7	Construction Period Plans	
		3.7.1 Permitting Plan	
		3.7.2 Design Plan	
		3.7.3 Construction Management Plan	
		3.7.4 Construction Occupational Health and Safety Plan	
		3.7.5 Commissioning and Startup Plan	12
		3.7.5.1 Payment Adjustment	
		3.7.6 Intentionally Deleted	12
		3.7.7 Public Communication Plan	
		3.7.8 Interface Protocol	
		3.7.8.1 Payment Adjustment	
		3.7.9 Demolition and Decommissioning Plan	
	<b>a</b> a	3.7.9.1 Payment Adjustment	
	3.8	Operating Period Plans	
		3.8.1 Operation and Maintenance Plan	
		3.8.2 Emergency Response Plan	
		3.8.3 O&M Occupational Health and Safety Plan	
		3.8.4 Drinking Water Safety Plan	
		3.8.5 Odour Management Plan	
		3.8.6 Noise Control Plan	
		3.8.7 Staffing and Training Plan	
		3.8.8 Residuals Management Plan	
		3.8.9 License Management Plan	
		3.8.10 Security Plan	12

3.8.11	Call Centre Plan	
3.8.12	Water and Wastewater Sampling and Analysis Plan	
	1 0 1	
3.9.2		
3.9.3	Existing Facilities Occupational Health and Safety Plan	
	3.8.12 3.8.13 Existing 3.9.1 3.9.2	

### 3. CONTRACTOR'S MANAGEMENT SYSTEMS AND PLANS

### 3.1 GENERAL

Subject to the DBFO Agreement, the Contractor shall develop, implement, and maintain and shall monitor, update and manage during the Construction Period and the Operating Period, the Contractor's Management Systems and Plans to comply with the Project Requirements set out in this Schedule 18.

### **3.2 QUALITY MANAGEMENT SYSTEM**

The Contractor shall have a quality management system (the "**Quality Management System**") and the Quality Management System shall be one of Contractor's Management Systems and Plans. The Quality Management System shall provide framework for the integration and structuring of the various plans and systems that comprise the Contractor's Management Systems and Plans, all of which are described in this Section 3.

### 3.2.1 PROVINCE'S QUALITY OBJECTIVES

The Quality Management System shall support the Province's requirement for the Contractor to perform the Project, the O&M and the Existing Facilities O&M to the highest quality assurance standards and the following quality objectives:

- Assure the delivery of a potable treated water supply that meets Good Industry Practices for public health protection;
- Assure the delivery of wastewater and residuals management that meets Good Industry Practices for environmental protection;
- Assure the delivery of firefighting water supplies that meet Good Industry Practices for fire-fighting;
- Ensure that the Contractor implements a well-developed quality program to meet the Province's and the Contractor's objectives for the fulfilment of the DBFO Agreement;
- Provide durable, dependable, and high-quality assets that will meet the specified design life of the Infrastructure and provide dependable service after Handback;
- Complete work in accordance with schedules and deadlines;
- Integrate and coordinate designers, engineers, operators, permitting personnel, and construction contractors into all development, design, and review phases of the Project to verify the quality of the work;
- Develop and implement systems to assure that problems are discovered early, resolved quickly, corrected adequately, and do not recur; and
- Provide independent oversight equipped with adequate resources to assure that quality is not compromised.

# 3.2.2 PROVINCE'S ROLE IN QUALITY ASSURANCE

The Contractor shall be fully responsible for implementing its own comprehensive Quality Management System (including quality assurance and quality control) and shall not depend in any way on the observations of the Province to substitute for its own obligations. When requested by the Province, the Contractor shall provide duplicate copies of Quality Management System documents and records including:

- Quality control inspection reports;
- Quality control test reports;
- Audit and non-conformance reports;
- Quality assurance reports;
- Equipment test reports;
- Material test reports;
- CMMS and asset management records;
- Call Centre database records;
- Security reports;
- Records from the carrying out of the Water and Wastewater Sampling and Analysis Plan;
- SCADA System data including archived trends for Quality Monitors, Level Monitors and Flow Meters; and
- Quality control personnel qualifications and certifications.

### 3.2.3 CONTRACTOR'S QUALITY MANAGEMENT RESPONSIBILITIES

The Contractor is responsible for the development and implementation of the Quality Management System.

The Quality Management System shall integrate permitting, design, construction, operation, maintenance and asset management and shall include detailed quality assurance and quality control procedures, staffing assignments and communication protocols, training, and other aspects as set out below.

The Quality Management System shall define how the Contractor will ensure that the Province's quality objectives are met, including provisions for involving representatives of the Province in discussions related to quality and provisions for reporting quality assurance and quality control findings to the Province.

The Quality Management System shall ensure that:

- Project staff, including subcontractors' staff, is qualified to perform their duties and meet all necessary regulatory and project-specific technical requirements;
- Subcontractors establish and implement quality control programs that support the Contractor's Management Systems and Plans as a contractual requirement;
- The Contractor reviews subcontractors' quality plans, and audits subcontractors' work to ensure that the subcontractors' quality plans support the Contractor's and the Province's quality objectives and management system requirements;
- Materials and equipment are selected that meet the requirements of the Contractor's Design, the Technical Requirements and the Drinking Water Safety Plan;
- Communication and co-ordination procedures among team members are clearly defined and implemented, particularly if team members are in different locations;
- Quality control activities are documented and documents are properly managed and controlled;
- Data and information relating to the Project and the O&M is collected, stored and organized efficiently to support the management and reporting requirements of the DBFO Agreement;
- Work is properly planned and implemented according to established procedures;
- Work is reviewed and quality processes are audited by the Contractor for effectiveness;
- Deficiencies are documented and effective corrective action is promptly completed; and
- Work processes are continually improved through measurement of performance against the quality objectives (including both the Province's and the Contractor's objectives), analysis of root causes is conducted in the event of non-conformance, and feedback of lessons learned is acted upon.

### 3.2.3.1 Document Control

The Quality Management System shall include the Contractor's methods and systems for maintaining document control, including staff responsibilities.

The Contractor shall use an internet-based document management software system to provide access to records for the Province.

The Contractor shall include in the Quality Management System its methods for staff checking out files and preventing data, plans, reports, correspondence and other files and documents from being lost, stolen, or misplaced.

# 3.2.3.2 Internal Audits

The Contractor shall undertake annual internal Quality Management System audits to verify that the required level of Quality Management System performance during the Project permitting, design and construction as well as during the Operating Period is achieved to meet the Technical Requirements.

A full system internal audit shall be completed within one year of Execution of the DBFO Agreement and thereafter at least once per year until the end of the Term.

The Quality Management System internal audit shall include:

- Document reviews or system audits to ensure that the Contractor has plans and procedures in place to cover all the required aspects of the Quality Management System; and
- Compliance or procedural audits to ensure that the specified plans and procedures are being effectively implemented.

The Contractor shall make all Quality Management System records available to the Province at all times for inspection, review and further instructions.

All Quality Management System deficiencies identified by the internal audit must be addressed and corrective measures implemented by the Contractor.

### 3.2.3.3 External Audits

At any time during the Construction Period and the Operating Period, the Province may at its discretion and at its sole cost engage a third party to carry out a full system audit of the Quality Management System to verify that the required levels of Quality Management System performance are being achieved as required under the DBFO Agreement (the "External Audit").

The Contractor shall make available to the third party all Quality Management System records relating to the Project and the O&M. The Contractor must address and implement appropriate corrective measures for all Quality Management System deficiencies identified by the External Audit within 30 days of the Province providing the External Audit to the Contractor.

### 3.2.3.3.1 Payment Adjustment

If a deficiency or deficiencies identified by the External Audit have not been corrected within the specified time, a Payment Adjustment of \$2,000/week or any partial week, for the first four weeks and \$5,000/week or any partial week, thereafter shall apply until such deficiency or deficiencies are corrected.

## 3.2.4 QUALITY MANAGEMENT SYSTEM REQUIREMENTS

The Quality Management System shall as of the Execution of the DBFO Agreement be in form and substance as follows:

## 3.2.4.1 General Requirements

- A Quality Management System, that is consistent with all of the requirements of the ISO 9001:2008 that covers all activities, products and services related to the DBFO Agreement prior to the execution of those activities, products and services. The Quality Management System shall address all stages of the DBFO Agreement, including:
  - o Design;
  - Construction;
  - Existing Facilities O&M;
  - Operations;
  - o Maintenance;
  - o Asset management and renewal; and
  - Performance based payment adjustments.
- The Quality Management System shall provide guidance to ensure compliance with the DBFO Agreement, including the Technical Requirements as well as compliance with the intent of the Technical Requirements;
- Include procedures to monitor, update and manage their Quality Management System on an ongoing basis;
- Include, policies and procedures for implementing and assessing the effectiveness of its quality control system; and
- Identify the staff responsible for carrying out quality control and quality assurance.

### 3.2.4.2 Design Requirements

- The Quality Management System shall ensure that all designs and professional documents, including plans, engineering drawings, detailed drawings, maps, specifications, reports or other documents or a reproduction of any of them, that describe engineering, geological or geophysical work as contemplated in the *Engineering, Geological and Geophysical Professions Act* (Alberta) and regulations, be authenticated by a professional member, in accordance with the *APEGGA Practice Standard for Authenticating Professional Documents V2.0*;
- The Quality Management System shall require that the Contractor's design reports, architectural drawings, specifications and related documents that describe architectural work as contemplated by the *Architects Act* (Alberta) and regulations and the *Safety Codes*

*Act* (Alberta) and regulations be stamped and signed by an Architect registered with the *Alberta Association of Architects*;

- The Quality Management System shall require that all design work be reviewed, checked and verified by an independent reviewer (the "**Independent Reviewer**") who shall be a qualified Professional Engineer or Architect, as the design drawing so requires, who may be employed by the same legal entity doing the design work;
- The Independent Reviewer shall provide independent design check notes and shall report that the design checks have been completed based on the information provided by the Contractor's Engineer of Record or design Architect of record and is satisfied that the designs meet the Technical Requirements; the Independent Reviewer will then sign the Contractor's design reports, the Detailed Designs and related documents; and
- Changes made to the design during Construction Period must follow the same review process.

# 3.2.4.3 Construction Requirements

- The Quality Management System shall provide for ensuring that the Infrastructure is in conformance with the requirements of the Contractor's Designs, the Detailed Designs, the Project Requirements and related documents developed for the Infrastructure;
- The Contractor shall implement a methodology to verify compliance of the construction with the design requirements; changes made to the design during construction shall be stamped and signed by the Contractor's Engineer of Record or Architect of record from the design team and any such changes shall be reviewed by the Independent Reviewer;
- At the end of construction, the Contractor's Engineer of Record or Architect of record from the Contractor's design team shall be required to stamp and sign a declaration that the Infrastructure has been constructed in accordance with the Contractor's Designs, the Detailed Designs and the Project Requirements;
- The Quality Management System shall detail the pre-commissioning requirements, testing and acceptance program for all construction materials, products, equipment and systems, including the following:
  - Importance of construction quality, including material and equipment testing and inspections, testing and inspections frequencies, quality reference standards, product acceptance and rejection criteria;
  - Procedures for corrective action when quality control and/or acceptance criteria are not met;
  - Procedures for inspections and where required, receipt of the relevant permits;
  - If required by applicable laws, any boilers must comply with and be inspected by the *Alberta Boiler Safety Association*. The Contractor must have a Quality Management System program for such equipment registered and acceptable to

the Alberta Boiler Safety Association;

- Procedures to ensure that all materials and substances that come into contact with potable drinking water as part of the construction, the Existing Facilities O&M or the O&M are approved for that purpose;
- Feedback to designers for improvement of construction material or equipment quality;
- Recruitment, training and assignment of its skilled workforce;
- Measures to ensure that subcontractors are qualified, and/or licensed as required; and
- Roles and responsibilities of the Contractor's staff in the quality assurance process;
- The Quality Management System shall require that complete testing, inspection and construction quality control records and reports be prepared for the Project, the O&M and the Existing Facilities O&M;
- The Contractor shall make all Quality Management System testing, inspection and construction quality control records and reports available to the Province for inspection and review, and shall provide the Province with a copy of those Quality Management System records when so requested.

### 3.2.4.4 O&M Requirements

- The Quality Management System shall detail the following requirements, including without limitation:
  - Importance of overall quality in the Existing Facilities O&M and in the O&M, including monitoring, inspections and regulatory compliance, testing and inspections frequency, quality reference standards, product acceptance and rejection criteria;
  - Procedures, quality control and quality assurance criteria that include clearly stated deliverables, benchmarks/baselines to facilitate the measurement, reporting, analysis and the continual improvement of the Existing Facilities O&M and the O&M and related business processes;
  - Procedures, related business processes and accountabilities for inspections, monitoring, the Call Centre complaints handling, failure rectification, the Existing Facilities O&M and the O&M;
  - Procedures for recruitment, training and assignment of its skilled workforce;
  - Measures to ensure that subcontractors are qualified, and licensed as required; and

• Procedures for a formal document and record management defining the control of Call Centre, Existing Facilities O&M and O&M quality documents and records.

## 3.2.4.5 Audits Requirements

- The Contractor shall undertake Quality Management System audits to validate that the required levels of Quality Management System performance during the Construction Period and the Operating Period are being or have been achieved as required by the DBFO Agreement;
- The Quality Management System audits shall involve:
  - Document reviews or system audits to ensure that the Contractor has plans and procedures in place to cover all the required aspects of the Quality Management System; and
  - Compliance or procedural audits to ensure that the specified plans and procedures are being effectively implemented;
- The Contractor shall make all Quality Management System records available to the Province at all times for inspection, review and further instructions;
- The Contractor shall undertake annual internal Quality Management System audits to validate that the required levels of Quality Management System performance prior to Availability and during the Operating Period are being or have been achieved as required by the Technical Requirements; all aspects of the Quality Management System shall be audited at least once per year throughout the Term; and
- All Quality Management System deficiencies identified by the internal Quality Management System auditor during the audit must be addressed and corrective measures implemented by the Contractor; the Contractor shall communicate the results of all audits to the Province.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period and the Operating Period, as applicable, monitor and update as required, the Quality Management System. The Quality Management System for a specific component of the Project, the O&M, or the Existing Facilities O&M as applicable, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project, the O&M, or the Existing Facilities O&M as applicable.

### 3.2.5 ANNUAL QUALITY MANAGEMENT SYSTEM REPORT

The Contractor shall submit an annual quality management system report (the "Annual Quality Management System Report") summarizing the performance and efficacy of the Quality Management System. The Annual Quality Management System Report shall as a minimum

### include:

- Status update of the Contractor's Management Systems and Plans;
- Summary of all internal and external audits carried out;
- Explanation of any non-conformances identified and how they were resolved to assure compliance with the Technical Requirements;
- Identify any foreseeable and planned changes to the Contractor's Management Systems and Plans; and
- Describe the role and involvement of any self-certifying subcontractors and provide the same information listed above for the subcontractors' quality management systems if the Contractor is relying upon them.

## 3.2.5.1 Payment Adjustment

If the Contractor fails to provide an Annual Quality Management System Report to the Province as per Section 3.2.5, a Payment Adjustment of \$200 will be assessed for each day or partial day until the complete report is submitted.

# 3.3 ENVIRONMENTAL MANAGEMENT SYSTEM

The Contractor shall have an environmental management system (the "**Environmental Management System**") and the Environmental Management System shall be one of the Contractor's Management Systems and Plans.

The Environmental Management System shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Include the Contractor's corporate environmental policy stating corporate commitment and objectives for environmental management;
- Include a statement of the goals, objectives and/or targets of the Environmental Management System;
- Comprise an environmental management system based upon the requirements of ISO 14001:2004; the Contractor shall obtain accreditation of the Environmental Management System for the O&M within 18 months of Availability;
- Include the procedure that identifies environmental aspects for the Project and the O&M and determines which of those aspects have or can have significant impacts on the environment;
- Identify the environmental aspects for the Project and the O&M, identify which aspects are common to all facilities and which are specific to individual facilities and include a risk

assessment for each aspect;

- Identify the environmental requirements of the operating licenses, permits and approvals for the Project, the O&M, and the Existing Facilities O&M;
- Include a listing of all environmental regulatory requirements that pertain to the Project, the O&M and the Existing Facilities O&M;
- Set out the roles and responsibilities of the Contractor's environmental management team for the Project, the O&M, and the Existing Facilities O&M including a clear description and illustration of the organizational and administrative framework to be employed in the implementation and execution of the Environmental Management System. The framework must demonstrate an effective functional relationship with other components of the Contractor's organization (including subcontractors), with any Governmental Authority, and with independent environmental monitors and auditors;
- Include a description of the communications processes for consulting and communicating with external stakeholders on environmental issues and for documenting and responding to stakeholders contacts, queries and requests for information;
- Listing of the documentation to be included in the Environmental Management System and how the documents will be controlled;
- Set out the Contractor's procedure for conducting management reviews of the Environmental Management System;
- Include environmental incident reporting and investigation procedures defining how incidents are reported and what techniques are used to identify the root causes and prevent recurrence;
- Set out the procedure for reporting environmental incidents to the Province and to Alberta Environment;
- Include procedures that ensure that any persons performing tasks for the Contractor or on its behalf that have the potential to cause environmental impacts are competent on the basis of appropriate education, training or experience, together with procedures to retain these records;
- Include processes for assuring subcontractors environmental management systems and procedures to ensure that they meet the Province's and the Contractor's environmental management standards and requirements;
- Include the operational controls and procedures that the Contractor will implement for the Construction Period and the Operating Period;
- Include procedures for emergency preparedness and response plan for environmental incidents;

- Include procedures for monitoring the key environmental aspects of the Project, the O&M, and the Existing Facilities O&M that are identified as presenting the greatest environmental risks;
- Include procedures for the internal audit of the Environmental Management System, including auditor qualifications, audit scope, audit objectives and audit scheduling; and
- Define the process for addressing any environmental non-conformances in a responsible and timely manner.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period and the Operating Period, as applicable, monitor and update as required the Environmental Management System. The Environmental Management System for a specific component of the Project, the O&M, or the Existing Facilities O&M, as applicable, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project, the O&M, or the Existing Facilities O&M, as applicable.

## 3.3.1.1 Environmental Management System Accreditation

If the Contractor fails to obtain independent accreditation of the Environmental Management System to ISO 14001:1996 within 18 months of Availability a Payment Adjustment of \$200 will be assessed for each day or partial day until accreditation is obtained.

## 3.4 SAFETY MANAGEMENT PLAN

The Contractor shall have a safety management plan (the "**Safety Management Plan**") and the Safety Management Plan shall be one of the Contractor's Management Systems and Plans.

The Safety Management Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Include the Contractor's corporate safety policy stating corporate commitment and objectives for safety management;
- Describe the overall strategy for work zone safety, including guiding principles and standards for work zone plans;
- Set out the procedure for accident reporting and investigation including fulfilment of the specific requirements of the Occupational Health and Safety Act;
- Include a procedure for reporting accidents to the Province:
  - o at the time of occurrence;
  - o monthly summary;
  - o calendar year summary, compiled on December 31 of each year; and

- the Department fiscal year summary, compiled on March 31 of each year;
- Include a policy for work place health and safety meetings and inspections;
- Set out health and safety committee provisions;
- Set out procedures to ensure that employees and subcontractors have the requisite health and safety training including training for job-specific methods and specific equipment instructions;
- Describe the Contractor's Certificate of Recognition (the "**COR**") approach, including the processes for assuring subcontractor safety accreditation and COR status;
- Include procedures for responding to violations identified by Occupational Health and Safety and by the Workers' Compensation Board; and
- Set out the approach to the integration of safety plans with other stakeholders' safety plans.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period and the Operating Period, as applicable, monitor and update as required the Safety Management Plan. The Safety Management Plan for a specific component of the Project, the O&M, or the Existing Facilities O&M, as applicable, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project, the O&M, or the Existing Facilities O&M, as applicable.

### 3.5 COLLABORATION PLAN

The Contractor shall have a collaboration plan (the "**Collaboration Plan**") and the Collaboration Plan shall be one of the Contractor's Management Systems and Plans.

The Collaboration Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Set out the Contractor's understanding of the benefits that collaborating will bring to the Project and the O&M;
- State the Contractor's commitment to collaborating;
- Set out a framework for meeting with the Province, the Local Authority, Alberta Tourism, Parks and Recreation, the Lessees, the End-users and the Existing Facilities End-users and all other interested stakeholders that the Contractor identifies, to collaborate on Project and O&M issues, access issues, coordination issues and any other issues that may arise during the Construction Period and the Operating Period;
- Set out the frequency of collaboration meetings, taking into account the need for timeliness or assistance and the criticality of issues to be addressed;

- Identity the key stakeholders, their main concerns and any constraints to be addressed during the Construction Period and the Operating Period;
- Set out the collaboration processes to be followed;
- Set out the roles and responsibilities of each member of the Contractor's team, including any specialist advisors, that are to be involved in the collaboration process during the Construction Period;
- Include a commitment that the Contractor will be responsible for the costs of collaborating in accordance with the DBFO Agreement, including; the costs of any venues for collaboration sessions (to be in the locale in which the Project is located unless otherwise agreed to in advance by the Province), the costs of facilitation, and for the costs of its own attendees; the Province will attend at no cost to the Contractor;
- Include a protocol for collaboration at the field supervisor's level for the Construction Period;
- Set out a framework for the Contractor to participate with the Province in discussion of O&M service delivery issues with the stakeholders, the End-users and the Existing Facilities End-users and any other matters arising in connection with operation and maintenance activities to foster greater cooperation during the Term;
- Set out the roles and responsibilities of each member of the Contractor's team, including any specialist advisors, that are to be involved in the collaboration process during the Operating Period;
- Include a strategy for collaboration at the operations staff level for the Operating Period;
- Set out the interface with the Call Centre Plan; and
- Set out the processes to be used for monitoring the effectiveness of the Collaboration Plan implementation, dealing with any complaints and enhancing or amending the approach if required.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period and the Operating Period, as applicable, monitor and update as required the Collaboration Plan. The Collaboration Plan for a specific component of the Project, the O&M, or the Existing Facilities O&M, as applicable, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project, the O&M, or the Existing Facilities O&M, as applicable.

### 3.6 HANDBACK ON EXPIRY PLAN

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall develop and have approved by the Province, acting reasonably, a handback on expiry plan (the "**Handback on Expiry Plan**") in form and substance as follows:

- Set out the procedures for demonstrating that the Infrastructure complies with the Technical Requirements at the time of handback;
- Include procedures for testing any treatment processes or ancillary system for which the performance is not evidenced by the routine water quality testing; as a minimum the Annual Dependability Test(s) (refer to Section 5.7.4) shall be demonstrated as part of the handback testing;
- Include procedures for demonstrating the functionality of the standby power systems of the PWTP and the WWTP;
- Include a process to ensure that all permanent instrumentation, including portable and laboratory instrumentation, is calibrated prior to the commencement of the handback testing, and at the date of handback;
- Set out the organization of the handback test team, including responsibilities, authority, and decision-making protocols;
- Include a handback schedule timetabling the handback activities, including submittal of handback documentation;
- Provide a pro-forma and procedure for documenting the Treated Water and Treated Wastewater test results (set out in Section 5.6.2) over a period of 28 consecutive days; and to be performed and delivered not earlier than 180 days and not later than 90 days prior to the end of the Term to demonstrate the continued compliance of the PWTP, the Potable Water Distribution System and the WWTP with the Technical Requirements for Treated Water and the Treated Wastewater quality; and
- Include a protocol for delivering duplicate water samples to the Province for the Province's independent testing should the Province elect to conduct such tests during handback testing period.

Once approved by the Province, the Handback on Expiry Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period monitor and update as required the Handback on Expiry Plan.

# 3.7 CONSTRUCTION PERIOD PLANS

### **3.7.1** Permitting Plan

The Contractor shall have a permitting plan (the "**Permitting Plan**") and the Permitting Plan shall be one of the Contractor's Management Systems and Plans.

The Permitting Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- A comprehensive plan describing how the Contractor intends to ensure that all required permits and approvals are obtained with reference to each and every permit that is required for the Project and the O&M;
- Include procedures for managing all communications and submittals to the regulatory agencies including consultation, formal applications and the review process through to receipt of the permits;
- Set out the quality assurance and quality control procedures that will be followed to ensure that all of the permit applications and submittals are fully complete and that the information submitted is accurate and correct;
- Set out the roles and responsibilities within the Contractor's team for performing the permitting work;
- Identify the main risks that the Contractor foresees in securing the permits in a timely manner and the mitigation strategies that will be adopted;
- Include a detailed explanation of the scope and timing of any assistance from the Province that the Contractor will require in order to complete the permitting process;
- Set out the format of the monthly permitting progress reports to be submitted to the Department until each and every permit is obtained and all of the permit conditions have been discharged (see Section 4.9.5); the report shall provide advance notice for any assistance that the Contractor requires from Province in relation to any permitting activity; and
- If the Contractor's Designs make use of the Alberta Environment filter exemption for the PWTP, include a filter exemption action plan (the "Action Plan") in the form and substance that the Contractor will include in its submission to Alberta Environment for the PWTP licence consistent with the requirements detailed in the Alberta Environment letter dated September 3, 2010 (a copy of which letter the Contractor hereby acknowledges as having received) which requires this Action Plan to be submitted as a condition of relying upon the exemption. As a minimum, the Action Plan shall include:
  - Details of the Raw Water turbidity monitoring systems;
  - the Raw Water turbidity trigger levels, defined as threshold values or trends, and any other triggers to be adopted as part of the Action Plan;
  - Response plans and procedures to be adopted in each of the following circumstances:
    - for each turbidity trigger level (threshold or trend) proposed;

- in the event that Alberta Environment suspends the filter exemption;
- in the event that Alberta Environment withdraws the filter exemption;
- any other circumstance that the Contractor or Alberta Environment deems necessary; and
- Contingency plans, including timescales for installing temporary and permanent filtration that meet the requirements of Alberta Environment and provide as a minimum an additional 2.5 log reduction for *Giardia lamblia cysts* and *Cryptosporidium oocysts* in the event that Alberta Environment mandate the addition of a filtration process to the PWTP.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period monitor and update as required the Permitting Plan.

The Permitting Plan for a specific component of the Project shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) of the DBFO Agreement prior to the start of that component of the Project.

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall further develop and have approved by the Province, acting reasonably, the Permitting Plan in form and substance to include the additional requirements set out below:

- Establish a permit registry;
- Set out procedures for all data gathering, testing, report preparation, and collation of any other information required to obtain and maintain all required permits;
- Include procedures for renewing permits as required; and
- Set out procedures for ensuring that the permit requirements are incorporated into the Detailed Designs, the Construction Period Plans, and the Operating Period Plans, including checks to verify compliance.

Once approved by the Province, the updated Permitting Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

### 3.7.2 Design Plan

The Contractor shall have a design plan (the "**Design Plan**") and the Design Plan shall be one of the Contractor's Management Systems and Plans.

The Design Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- A comprehensive plan detailing the methodology that the Contractor will adopt to manage the design and ensure that it complies with the Project Requirements;
- Include a definition and explanation of the roles and responsibilities within the Contractor's team for performing the design work;
- Set out the Contractor's schedule for carrying out the Detailed Design including the 30 percent, 60 percent and 90 percent design submittals, and the design issue for construction;
- Include scope control and design input verification procedures;
- Include processes and procedures to ensure that all design submittals are reviewed by an Independent Reviewer;
- Set out the processes and responsibilities for ensuring that the architectural drawings, specifications and related documents that describe architectural work as contemplated by the *Architects Act* (Alberta) and regulations and the *Safety Codes Act* (Alberta) and regulations be stamped and signed by an architect registered with the *Alberta Association of Architects*;
- Include systems and procedures for design document control; and
- Include a design changes management process to ensure that any changes to the design during the Construction Period are verified through a review process.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period monitor and update as required the Design Plan. The Design Plan for a specific component of the Project shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project.

# 3.7.3 Construction Management Plan

The Contractor shall have a construction management plan (the "**Construction Management Plan**") and the Construction Management Plan shall be one of the Contractor's Management Systems and Plans.

The Construction Management Plan shall, as of the Execution of the DBFO Agreement, be in form and substance as follows:

- A comprehensive plan detailing the methodology that the Contractor will adopt to manage the construction and ensure that it complies with the Project Requirements;
- Include communication protocols and procedures for the integration of the design and construction processes;
- Include scope verification and control procedures;

- Set out resource planning and management procedures;
- Set out schedule monitoring and control processes;
- Include processes and procedures for coordination with Existing Facilities O&M (see also Section 3.7.8 (Interface Protocol));
- Describe means and methods for maintaining staff and visitor access to the Lands and for the Existing Facilities O&M during the Construction Period;
- Describe any measures that the Contractor considers are necessary to minimize impacts on Existing Facilities O&M during the Construction Period;
- Include plans and procedures to manage construction access routes for construction traffic and equipment and material deliveries during the Construction Period (refer to Sections 4.8.9 and 4.11.7.7);
- Set out the construction staging, employee and trailer parking areas;
- Set out the Lands access security measures to be implemented during construction;
- Set out communication and notification protocols for both routine and emergency conditions;
- Include construction procedures to ensure compliance with all environmental regulatory requirements and the environmental aspects identified in the Environmental Management System that pertain to construction;
- Include procedures for topsoil handling and conservation including storage and replacement, and rutting and compaction prevention;
- Include procedures for dust and odour control during construction (refer to Sections 4.8.5 and 4.8.7);
- Include procedures for noise management during construction (refer to Section 4.8.6);
- Set out the Contractor's wildlife management strategies (refer to Section 4.8.2);
- Include procedures for vegetation (including trees, shrubs, vines, grasses and topsoil) clearing, establishment and management (including weed control); and procedures for obtaining approvals from Alberta Tourism, Parks and Recreation and Alberta Environment;
- Include procedures for watercourse crossings, including in-stream activities;
- Set out spill prevention and response plans (refer to Section 4.8.13);
- Set out procedures to address groundwater protection, erosion prevention and sediment

control, including the requirements of any stormwater permit(s) as applicable (refer to Sections 4.8.3 and 4.8.11);

- Set out care of water plans including:
  - Stormwater management in accordance with the Stormwater Management Guidelines for the Province of Alberta;
  - o Groundwater management;
  - o Surface water management; and
  - Dewatering and drainage management;
- Include procedures for the continuous monitoring of surface water during construction by the Contractor to ensure that any surface water contamination does not go undetected;
- Set out the Contractor's construction waste management procedures and construction waste management plans, and identifying opportunities for reduction, reuse, and recycling of materials, and the designated the landfill where residual trash will be disposed of; include an analysis of the proposed waste expected to be generated, together with types and quantities, categorized to identify as a minimum:
  - Cardboard;
  - Clean dimensional wood;
  - o Beverage containers;
  - Land clearing debris;
  - Aggregate including concrete, asphalt, and masonry;
  - Metals from banding, steel stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze;
  - Gypsum board;
  - Plastic buckets (waste can be reduced by using plastic lined cardboard dry packed materials instead of premixed moist packed materials where this option is available);
  - Carpet and carpet pad trim;
  - o Paint;
  - Plastic sheeting and packaging, where recycling programs are available; and
  - Rigid plastic foam insulation, where recycling programs are available; and
- Set out the hazardous waste management procedures including handling and disposal training requirements for the Contractor's and subcontractors' staff.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period monitor and update as required the Construction Management Plan. The Construction Management Plan for a specific component of the Project shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project.

## 3.7.4 Construction Occupational Health and Safety Plan

The Contractor shall have a construction occupational health and safety plan (the "**Construction Occupational Health and Safety Plan**") and the Construction Occupational Health and Safety Plan shall be one of the Contractor's Management Systems and Plans.

The Construction Occupational Health and Safety Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Meets the requirements of the Occupational Health and Safety Act, Good Industry Practice, and the requirements set out in Schedule 16 (Safety Requirements);
- Identify applicable laws and legislation;
- Identify the Prime Contractor for each work site and state their corporate safety policy;
- Set out the safe working procedures to be followed;
- Describe the Contractor's safety training programs;
- Describe the Contractor's accident prevention programs;
- Set out the roles and responsibilities of the Contractor's key safety management personnel;
- Set out the procedures to be followed in the case of emergencies including details of the manner and timing of reaction to emergencies to ensure public safety and protection of property while complying with the requirements of the DBFO Agreement regarding such matters; and
- Set out the processes and procedures for planning, performing, reporting and closing out safety audits.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period monitor and update as required the Construction Occupational Health and Safety Plan. The Construction Occupational Health and Safety Plan for a specific component of the Project shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project.

# 3.7.5 Commissioning and Startup Plan

The Contractor shall have a commissioning and startup plan (the "**Commissioning and Startup Plan**") and the Commissioning and Startup Plan shall be one of the Contractor's Management Systems and Plans.

The Commissioning and Startup Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Include a general description of the Contractor's systematic testing and startup procedures for each discrete system, as well as the complete system tests that will be performed to demonstrate that the PWTP, the WWTP and the whole of the Infrastructure performs interactively and at the performance levels specified in the Technical Requirements;
- Describe the 14 Day Performance Test(s) to demonstrate that the Infrastructure, including the PWTP and the WWTP can successfully treat the Raw Water and wastewater influent, respectively, to meet the Treated Water and the Treated Wastewater standards specified in the Technical Requirements (refer to Section 4.12.1);
- Set out the processes and procedures to be followed for testing, diagnosis and correction of problems, including repeat testing where required;
- Describe the methodology for Hydraulic Capacity Tests to demonstrate that all of the Infrastructure including the PWTP, the WWTP and the Potable Water Distribution System meet the hydraulic capacities stated in the Technical Requirements;
- Set out the arrangements for collating and the format for reporting the results of tests, including the 14 Day Performance Test and the Hydraulic Capacity Test; and
- Include a plan for delivering operations and maintenance training, and education for the operators prior to Availability.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall, during the Construction Period, monitor and update as required the Commissioning and Startup Plan. The Commissioning and Startup Plan for a specific component of the Project shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project.

Prior to 30 days before the scheduled date of startup, operations, commissioning and process performance testing for the Infrastructure as set out in the Contractor's Construction Schedule, and as a condition to introducing Raw Water or wastewater influent flows into the Infrastructure, the Contractor shall further develop and have approved by the Province, acting reasonably, the Commissioning and Startup Plan in form and substance to include the additional requirements set out below:

• Describe the detailed methodology for the commissioning and testing of each system comprising the Infrastructure;

- Set out the testing programs to support each specific testing objective identified in the Project Requirements (refer to Section 4.12);
- Include a detailed schedule of commissioning and startup activities, including schedule for final connections, tie-ins and the testing of all component parts of the PWTP and the WWTP, as well as the Potable Water Distribution System. The detailed schedule must clearly identify the commissioning and startup milestones and activities that are identified in the Contractor's Construction Schedule;
- Set out the methods for introducing flow, disposing of partially treated wastewater, and disposing of any sludge or other residual solids generated during the commissioning and startup testing;
- Set out the methods for securing, utilizing and disposing of water and other materials necessary for reservoir and pipeline testing;
- Set out specific testing procedures for the Hydraulic Capacity Test(s) of the PWTP, the WWTP, and the Potable Water Distribution System; include methods to complete the tests even in the event that the incoming wastewater or Treated Water demand flows are below the maximum hydraulic design capacities specified in the Technical Requirements;
- Include drawing and sketches, as required to illustrate the planned sequence of events;
- Set out the commissioning and testing team organization and schedule including but not limited to the planned attendance of the Contractor, suppliers, subcontractors and the Provincial Construction Representative;
- List the personnel who the Contractor plans to employ for commissioning and startup with information indicating their qualifications for this work;
- Set out contingency plans in the event of equipment failures, instrument failures, and process malfunctions;
- Include a listing and details for all temporary equipment (e.g. pumps) and instruments required for the commissioning and testing;
- Set out all test parameters to be monitored and measured during startup and commissioning;
- Include specific and detailed calibration methods, requirements and schedules for all testing equipment and instruments;
- Set out specific and detailed sample collection, handling, and testing procedures to be followed including a comprehensive quality assurance and quality control program for the 14 Day Performance Test(s) of the PWTP and the WWTP (refer to Section 4.12); and
- Set out response procedures for unsatisfactory test results including the definition of test

result limits that constitute a failure during commissioning and startup testing.

Once approved by the Province, the updated Commissioning and Startup Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

### 3.7.5.1 Payment Adjustment

If the Contractor fails to submit and have approved by the Province an updated Commissioning and Startup Plan at least 30 days prior to the scheduled date of startup, operations, commissioning and process performance testing, a Payment Adjustment of \$2,000/week or any partial week shall apply until the updated Commissioning and Startup Plan is submitted.

### **3.7.6 Intentionally Deleted**

### **3.7.7** Public Communication Plan

The Contractor shall have a public communication plan (the "**Public Communication Plan**") and the Public Communication Plan shall be one of the Contractor's Management Systems and Plans.

The Public Communication Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Describe the arrangements and operating procedures for the Contractor's project telephone hotline to provide the public with a means of obtaining information on the Contractor's activities and for reporting issues or complaints;
- Set out the procedures for regular reporting on construction and commissioning activities and general progress of the Project to be shared with the public; the format, content and frequency of the communication shall be agreed by the Province and the Contractor;
- Include processes for sharing the project activity and progress information with the Province in electronic format suitable for posting on a project website, and at public presentations and open houses;
- Include a commitment and detailed arrangements for the Contractor to host a public open house in the Evan-Thomas Provincial Recreational Area prior to commencing construction to explain the scope of work, construction schedule and other elements of the Project for the purpose of sharing information with the public; and
- Set out the Contractor's procedures for maintaining comprehensive records of all communication activities described above, and the arrangements for access to the archived records by the Province.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period and the Operating Period monitor and update as required the Public Communication Plan. The Public Communication Plan for a specific component of the Project shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project.

## 3.7.8 Interface Protocol

The Contractor shall have an interface protocol (the "**Interface Protocol**") and the Interface Protocol shall be one of the Contractor's Management Systems and Plans.

The Interface Protocol shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Include a commitment to develop, implement and maintain an Interface Protocol;
- Set out a permit to work type control process for all interface activities, being any Project work activity outside of the areas designated and delineated exclusively for construction including investigations, construction, startup, commissioning or testing prior to Availability which either directly interfaces with or impacts upon, or has the potential to impact upon the Existing Facilities, the Existing Facilities O&M and the Existing Facilities End-users;
- The permit to work process shall include formal notices to proceed ("Notice to Proceed");
- Include an approval procedure for each Notice to Proceed, which clearly defines the role of the Contractor's operations manager for the Existing Facilities O&M in approving Notices to Proceed for any interface activity, acting as a responsible operator following Good Industry Practice;
- Set out the authority of the Contractor's operations manager for the Existing Facilities O&M to withdraw a Notice to Proceed at any time, including before or during a planned outage, if the Contractor's operations manager determines that the operational situation has changed so that it is required to bring the Existing Facilities back into service; in such circumstances the Contractor's construction team shall use all reasonable efforts to secure this as soon as possible;
- Include procedures for reviewing, planning and scheduling the construction and commissioning activities to minimize the number and duration of interface activities and shut-downs;
- Include procedures to develop and maintain plans for each construction location showing the position, isolation procedure and access provision for each interface (including domestic utility connections); and
- Include procedures for any interface activities that involve plant outages or periods of

reduced capacity (such outages or reduced capacity) to be agreed in advance in writing by the Province and in consultation by the Contractor with all of the affected stakeholders through the communication mechanisms set out in the Collaboration Plan.

Prior to the date that is 90 days after the Execution of the DBFO Agreement, the Contractor shall further develop and have approved by the Province, acting reasonably, the Interface Protocol in form and substance to include the additional requirements set out below:

- Set out the procedures and pro-forma for preparing detailed method statements, risk assessments and contingency plans for every interface activity, including: health, safety, access, security, traffic management, permit and environmental management requirements;
- Include procedures to ensure that perimeter fencing to the Existing Facilities remains intact during the execution of the interface work; where fencing has unavoidably to be removed to facilitate construction, measures must be put in place to maintain security and permanent fencing must be reinstated as quickly as possible;
- Clearly define the rules and protocols governing the activities of the Contractor's construction staff to ensure that the operation of any apparatus, valve or switch that is part of the Existing Facilities remains under the control of the Contractor's designated personnel responsible for the Existing Facilities O&M at all times;
- Establish a rolling schedule of all planned interface activities, which shall as a minimum identify in detail the individual activities that are planned during the next 90 days, and a procedure for keeping the schedule up to date;
- Include plans for each construction location showing the position, isolation procedure and access provision for each interface (including domestic utility connections);
- Set out the appropriate notice periods for all interface activities; in no event shall interface notice periods be less than 14 days; and
- Set out the contact details of all key Contractor staff and subcontractors responsible for each interface activity.

Once approved by the Province, the updated Interface Protocol shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period monitor and update as required the Interface Protocol. The Interface Protocol for a specific component of the Project shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Project.

## 3.7.8.1 Payment Adjustment

If the Contractor fails to submit an updated Interface Protocol to the Province as per Section 3.7.8, a Payment Adjustment of \$500 will be assessed for each day or partial day until the Interface Protocol is submitted.

If the Contractor fails to follow the Interface Protocol for any Project work activity outside of the areas designated and delineated exclusively for construction including investigations, construction, startup, commissioning or testing prior to Availability which either directly interfaces with or impacts upon, or has the potential to impact upon the Existing Facilities, the Existing Facilities O&M and the Existing Facilities End-users, a Payment Adjustment of \$5,000/event-day until the deficiency or deficiencies are corrected.

If the subject activity exceeds one day duration then the penalty shall be applied separately on each and every failure day until the deficiency or deficiencies are rectified.

### 3.7.9 Demolition and Decommissioning Plan

The Contractor shall have a demolition and decommissioning plan (the "**Demolition and Decommissioning Plan**") and the Demolition and Decommissioning Plan shall be one of the Contractor's Management Systems and Plans.

The Demolition and Decommissioning Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Set out the scope of the Existing Facilities which are not required as part of the Infrastructure in the Contractor's Designs, and which are not required by the Province to be maintained in service for the benefit of third parties or to maintain the existing licenses;
- Include site plans clearly indicating which assets will be demolished and decommissioned;
- Include a description of the timing and methods to used to implement the demolition and decommissioning;
- Comply with the demolition and land reclamation requirements of the Existing Facilities Licenses and the Alberta Environment approval requirements set out therein and as summarized in Section 4.10.3.13; and
- Include drawings and descriptions of the remediation and landscaping to be constructed in the locations of the demolished assets (refer to Section 4.11.7.8).

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period and the Operating Period, as applicable, monitor and update as required the Demolition and Decommissioning Plan. The Demolition and Decommissioning Plan for a specific component of the Project, the O&M, or the Existing Facilities O&M as applicable, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review

Procedure) to the DBFO Agreement prior to the start of that component of the Project, the O&M, or the Existing Facilities O&M as applicable.

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall further develop and have approved by the Province, acting reasonably, the Demolition and Decommissioning Plan in form and substance to include the additional requirements set out below:

- Update the scope definition and site plans defining the Existing Facilities which are not required as part of the Infrastructure in the Contractor's Designs, and which are not required by the Province to be maintained in service for the benefit of third parties or to maintain the existing licenses;
- Include a detailed schedule of the timing for demolition and decommissioning activities;
- Include detailed methods for demolition and decommissioning activities in compliance with Section 4.10.3.13;
- Include drawings and specifications for the remediation and landscaping to be constructed in the locations of the demolished assets;
- Set out the detailed logistical arrangements for delivering the assets to be retained by the Province as set out in Section 4.10.3.13; and
- Set out the waste disposal arrangements in compliance with Section 4.11.8.6.

Once approved by the Province, the updated Demolition and Decommissioning Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

### 3.7.9.1 Payment Adjustment

If the Contractor has not completed any of the activities set out in the approved Demolition and Decommissioning Plan within nine months of Availability, a Payment Adjustment of \$2,000/week or any partial week, for the first four weeks and \$5,000/week or any partial week, thereafter shall apply until such deficiency or deficiencies are corrected.

### **3.8 OPERATING PERIOD PLANS**

#### 3.8.1 Operation and Maintenance Plan

The Contractor shall have an operation and maintenance plan (the "**Operation and Maintenance Plan**") and the Operation and Maintenance Plan shall be one of the Contractor's Management Systems and Plans.

The Operation and Maintenance Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Set out the Contractor's strategies for the operation and maintenance of the Infrastructure throughout the Operating Period;
- Set out the key activities of the maintenance program during the Operating Period and how these activities will be delivered;
- Set out the core staffing and subcontractor resources to be deployed for the O&M;
- Set out the vehicles and equipment to be deployed for the O&M;
- Describe the communications and work management systems to be employed by the Contractor to manage the O&M staff and service providers and coordinate operations between the supervisor, subcontractors and operators;
- Describe the Contractor's methodologies for leakage control, sewer flushing, service reservoir cleaning and pumping station maintenance; and
- Include a comprehensive description of the form, structure and content of the operation and maintenance manuals that will be developed and available prior to startup and commissioning.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period, monitor and update as required the Operation and Maintenance Plan. The Operation and Maintenance Plan for a specific component of the O&M, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall further develop and have approved by the Province, acting reasonably, the Operation and Maintenance Plan in form and substance to include the additional requirements set out below:

- Establish specific goals and targets for the efficient operation and maintenance of the Infrastructure based on the Detailed Designs;
- Set out the preventative and predictive maintenance procedures for the Infrastructure including all water and wastewater process units, building maintenance and housekeeping activities, distribution system asset maintenance, collection system asset maintenance, and landscaping maintenance activities;
- Set out the SOP's for operation and maintenance activities, and integrate the SOP's with the operation and maintenance requirement of the O&M Manuals;
- Set out the routine maintenance program for the Operating Period and how these activities

will be delivered;

- Identify staffing and subcontractor services to be deployed;
- List all mobile plant and equipment to be used for the O&M;
- Set out the detailed procedures for communications and work management systems to be used by the Contractor to manage the O&M staff and service providers and coordinate operations between the supervisor, subcontractors and operators;
- Include processes and procedures for leakage management, sewer flushing, service reservoir cleaning and pump station maintenance;
- Include environmental management procedures in the Operation and Maintenance Plan to control the environmental aspects identified in the Environmental Management System, and to ensure compliance with applicable legislation and the Infrastructure operating license requirements; and
- Include a procedure to keep the O&M Manuals and as-built drawings up to date in the event of changes.

Once approved by the Province, the updated Operation and Maintenance Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

The extent to which the Operation and Maintenance Plans for the Exiting Facilities O&M are the same as or independent of those for the O&M of the Infrastructure is at the Contractor's discretion.

### 3.8.2 Emergency Response Plan

The Contractor shall have an emergency response plan (the "**Emergency Response Plan**") and the Emergency Response Plan shall be one of the Contractor's Management Systems and Plans.

The Emergency Response Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Set out the manner and timing of reaction to emergencies to ensure public safety and the protection of property;
- Set out the activation process for mobilizing crews at short notice in the event of emergencies;
- Include a contingency plan in the event that primary staff cannot be reached;
- Set out the training to be given staff with respect to emergency response procedures;

- Set out communication strategies with the Province, the public, the media, the Local Authority, utility companies, the Lessees, police, and fire department;
- Include an administrative process to collect the costs of accidents and incidents from the responsible parties;
- Describe the procedures for prompt replacement and repair of Infrastructure due to accident damage;
- Set out the strategy for dealing with fire calls from local fire departments;
- Set out the methods and procedures for debris removal; and
- Include specific emergency response measures as required by any Governmental Authority, regulatory approvals, permits and licenses.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period, monitor and update as required, the Emergency Response Plan. The Emergency Response Plan for a specific component of the O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall further develop and have approved by the Province, acting reasonably, the Emergency Response Plan in form and substance to include the additional requirements set out below:

- Include a procedure for regular review and, where required amendment to ensure that the Emergency Response Plan continues to meet the requirements of any Governmental Authority, regulatory approvals, permits and licenses;
- Set out the detailed procedures for coordinating with the Kananaskis Emergency Services Centre and work with the local fire, police and other local agencies;
- Set out the person(s) responsible during an emergency, their duties, the response effort, the reporting requirements, and preventative measures; and
- Set out any emergency response procedures identified by the Contractor in response to the risk assessment included in the Drinking Water Safety Plan.

Once approved by the Province, the updated Emergency Response Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

The extent to which the Emergency Response Plan for the Existing Facilities O&M are the same or independent of those for the O&M of Infrastructure is at the Contractor's discretion.

## 3.8.3 O&M Occupational Health and Safety Plan

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall develop and have approved by the Province, acting reasonably, an occupational health and safety plan (the "**O&M Occupational Health and Safety Plan**") in form and substance as follows:

- That meets the requirements of the Occupational Health and Safety Act and Good Industry Practice;
- The O&M Occupational Health and Safety Plan shall describe the health and safety standards and practices that the Contractor will implement to reduce or eliminate the occurrence of accidents while carrying out the O&M;
- Identify applicable laws and legislation;
- Identify the Prime Contractor for each facility and state their corporate safety policy;
- Set out the safe working procedures to be followed;
- Describe the Contractor's safety training programs;
- Describe the Contractor's accident prevention programs;
- Set out the roles and responsibilities of the Contractor's key safety management personnel;
- Set out the procedures to be followed in the case of emergencies including details of the manner and timing of reaction to emergencies to ensure public safety and protection of property while complying with the requirements of the DBFO Agreement regarding such matters; and
- Set out the processes and procedures for planning, performing, reporting and closing out safety audits.

Once approved by the Province, the Occupational Health and Safety Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period, monitor and update as required the Occupational Health and Safety Plan. The Occupational Health & Safety Plan for a specific component of the O&M, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

## 3.8.4 Drinking Water Safety Plan

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall develop and have approved by the Province, acting reasonably, a drinking water safety plan (the "**Drinking Water Safety Plan**") in form and substance as follows:

- That addresses the whole waterworks system, including well protection, the PWTP, potable water storage facilities and water distribution systems;
- That complies with the principles set out in the Province's Source to Tap, Multi-Barrier Approach - *May 2009* ("**STMBA**"), and the approach set out by the Canadian Council of Ministers of the Environment ("**CCME**") in the From Source to Tap: The Multi-Barrier Approach to Safe Drinking Water - *May 2002* and the Source to Tap National Guidance Document - *2004*;
- Include strategies and procedures to reduce the risk of any public health threat to the waterworks system and to drinking water consumers;
- Include strategies and procedures for source water protection to control and minimize the potential of introducing chemicals or contaminants to the Raw Water source; the strategies and procedures shall cover both the Lands and the Contractor's approach to collaboration with other stakeholders who have influence or control over lands that could influence the aquifer water quality;
- Include emergency response procedures to deal with situations that arise from unforeseen events that can be predicted or controlled such as:
  - o non-conformance with health-related quality standards;
  - accidents that increase levels of contaminants, for example spills, or the incorrect application of chemicals;
  - o human actions such as human error, or sabotage;
  - the impact of service interruptions on drinking water safety, including equipment failures, extended power outages, or lightning damage to electrical equipment; and
  - treatment challenges such as seasonal variations in Raw Water quality, algae blooms, or extreme weather events;
- Include adaptive emergency response procedures for unforeseeable events;
- Set out procedures for the collection, validation, and analysis of data and information that informs the quality of drinking water at all stages in the abstraction, treatment and distribution infrastructure, including microbiological testing of the Treated Water;

- Include processes and procedures for notification, communication and action in the event of failed bacteriological results in the Treated Water; the communication action protocol will involve Alberta Environment and any Governmental Authority as required, and shall define the procedure to be followed in the event that Boil Water Advisories or Water Usage Advisories are required to protect public health; and
- Include procedures for the selection, monitoring and control of all materials, chemicals and substances used in the construction, maintenance and operation of the waterworks system to ensure materials that come into contact with drinking water do not cause contamination; including materials used throughout the treatment and distribution system, treatment additives (for example coagulants), and treatment devices as well as resources (including people and equipment) performing operation and maintenance activities.

Once approved by the Province, the Drinking Water Safety Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period monitor and update as required the Drinking Water Safety Plan. The Drinking Water Safety Plan for a specific component of the O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

# 3.8.5 Odour Management Plan

The Contractor shall have odour management plan (the "**Odour Management Plan**") and the Odour Management Plan shall be one of the Contractor's Management Systems and Plans.

The Odour Management Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- The Odour Management Plan shall cover the whole wastewater treatment system including the collection system, the WWTP, and the residuals treatment, storage and handling;
- Identify the requirements of all relevant Governmental Authority pertaining to odour control;
- Include a response procedure to address any odour complaint or non-conformance with the identified requirements; and
- Describe the processes and procedures for the inspection, repair and maintenance of the odour control system(s).

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall further develop and have approved by the Province, acting reasonably, the Odour Management Plan in form and substance to include the additional

requirements set out below:

- Describe the odour control systems and equipment included in the Detailed Designs to meet the requirements of Section 4.6.1.7 as well as the requirements of the Infrastructure license(s);
- Identify the contemporary requirements of any relevant Governmental Authority pertaining to odour control;
- Set out the processes and procedures for the inspection, repair and maintenance of the odour control system(s); and
- Set out the interface with the other relevant plans and systems, including the Call Centre Plan, forming part of the Contractor's Management Systems and Plans.

Once approved by the Province, the updated Odour Management Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period, monitor and update as required the Odour Management Plan. The Odour Management Plan for a specific component of the O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

### 3.8.6 Noise Control Plan

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall develop and have approved by the Province, acting reasonably, a noise control plan (the "**Noise Control Plan**") in form and substance as follows:

- Shall cover the whole of the Infrastructure including the PWTP, the WWTP and any other noise generating equipment at other locations including the residuals treatment and any standby power and pump stations throughout the Infrastructure;
- Include procedures for routine monitoring and measurement of noise levels during operation of the Infrastructure to demonstrate compliance with the requirements set forth in Section 4.8.6;
- Identify the requirements of any relevant Governmental Authority, including both environmental and occupational noise limits;
- Set out the processes and procedures for inspection, repair and maintenance of all noise suppression and attenuation equipment;
- Include procedures for the routine monitoring and measurement of noise levels;

- Include response procedures to be followed in the event of complaints, or that noise levels are determined to exceed the permitted levels; and
- Set out the interface with the other relevant plans and systems, including the Call Centre Plan, forming part of the Contractor's Management Systems and Plans.

Once approved by the Province, the Noise Control Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period monitor and update as required the Noise Control Plan. The Noise Control Plan for a specific component of the O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

# 3.8.7 Staffing and Training Plan

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall develop and have approved by the Province, acting reasonably, a staffing and training plan (the "**Staffing and Training Plan**") in form and substance as follows:

- Describe the roles and responsibilities of the O&M staff including licensed operators, management staff, and technical and support staff for the O&M;
- Include an organization chart, job descriptions, required certification and qualifications;
- Include procedures to review and update the plan periodically to reflect any changes in staff and staffing needs;
- Include processes to ensure that at all times a sufficient number of staff (including all required classes of operator and grades of supervisory staff) are deployed in the performance of the O&M; this shall include ensuring that there are sufficient staff to cover periods of holiday, sickness, other absences and anticipated and actual peaks in demand staffing requirements;
- Include a staff training needs assessment procedure to ensure that all staff receive such training and supervision as is necessary to enable them to fulfil their roles effectively;
- Set out the training programs to be provided for all O&M staff including safety, regulatory compliance, and process control training, and for fulfilment of all regulatory training requirements, including environmental and occupational health and safety; and

• Set out the training to be provided prior to the start of the Operating Period, and for new staff employed during the Operating Period; such training shall cover both the theory of operation and maintenance procedures, as well as practical training on the Infrastructure itself, and shall make use of the SOP.

Once approved by the Province, the Staffing and Training Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period monitor and update as required the Staffing and Training Plan. The Staffing and Training Plan for a specific component of the O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

### 3.8.8 Residuals Management Plan

The Contractor shall have a residuals management plan (the "**Residuals Management Plan**") and the Residuals Management Plan shall be one of the Contractor's Management Systems and Plans.

The Residuals Management Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Set out the strategy and procedures for the management of residuals from the each of the treatment facilities in fulfilment of the Technical Requirements;
- Include procedures to ensure that residuals generated by the PWTP and the WWTP are managed in compliance with the requirements of any Governmental Authority;
- Describe the methods to be used for collection, transportation, and disposal of residuals;
- Include a forecast of the quantities of residuals and the schedule for removal of the residuals from the Lands throughout the Operating Period, making specific reference to the plans for removal during the last two years of the Term leading up to handback;
- Set out the sampling, analysis and record-keeping procedures to be applied for all residuals management activities; and
- Include procedures for documentation and record keeping of the removal, transporting and ultimate disposal of the residuals.

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall further develop and have approved by the Province, acting reasonably, the Residuals Management Plan in form and substance to include the additional requirements set out below:

- Include an updated forecast of the quantities of residuals and the schedule for removal of the residuals from the Lands during the Operating Period, making specific reference to the plans for removal during the last two years of the Term leading up to handback; and
- Incorporate the licenses and any license constraints that the Contractor has secured for the residuals disposal and for any subcontractors that the Contractor intends to rely upon for this purpose.

Once approved by the Province, the updated Residuals Management Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period, monitor and update as required the Residuals Management Plan. The Residuals Management Plan for a specific component of the O&M, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

### 3.8.9 License Management Plan

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall develop and have approved by the Province, acting reasonably, a license management plan (the "License Management Plan") in form and substance as follows:

- Establish a register of all of the licenses for the Infrastructure;
- Include processes and procedures for managing and maintaining the register to ensure that it is kept up to date; and
- Include procedures to ensure that all of the required approvals and licenses are kept in good standing.

Once approved by the Province, the License Management Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period monitor and update as required the License Management Plan. The License Management Plan for a specific component of the O&M, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

### **3.8.10** Security Plan

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall develop and have approved by the Province, acting reasonably, a security plan (the "**Security Plan**") in form and substance as follows:

- Designed to ensure that the Infrastructure is in compliance with all applicable laws with respect to guarding against terrorist and security threats;
- Describe the Contractor's security systems and procedures including access control arrangements to the PWTP and the WWTP, and out of hours monitoring arrangements for the Infrastructure as a whole;
- Include procedures to ensure that the Infrastructure security complies with the requirements of any Governmental Authority;
- Include procedures to monitor and address changes to the Infrastructure, the environment or the O&M that that might affect security including physical changes, staffing levels, security procedures or perimeters;
- Include procedures to audit the effectiveness of the Security Plan;
- Keep a record of all recorded Security Plan incidents, including any security breaches or failures and Security Plan audits including non-conformances; and
- Set out the format of the annual security report to the Province including a summary of the records referred to above.

Once approved by the Province, the Security Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period monitor and update as required the Security Plan. The Security Plan for a specific component of the O&M, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

# 3.8.11 Call Centre Plan

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall develop and have approved by the Province, acting reasonably, a call centre plan (the "**Call Centre Plan**") in form and substance as follows:

• Describe the communication systems and database(s) that will be used to receive, record, and close out stakeholder contacts received by the Call Centre and through other media including e-mails, faxes and written correspondence;

- Set out the Call Centre record keeping processes and procedures and the means of making these available to the Province;
- Set out the response plans and lines to take for responding to foreseeable event notifications including; Major Incidents, Infrastructure Performance Failures, bursts, sewer flooding, and any other foreseeable incidents or complaints;
- Include procedures to investigate complaints received and to investigate and provide responses to the complainant;
- Include procedures to track the time taken from receipt of a query or complaint to first response and final close-out;
- Include communication protocols for upward reporting of Major Incidents to the Province; and
- Include procedures to regularly review the effectiveness of the Call Centre Plan and to update and modify it in response to new types of query and to address any recurring issues.

Once approved by the Province, the Call Centre Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period monitor and update as required the Call Centre Plan. The Call Centre Plan for a specific component of the O&M, shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

# 3.8.12 Water and Wastewater Sampling and Analysis Plan

The Contractor shall have a water and wastewater sampling and analysis plan (the "Water and Wastewater Sampling and Analysis Plan") and the Water and Wastewater Sampling and Analysis Plan shall be one of the Contractor's Management Systems and Plans.

The Water and Wastewater Sampling and Analysis Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Set out the schedule and procedures to be followed to fulfil the sampling and analysis requirements of the DBFO Agreement and the regulatory approvals and licenses for the Infrastructure;
- Describe the Contractor's designs for the on-line Quality Monitors for the Raw Water, the Treated Water and the Treated Wastewater;
- Describe the strategy for the daily testing of the Raw Water, the Treated Water and the Treated Wastewater;

- Describe the strategy for the periodic testing of the Raw Water, the Treated Water and the Treated Wastewater;
- Set out the logistical arrangements for handling, storage and transporting samples to the laboratory;
- Set out the laboratory analysis procedures to be followed to carry out all the water quality analysis required in accordance with the relevant AE Standards and Guidelines;
- Describe the arrangements to maintain the Raw Water, the Treated Water and the Treated Wastewater sampling points in good order;
- Describe the procedures for inspection, calibration and testing of each Quality Monitor that will be relied upon for the on-line analysis required by Section 4.7.3.2 and Section 5.6.2.3;
- Describe the procedures for inspection, calibration and testing of each Flow Meter that will be relied upon for the on-line flow measurement required by Section 4.7.3.1 and Section 5.6.2.2.1;
- Describe the procedures for inspection, calibration and testing of each Level Monitor that will be relied upon for the reservoir level measurement to verify fire-storage volumes required by Section 4.7.3.3 and Section 5.6.2.2.3;
- Describe the procedures to be followed in the event of a Quality Monitor failure, including the contingency plans for alternative quality measurement until the monitor is repaired and the response plan, including timelines to effect a repair;
- Describe the procedures to be followed in the event of a Flow Meter failure, including the contingency plans for alternative flow measurement until the meter is repaired and the response plan, including timelines to effect a repair;
- Describe the procedures to be followed in the event of a Level Monitor failure, including the contingency plans for alternative level measurement until the monitor is repaired and the response plan, including timelines to effect a repair; and
- Describe methodology to be followed for sample result data collection, communication and archiving protocols.

Prior to 30 days before the Contractor anticipates commencing the 14 Day Performance Test and as a condition to Availability, the Contractor shall further develop and have approved by the Province, acting reasonably, the Water and Wastewater Sampling and Analysis Plan in form and substance to include the additional requirements set out below:

• Include the technical specifications of the on-line Quality Monitors for the Raw Water and the Treated Water and the Treated Wastewater;

- Set out the procedures for the daily tests for the Raw Water, the Treated Water and the Treated Wastewater as specified in Section 5.6.2;
- Set out the procedures for the periodic tests for the Raw Water, the Treated Water, and the Treated Wastewater as specified in Section 5.6.2;
- Set out the detailed logistical arrangement for handling, storage, and transporting the samples to the laboratory;
- Include laboratory analysis procedures to carry out all the water quality analysis as specified in Section 5.6.5;
- Set out the procedures to maintain the Raw Water, the Treated Water and the Treated Wastewater quality sampling points in good order;
- Set out the procedures to inspect, calibrate and test each Quality Monitor that will be relied upon for the on-line tests; and
- Set out the procedures for water quality sample result data collection, communication and archiving.

Once approved by the Province, the updated Water and Wastewater Sampling and Analysis Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period, monitor and update as required the Water and Wastewater Sampling and Analysis Plan. The Sampling & Analysis Plan for a specific component of the O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

### 3.8.13 Asset Management Plan

The Contractor shall have an asset management plan (the "Asset Management Plan") and the Asset Management Plan shall be one of the Contractor's Management Systems and Plans.

The Asset Management Plan shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- Set out objectives with respect to:
  - Pursuit of continuous improvement;
  - Timely identification of performance changes;
  - Maintaining compliance with the requirements of any Governmental Authority;

- Maintaining legally defensible documentation which fulfils all applicable license and regulatory requirements;
- Triggers for outside technical support; and
- Assuring timely responses to requests for information from the Province and any Governmental Authority;
- Include procedures for asset data capture to build and maintain a comprehensive record of the scope, condition and performance of the asset base including tracking all sample analyses, maintenance records, and performance records;
- Include procedures to analyse the asset data collected to identify and report on performance and to identify deficiencies and develop plans for correcting those deficiencies and preventing their recurrence;
- Describe the Contractor's strategy for inspection, assessment and monitoring the Infrastructure for hazards and physical condition in general;
- Include an asset register and asset inventory;
- Set out the Contractor's asset management team make-up and structure;
- Set out a regime of maintenance and renewal of assets based on the condition and performance of individual assets;
- Describe the process for scheduling planned renewals and maintenance;
- Include a methodology for forecasting the levels of investment required in equipment, materials and systems;
- Describe the asset modeling techniques to be used to determine asset usage to deliver the optimum life cycle performance;
- Include a process for detailed costing of maintenance, repair and renewal activities;
- Include a planned investment profile showing investment per year;
- Describe the methodology for leakage management throughout the Treated Water distribution system;
- Describe the methodology for the asset management of the Wastewater Collection Network; and
- Set out the format and contents of the Annual Asset Management Report and the Semi-Annual Asset Management Report.

Prior to 30 days before the Contractor anticipates achieving Availability and as a condition to Availability, the Contractor shall further develop and have approved by the Province, acting reasonably, the Asset Management Plan in form and substance to include the additional requirements set out below:

- A detailed asset register containing details of all the assets comprising the Infrastructure including;
  - o fixed assets;
  - o moveable plant and equipment;
  - o consumables;
  - o spares; and
  - o chemicals;
- Include processes and procedures for inspection, assessment, maintenance and renewal of assets based on the condition and performance of individual assets and systems and their criticality to the fulfilment of the Technical Requirements and the license conditions;
- Include processes and procedures for scheduling planned renewals and maintenance in partnership with the Province and the End-users so that the availability and quality of Treated Water and the capacity of the wastewater treatment system is sufficient to meet the needs of the End-users (including the firefighting requirements) and the conditions of the licenses at all times, and to ensure that there is no disruption to the level of service received by the End-users or adverse impacts on the environment;
- Include a rolling schedule for the maintenance and renewal activities, showing work planned for the next month, three months, six months, one year and the remainder of the Term;
- Include asset management models to predict asset performance and renewal requirements based on the available condition and performance data;
- Include a CMMS to record repair, renewal and replacement of the assets on a detailed, item-by-item basis as set out in Section 5.7.8;
- Include processes and procedures for leakage management of the Potable Water Distribution System to ensure that the level of leakage is maintained constant or reduced during the Operating Period, including;
  - Processes for leakage data collection (from fixed and/or portable instruments) to accurately measure the level of leakage;
  - Timelines and methodologies for collecting and analysing the leakage data to determine the level of leakage as part of the Annual Asset Management Report (refer to Section 5.7.7);

- Processes for planning and implementing asset renewal, refurbishment and replacement programs to maintain or reduce the level of leakage; and
- Procedures for implementing changes to the Potable Water Distribution System management operation and maintenance procedures to maintain or reduce the level of leakage, including methodologies to measure the impact on water users as a result of any changes that are planned and implemented so as to ensure that there is no reduction in the level of service;
- Include processes and procedures for the asset management of the Wastewater Collection Network to ensure that the serviceability and functionality of the network is maintained throughout the Operating Period including:
  - Processes for sewer network data collection (e.g. Call Centre records of sewer blockages) to measure the network performance;
  - Timelines and methodologies for collecting and analysing the sewer network data to determine the network's serviceability as part of the Annual Asset Management Report; and
  - Processes for planning and implementing asset renewal, refurbishment and replacement programs to maintain the level of service;
- Procedures to ensure that the Asset Management Plan is maintained up to date to cover the remainder of the Operating Period; and
- Include procedures to predict any future investment requirements in respect of changes to the Infrastructure to meet new or future foreseeable requirements of any Governmental Authority.

Once approved by the Province, the updated Asset Management Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Operating Period, monitor and update as required the Asset Management Plan. The Asset Management Plan for a specific component of the O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the O&M.

# 3.9 EXISTING FACILITIES O&M PLANS

# 3.9.1 Transition Plan for Existing Facilities O&M

The Contractor shall have a transition plan for Existing Facilities O&M (the "**Transition Plan** for Existing Facilities O&M") and the Transition Plan for Existing Facilities O&M shall be one of the Contractor's Management Systems and Plans.

The Transition Plan for Existing Facilities O&M shall as of the Execution of the DBFO Agreement be in form and substance as follows:

- It shall address all of the regulatory approval and license requirements for the Existing Facilities O&M;
- Include an overview of the Contractor's approach to taking over the operation and maintenance of the Existing Facilities from the existing operator;
- Include a staffing plan for resourcing the Existing Facilities O&M including back-up resources to cover holidays, sickness and unforeseen events;
- Include a description of the service providers and subcontractors that the Contractor will retain and employ for the performance of the Existing Facilities O&M;
- Include procedures for the Raw Water, the Treated Water and the Treated Wastewater sampling and analysis to demonstrate compliance with the Existing Facilities Licenses;
- Include emergency response plans designed specifically for the Existing Facilities O&M; and
- Define the procedures for the preparation and submission of the monthly and annual reports required by the Existing Facilities Licenses.

Prior to 14 days before the transition target date (the "**Transition Target Date**"), the Contractor shall further develop and have approved by the Province, acting reasonably, the Transition Plan for Existing Facilities O&M in form and substance to include the additional requirements set out below:

- Full details for taking over the every aspect of the Existing Facilities O&M, including transitioning all of the existing service and supply agreements, replacing or retaining rolling stock and mobile equipment, supplying staffing and resources, and ensuring sufficient stocks of chemicals, utilities, and other consumables;
- Include processes for taking over the sampling and analysis of the Raw Water, the Treated Water and the Treated Wastewater, including uploading historic data as required to maintain historic performance trends and rolling average performance analyses;
- Identify the staff, including licensed operators who will fulfill the roles identified in the Contractor's staffing plan for the Existing Facilities O&M;
- Set out the transition arrangements for each of the existing service providers and subcontractors that are engaged in the Existing Facilities O&M; and
- Set out the Contractor's communications processes and procedures for coordination with the Province and the Province's existing operators to ensure a seamless transition without disruption to the operation of the Existing Facilities.

Once approved by the Province, the updated Transition Plan for Existing Facilities O&M shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the transition monitor and update as required the Transition Plan for Existing Facilities O&M. The Transition Plan for Existing Facilities O&M for a specific component of the Existing Facilities O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Existing Facilities O&M.

# 3.9.2 Existing Facilities O&M Plan

Prior to 14 days before the Transition Target Date, the Contractor shall develop and have approved by the Province, acting reasonably, an Existing Facilities O&M plan (the "**Existing Facilities O&M Plan**") in form and substance as follows:

- A staffing plan for resourcing the Existing Facilities O&M to ensure that at all times a sufficient number of staff (including all required classes of operator and grades of supervisory staff) are deployed in the performance of the Existing Facilities O&M; this shall include ensuring that there are sufficient staff to cover periods of holiday, sickness, other unforeseen events;
- A description of the service providers and subcontractors that the Contractor will retain and employ for the performance of the Existing Facilities O&M;
- List all mobile plant and equipment to be used for the Existing Facilities O&M;
- Set out the SOP for operation and maintenance activities, and integrate the SOP with the operation and maintenance requirements of the operation and maintenance manuals;
- Set out the routine maintenance program for the Existing Facilities O&M and how these activities will be delivered;
- Set out the procedures for communications and work management systems to be used by the Contractor to manage the Existing Facilities O&M staff and service providers and coordinate operations between the supervisor, subcontractors and operators;
- Include procedures for the Raw Water, the Treated Water and the Treated Wastewater sampling and analysis to demonstrate compliance with the requirements of the Existing Facilities Licenses;
- Include an emergency response plan designed specifically for the Existing Facilities O&M;

- Include details of the proposed inspection, calibration and testing equipment and methodology to be followed for the Flow Meters, Level Monitors and water and wastewater quality analyzer calibrations;
- Include the procedure for the preparation and submission of the monthly and annual reports required by the Existing Facilities Licenses; and
- Include a call centre plan specifically for the Existing Facilities O&M in form and substance as follows:
  - Describe the communication systems and database(s) that will be used to receive, record, and close out stakeholder contacts received by the call centre and through other media including e-mails, faxes and written correspondence;
  - Set out the call centre record keeping processes and procedures and the means of making these available to the Province;
  - Set out the response plans and lines to take for responding to foreseeable event notifications including; Major Incidents, bursts, sewer flooding, and any other foreseeable incidents or complaints;
  - Include procedures to investigate complaints received and to investigate and provide responses to the complainant;
  - Include procedures to track the time taken from receipt of a query or complaint to first response and final close-out;
  - Include communication protocols for upward reporting of Major Incidents to the Province; and
  - Include procedures to regularly review the effectiveness of the call centre plan and to update and modify it in response to new types of query and to address any recurring issues.

Once approved by the Province, Existing Facilities O&M Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period update as required the Existing Facilities O&M Plan. The Existing Facilities O&M Plan for a specific component of Existing Facilities O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Existing Facilities O&M.

# 3.9.3 Existing Facilities Occupational Health and Safety Plan

Prior to 14 days before the Transition Target Date, the Contractor shall develop and have approved by the Province, acting reasonably, an Existing Facilities occupational health & safety plan (the "**Existing Facilities Occupational Health and Safety Plan**") in form and substance as

### follows:

- That meets the requirements of the Occupational Health and Safety Act, Good Industry Practice, and the requirements specified in Schedule 16;
- Identify applicable laws and legislation;
- Identify the Prime Contractor for the operation and maintenance of each facility and state their corporate safety policy;
- Set out the safe working procedures to be followed;
- Describe the Contractor's safety training programs;
- Describe the Contractor's accident prevention programs;
- Set out the roles and responsibilities of the Contractor's key safety management personnel;
- Set out the procedures to be followed in the case of emergencies including details of the manner and timing of reaction to emergencies to ensure public safety and protection of property while complying with the requirements of the DBFO Agreement regarding such matters; and
- Set out the processes and procedures for planning, performing, reporting and closing out safety audits.

Once approved by the Province, the Existing Facilities Occupational Health and Safety Plan shall be deemed to form one of the Contractor's Management Systems and Plans, and Schedule 4 (Contractor's Management Systems and Plans) to the DBFO Agreement shall be amended and restated accordingly.

Subject to section 5.5 of the DBFO Agreement, the Contractor shall during the Construction Period update as required the Existing Facilities Occupational Health and Safety Plan. The Existing Facilities Occupational Health & Safety Plan for a specific component of Existing Facilities O&M shall be reviewed in accordance with Schedule 5 (Design and Plan Certification Process and Review Procedure) to the DBFO Agreement prior to the start of that component of the Existing Facilities O&M.