



**OPUS** DAYTONKNIGHT

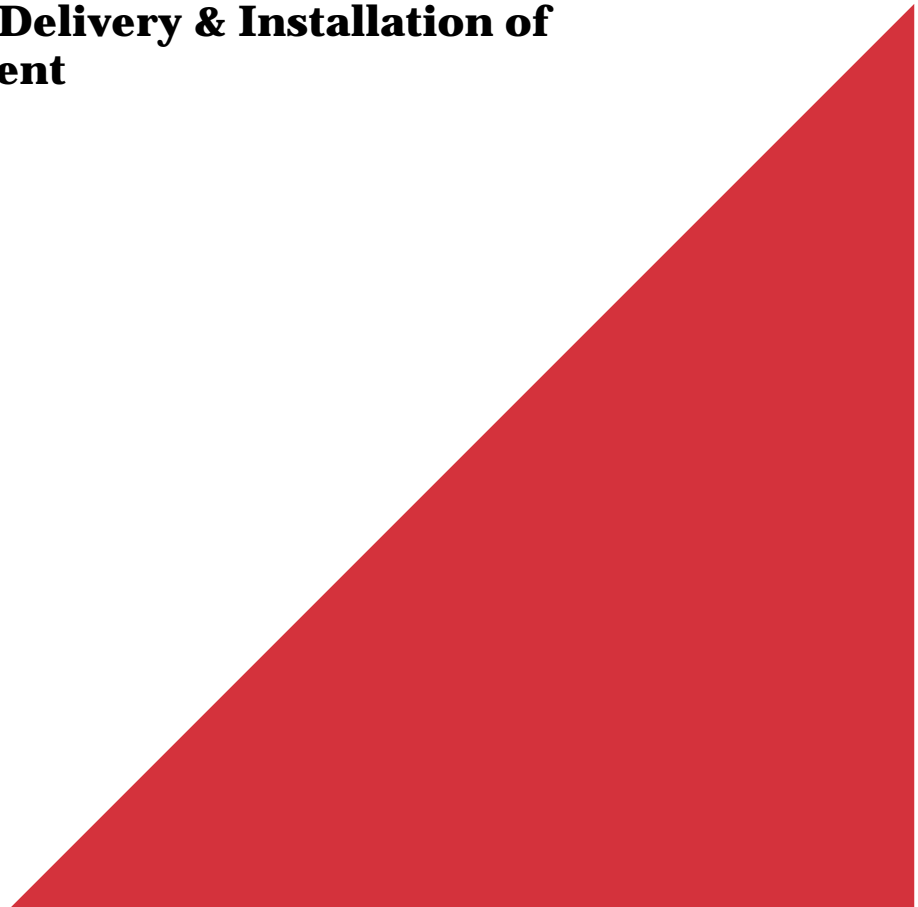


**REGIONAL DISTRICT**  
of Fraser-Fort George

*Bear Lake Water System*

# **Request for Proposals ES-14-01 (RFP) Replacement Surge Tank**

**Supply, Delivery & Installation of  
Equipment**



*Bear Lake Water System*

---

# Request for Proposals ES-14-01 (RFP)

## Replacement Surge Tank

### Supply, Delivery & Installation of Equipment

Prepared By

  
Derek Kronebusch, P.Eng.  
Project Engineer

Opus DaytonKnight Consultants Ltd  
Prince George Office  
201-1110 6th Avenue  
Prince George BC V2L 3M6  
Canada


Reviewed By

  
Scott Bilbrough, P.Eng.  
Branch Manager

Telephone: +1 250 562 0038  
Facsimile: +1 250 562 0058

Date: January 2014  
Reference: D-47111.02 / ES-14-01  
Status: Final

Approved for  
Release By

  
Jim Martin, CAO  
Regional District of Fraser-Fort George

# Contents

<b>1</b>	<b>General Instructions &amp; Requirements of RFP Process .....</b>	<b>3</b>
1.1	Scope of Work.....	3
<b>2</b>	<b>Proponent Instructions.....</b>	<b>3</b>
2.1	Proposals.....	3
2.2	Revisions to Proposals.....	3
2.3	Taxes .....	4
2.4	Currency.....	4
2.5	Form of Proposal .....	4
2.6	Proposal Terminology .....	4
2.7	RFP Ineligibility.....	4
2.8	RFP Signing - Signing of the Agreement .....	5
2.9	Contract/RFP Documents.....	5
2.10	Workers' Compensation.....	7
2.11	Indemnity.....	7
2.12	Patent Infringement .....	7
2.13	Disqualification.....	8
2.14	Withdrawal of Proposal.....	8
2.15	Right Not To Award.....	8
2.16	No Claim for Compensation.....	8
2.17	Limitation of Damages .....	9
2.18	Licences and Permits.....	9
2.19	Insurance .....	9
2.20	Confidentiality .....	9
2.21	Proposed Timelines .....	10
2.22	Submittals.....	10
2.23	Proposed Payment Schedule to Successful Proponent .....	10
<b>3</b>	<b>Specifications.....</b>	<b>1</b>
3.1	General.....	1
3.2	Scope of Work.....	1
3.3	Substitutions.....	1
3.4	Shop Drawings.....	1
3.5	Operation and Maintenance Manuals .....	2
3.6	Delivery, Handling, and Storage of New Equipment .....	2
3.7	Inspection .....	3
3.8	Warranty .....	3
3.9	Surge Tank .....	3
3.10	Check Valve.....	5
3.11	Piping, Fittings, Gaskets and Bolts .....	7

---

# 1 General Instructions & Requirements of RFP Process

## 1.1 Scope of Work

The project is located in Bear Lake, British Columbia, and requires the supply, delivery and installation of a surge tank and check valve to replace the existing equipment nearing the end of its service life. The proponent shall provide all necessary equipment, materials, and labour to complete the task. The project is to begin as soon as possible, shall be complete no later than April 30, 2014.

## 2 Proponent Instructions

### 2.1 Proposals

**Proposals signed, executed and dated**, will be received at the Regional District Office, before 2:00 P.M. local time on February 6, 2014. The Owner will not accept any responsibility for RFP documents delivered to the incorrect location. Electronic submissions (Adobe PDF) will only be accepted if the original signed document is received within 1 week of the closing date.

Mailed RFP Forms shall be signed and in a closed envelope, clearly identified with bidder's name, bidders address and the following information:

1. Attention: General Manager of Financial Services  
Regional District of Fraser Fort George  
3<sup>rd</sup> Floor, 155 George Street  
Prince George, BC V2L 1P8
2. Request for Proposals ES-14-01  
Replacement Surge Tank  
Supply, Delivery and Installation of Equipment

### 2.2 Revisions to Proposals

Amendments to the submitted Proposal will be permitted, if received in writing or by electronic submissions (Adobe PDF), prior to RFP closing and if endorsed by the same party or parties who signed the offer.

Amendments will be accepted provided that the amendment only is shown and not the total price. Any Revision must be received before the Closing Time.

## 2.3 Taxes

Proponents shall submit taxes as shown on Part III: Form of Proposal.

## 2.4 Currency

All prices shall be submitted in Canadian funds only. No authorization to pay in any foreign currency will be permitted.

## 2.5 Form of Proposal

Part III: Form of Proposal is at the end of this document, and must be completed properly in order to be considered.

## 2.6 Proposal Terminology

Throughout this Request for Proposal, terminology is used as follows:

1. “Owner” means the Regional District of Fraser-Fort George
2. “Consultant” means Opus DaytonKnight Consultants Ltd.
3. “Contract” means the written agreement resulting from this Request for Proposal between the Owner and the Supplier;
4. “Supplier” means the successful proponent to this Request for Proposal who enters into a written contract with the Owner;
5. “Will”, “shall”, “must”, “mandatory” or “required” means a requirement that must be met in order to be considered;
6. “Proponent” means an individual or a company that submits, or intends to submit, a proposal in response to this “Request for Proposal”;
7. “Should”, “desirable” or “ask” means a requirement having a significant degree of importance to the objectives of this Request for Proposal.

## 2.7 RFP Ineligibility

1. RFP’s that are unsigned, improperly signed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind may, at the discretion of the Owner, be rejected.
2. RFP Forms and enclosures, which are improperly prepared, may at the discretion of the Owner, be rejected.

3. Proposals submitted after the above closing date and time shall be returned to the proponent unopened.

## **2.8 RFP Signing - Signing of the Agreement**

By submitting a Proposal, the Proponent agrees that, if the Proposal is selected by the Owner, the Proponent will execute the Agreement within fourteen (14) days of the date on which the Owner requests it to do so in writing.

1. The Proposal Form shall be signed to be considered. Any Proposal received by the Owner that is unsigned will be rejected.
2. Sole Proprietorship: Signature of Sole Proprietor in the presence of a witness who will also sign. Proponents are asked to insert the words “Sole Proprietor” under the signature.
3. Partnership: Signature of all partners in the presence of a witness who will also sign. Proponents are asked to insert the word “Partner” under each signature.
4. Limited Company: Signature of a duly authorized Signing Officer(s) in their normal signatures. Proponents are asked to insert the capacity in which the Signing Officer acts, under each signature.
5. Joint Venture: Each party of the Joint Venture shall execute the Proposal under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

## **2.9 Contract/RFP Documents**

### **2.9.1 Availability**

RFP documents are made available at:

1. In PDF (Public Document Format) file format from the Regional District of Fraser-Fort George website, [www.rdffg.bc.ca](http://www.rdffg.bc.ca);
2. On BCBid website, [www.bcbid.gov.bc.ca](http://www.bcbid.gov.bc.ca);
3. In hard copy from:
  - a. The Regional District Service Center, 155 George Street, Prince George, BC between 8:00 am and 5:00 pm, Monday through Friday, excluding statutory holidays.
  - b. OPUS DaytonKnight Consultants Ltd., 201 – 1110 6th Avenue, Prince George, V2L 3M6, between 9:00am and 5:00pm, Monday through Friday, excluding statutory holidays.

RFP documents are only for the purpose of obtaining offers for this project. Their use does not confirm a license or grant for other purposes.

---

### 2.9.2 Examination

Upon finding discrepancies or omissions in the RFP Documents, immediately notify the Consultant.

### 2.9.3 Inquiries

1. Proponents are advised that if clarification on Proposal contract issues and/or specifications is required for this Proposal, proponents are asked to communicate their request(s) by sending an email to the individual shown below. This approach will assist staff to be aware of proponent requests, and to facilitate timely responses.
2. Questions relating to RFP submissions, contractual requirements or technical questions must be directed to:

Derek Kronebusch, Project Engineer

OPUS DaytonKnight Consultants Ltd.

Phone: (250) 562-0038 or Fax: (250) 562-0058.

Email Address: derek.kronebusch@opusdaytonknight.com

Information obtained from sources other than the above, is not official and may be inaccurate.

### 2.9.4 Addenda

1. Addenda may be issued during the RFP period. All addenda become part of the Contract Documents.
2. The Owner reserves the right to modify the terms of this Request for Proposal at any time at its sole discretion. Such modifications will be communicated to all Proponents through formal addendums.
3. The Consultant will formally provide the Proponents with the addendum through email transmission.
4. If a Proponent finds, during examination of the RFP Document, any errors, discrepancies, omissions, ambiguities or conflicts in or among the RFP Documents, or is in doubt as to their meaning, the Proponent shall bring them to the attention of the Contact Person, not later than three (3) days before the Proposal closing date. Such questions should be

forwarded to the Contact Person in writing by hand delivery, courier, mail, facsimile, or electronic mail. At the discretion of the Consultant, the Consultant may determine to respond by clarifying existing Proposal documents directly to the inquirer only, by issuing an Addendum to advise all Proponents of additional information, conditions, or essential clarifications, or may elect to decline to respond.

### **2.9.5 Offer Acceptance/Rejection**

1. After acceptance by the Owner will issue the successful Proponent a written award notice and a Purchase Order. No work shall proceed without a Purchase Order issued by the Owner.
2. The Owner shall not be obligated in any manner to any Proponent whatsoever until a written agreement has been duly executed relating to an approved Proposal.
3. No changes to the work will be undertaken by the Proponent without a written change order. The Owner will entertain no payment for extra work or changes unless a change order and Purchase Order has been issued by the Owner.

## **2.10 Workers' Compensation**

The Proponent will abide by the provisions of the Workers' Compensation Act of British Columbia. Prior to undertaking any of the work in this Contract, the Proponent will provide its WorkSafeBC number and will keep current all assessments required to be paid in relation to the Contract amount. The Proponent will provide a Clearance Letter from WorkSafeBC to the Owner prior to the commencement of work. Where the Proponent may not be eligible for WorkSafeBC coverage, the Proponent will provide a copy of a letter from WorkSafeBC confirming ineligibility.

## **2.11 Indemnity**

Notwithstanding the providing of insurance coverage by the Proponent, the Proponent hereby agrees to indemnify and save harmless the Owner, its officers, agents, servants and employees and each of them from and against claims, demands, losses, costs, damages, actions, suits or proceedings by whomever made, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by or attributable to the negligent activities of the Proponent, its servants, agents, and sub-Contractors, in providing the services and performing the work of this Contract, excepting always liability arising solely out of the negligent act or omission of the Owner.

## **2.12 Patent Infringement**

Proponents may be required to demonstrate to the Owner that the material(s) or processes included in their Proposal does not infringe any Patent, and that if, for any reason, a claim is subsequently made by anyone suggesting that a Patent has been infringed upon and that the



---

Owner may be liable, such Proponent will indemnify the Owner in every respect regarding the claim.

## **2.13 Disqualification**

If a Proposal contains a defect or fails in some way to comply with the specific requirements of the Conditions of Proposal, which in the sole discretion of the Owner is not material, the Owner may waive the defect and accept the Proposal.

The determination of whether or not to remove any Proposal submission from the evaluation process will be made in the absolute discretion of the Owner. The provisions of the condition regarding Limitation of Damages will also apply to any decision under this section.

## **2.14 Withdrawal of Proposal**

All Proposals are irrevocable at the Closing Time, remain irrevocable for a period of sixty (60) days following the Closing Time, and may not be altered or withdrawn during that period for any cause without the written permission of the Owner.

## **2.15 Right Not To Award**

The lowest or any Proposal will not necessarily be accepted. The Owner reserves the right to reject any or all Proposals.

If the Owner elects to reject all Proposals, the Owner will not be liable to any Proponent for any claims, whether for costs, damages incurred by any Proponent in preparing the Proposal, loss of anticipated profit in connection with the Contract, or any other matter whatsoever.

## **2.16 No Claim for Compensation**

Except as expressly and specifically permitted in these instructions to Proponent, no proponent shall have any claim for any compensation of any kind whatsoever, as a result of participating in the Proposal, and by submitting a RFP each proponent shall be deemed to have agreed that it has no claim.

## **2.17 Limitation of Damages**

The Proponent, by submitting a Proposal, agrees that it will not claim damages in excess of the reasonable costs incurred by the Proponent in preparing its Proposal for matters relating to the Award or in respect of the Proposal process, and the Proponent, by submitting a Proposal, waives any claim for loss of profits if no Award is made to the Proponent.

## **2.18 Licences and Permits**

The Proponent shall obtain all licences, permits, approvals, and insurance required under the Laws of the Province of British Columbia with regard to its own activity under this contract.

## **2.19 Insurance**

The Proponent shall save harmless the Owner from any liability. The Proponent will, at their own expense, provide and maintain, either by way of a separate policy, or by endorsement to an existing policy, Commercial General Liability Insurance, acceptable to the Owner and subject to the limits of not less than two million dollars (\$2,000,000) inclusive, per occurrence for bodily injury, death and damage to property including loss of use thereof. It is the sole responsibility of the Proponent to determine if additional limits of liability insurance coverage are required to protect them from risk. Prior to commencement of work, the Proponent will provide the Owner with proof, in the form of a copy of an Insurance Certificate of the policy, that the insurance is in full force and effect, and that the coverage meets or exceeds the insurance requirements herein. The insurance will be kept in force until the completion of the Contract.

The Owner will be named as Additional Insured on all Commercial General Liability policies required by the Proponent to meet the insurance requirements herein.

The Proponent shall, for itself and for its employees, assume all risk of accidents, damage, injury or loss resulting from any cause whatsoever in the performance of work.

## **2.20 Confidentiality**

In the course of the work, the Proponent may come across documents and information that is of a confidential nature. The Proponent will treat as confidential and will not, without the prior written consent of the Owner, publish, release or disclose or permit to be published, released or disclosed, either before or after the expiration or termination of this Agreement, any information supplied to, obtained by, or which comes to the knowledge of the Proponent as a result of undertaking the Work herein. Failure to comply with this Confidentiality clause may result in immediate termination of the Contract.

## 2.21 Proposed Timelines

The following activities and dates are proposed by the Owner:

<b>Activity</b>	<b>Proposed Completion Dates:</b>
Proposal Closing Date	February 6, 2014
Proposed Notice of Award	February 14, 2014
Draft Shop Drawings Due Date	February 28, 2014
Latest Date for Commissioning	April 30, 2014

## 2.22 Submittals

The successful supplier for this Proposal will be responsible for the provision of equipment specification submittals and approvals to the Owner's consultant throughout the supply agreement. All items being shipped must receive written approval from the Owner's consultant through the use of submittals.

## 2.23 Proposed Payment Schedule to Successful Proponent

The Owner will issue payment to the successful Proponent based on the following schedule:

1. Payment of 10% upon review of shop drawings.
2. Payment of 40% when equipment has been delivered to the site providing equipment doesn't contain any concealed or unconcealed damages.
3. Final payment of 50% upon commissioning of all materials.

## **3 Specifications**

### **3.1 General**

All equipment and materials supplied under this Contact shall be new and of current manufacture. All workmanship shall be of the highest quality and sub-standard work will be rejected.

### **3.2 Scope of Work**

The proponent shall supply, install, and test all equipment and piping necessary to properly and fully complete the systems as specified herein and as shown on drawings, unless otherwise indicated. All materials and appliances necessary for this work shall be provided by the Proponent.

The work shall include but not be limited to:

1. Supply of one (1) surge tank
2. Check Valve
3. Piping, Fittings, Gaskets and Bolts.

### **3.3 Substitutions**

Supply approved equipment as indicated by the drawings and specifications. Alternate materials may be substituted only if such substitutions have been approved in writing by the Engineer.

### **3.4 Shop Drawings**

The Proponent shall supply at least three (3) copies of drawings illustrating external dimensions and details for the equipment and all associated equipment to the Engineers for review.

In addition, at least three (3) copies of a bill of material listing the significant items of mechanical equipment, proposed shall be provided. The materials used in the principal parts of the valves, fittings, piping, and the materials specification to which these comply shall be listed.

Wiring diagrams shall be supplied where applicable.

No more than eight copies of drawings, schematics or bill of material will be reviewed by the Engineer. Maximum drawings size shall be 250 mm by 430 mm format.

When submitting the required drawings and bill of material, the Proponent shall advise the Engineer in writing of any changes or exceptions therein to the specifications or related drawings. The Engineer will review these prints of the drawings or mark them with such corrections as are necessary and at least one (1) copy of the submitted drawings and bill of materials will be returned to the Proponent stamped "reviewed" or as otherwise pertinent. Any attached comments provided by the Engineer regarding the submittal shall be the appropriate supplier.

The Proponent shall allow at least one week for the Engineer to review shop drawings. Any manufacturing done before approval of the drawings by the Engineer will be at the Proponent's risk.

The review of the Proponent drawings and bill of material shall be for determining the general conformance of the equipment with the design concept and shall not relieve the Proponent of any obligation in the Contract nor of his responsibility for any errors or omissions.

### **3.5 Operation and Maintenance Manuals**

The Proponent shall furnish the Engineer with three (3) complete bound sets of typewritten or printed instructions, covering the proper method of operating and maintaining the equipment and systems included in this contract. It is also recommended that the Proponent retain a fourth copy of the manual for future reference.

Included within the manual shall be a spare parts list for each item. Also included within the manual shall be manufacturer's original printed operation, performance information and maintenance manuals covering specific items of equipment provided that may require field adjustment, programming or servicing.

The manual shall also include all finalized shop drawings in 280 mm by 430 mm format. Binders shall be easily opened and reasonable space shall be available for the inclusion of design criteria and background information by the Engineer.

In addition, the contractor shall provide an electronic copy of the manual in portable document format (.pdf) on a CD-ROM (Compact Disc, read-only memory).

Copies of basic operation and maintenance manuals shall be made available by the Proponent at site during commissioning.

### **3.6 Delivery, Handling, and Storage of New Equipment**

The Proponent shall store the equipment at their own warehouse(s) until the Proponent, Sub-Contractor or Owner requests the items for delivery to the site. The Proponent shall insure all equipment is available for installation, no later than the dates set out in the Proposed Timelines. The exact date for delivery to the site will be determined by the Proponent and Owner.

The scheduling and transport cost of delivery will be at the cost of the Proponent. The Proponent shall co-ordinate with the Owner and allow a minimum of two weeks for the Owner to schedule a delivery date to the site.

Storage areas shall be made accessible to the Engineer at any time for the determination of the condition of storage. Equipment stored in unheated or open areas on the site shall be covered and provided with thermostatically controlled heaters of sufficient size to keep temperature of the equipment above the dew point. All equipment shall be adequately protected from damage during storage from dust, dampness or any other injurious substance. Any damage which may occur during storage shall be made good by the Proponent at his expense.

All equipment shall be adequately protected from damage during handling and from dust, dampness or any other injurious substance during delivery to the site. Any damage which may occur during handling and shipping shall be made good by the Proponent at his expense.

All costs related to claims by the Sub-Contractor as a result of late or damaged equipment shall be at the Proponents cost.

### **3.7 Inspection**

The Engineer reserves the right to inspect and test any material to be supplied under this specification at the manufacturer's plant, the storage area or after arrival at the location specified for delivery. All materials, components, or parts which do not meet these specifications, the standards, or are defective, shall be replaced by the Proponent at his expense to the satisfaction of the Engineer.

### **3.8 Warranty**

All equipment shall be covered by a one (1) year warranty and all costs related to replacing or repairing the defective equipment shall be covered at the cost of the Proponent. The warranty period for the equipment begins on the day of commissioning.

The Proponent shall be responsible to train any Sub- Contractors to install and handle the equipment to avoid warranty claims.

### **3.9 Surge Tank**

#### **3.9.1 General**

The surge tank shall be supplied complete with bladder, vessel, access manhole, pressure gauge, relief valve, and level indicator.

### 3.9.2 Capacity

The tank shall be a minimum of 470 L capacity, with external dimensions similar to the existing tank (1.65m tall, 0.6m diameter) to fit the current space available for the tank. The surge tank shall be pre-charged with air, suitable for an operating water pressure of 40 psi.

### 3.9.3 Strength

The tank shall have a pressure rating of 8 bar, and suitable for a test pressure of 12 bar.

### 3.9.4 Construction

The epoxy coated steel tank shall utilize a replaceable bladder and compressed air to provide surge protection to the attached existing piped system.

The pre-charge pressure will be located between the shell of the tank and the bladder. The side manhole shall be removable to allow inspection and maintenance of the bladder. The bladder shall be sized to conform to the inner shape of the vessel.

A pressure gauge, gas charging valve, relief valve and level indicator shall be installed on the tank for operator ease.

The outlet piping attached to the pressure vessel shall be manufactured, such that the tank can be field fitted to match the existing approximate pipe invert of 7cm from the existing concrete slab.

Engraved metal identification labels shall be fitted to the pressure vessel, indicating all replacement part numbers / descriptions, local distributor contact information and manufacture's contact information.

### 3.9.5 Material

The tank assembly shall be manufactured of SA516 grade 60 steel throughout. Support tank by support legs four for attaching to a concrete floor or slab. Material of construction shall comply with ASTM A 36 or ASTM A 285, Grade C. Weld the support legs to the tank.

All interior surfaces shall be applied with an interior epoxy paint that is NSF61 approved, high build, high solids with a total thickness no less than 6 mil. All exterior surfaces shall be have an exterior paint having a first coat of epoxy zinc of no less than 3 mils thick, second coat of polyurethane of no less than 5 mils thick and a top coat of polyurethane lacquer no less than 10 mils thick. The colour of the exterior tank shall be confirmed / approved by the owner.

The bladder, seals and all other materials in contact with the internal fluid (potable water) shall be NSF61 approved, and suitable for potable water.

Bladder tank shall be National Board approved with Liquid Relief Valve set at 10% above the operating pressure.

The vessel shall be manufactured in accordance to ASME Section VIII with U stamp and National Board Registered.

The outlet flange shall be 150mm diameter and made with a flange bolt pattern equal to ANSI Class 150.

### **3.9.6 Installation**

The tank shall be installed by the proponent or a qualified contractor working for the proponent. The installation of the tank to the existing piped system shall only occur, upon a successful completion of section 3.9.7 Testing and Commissioning. The proponent will also be responsible for the removal and disposal of the existing surge tank. All work shall be co-ordinated with the Owner and Engineer to match schedules. The installation shall be done, such that no damage is done to the existing infrastructure, and if any damage were to occur, the proponent is responsible for the repair / replacement of damaged infrastructure.

### **3.9.7 Testing & Commissioning**

The tank shall be pressure tested, on-site with the Owner, Engineer and a qualified technical manufacturer's representative to witness testing.

Following testing, the vessel and all other materials in contact with the potable water shall be disinfected in accordance with AWWA C652, and flushed until no residual chlorine is detected. Two samples shall be taken for bacterial testing after flushing, and negative test results must be confirmed, prior to connecting to the existing water system.

All costs associated with this section shall be at the cost of the proponent, except for bacterial testing.

## **3.10 Check Valve**

### **3.10.1 General**

The Check Valve shall be of the silent operating type that begins to close as the forward flow diminishes and fully closes at zero velocity preventing flow reversal and resultant water hammer.

The valves used in potable water service shall be certified to NSF/ANSI 61, Drinking Water System Components – Health Effects, and certified to be Lead-Free in accordance with NSF/ANSI 372. Manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.

Wafer style valve shall be provided in 100mm size for installation between ASME B16.1 Class 125 or Class 250 iron flanges or sizes 50mm to 100 mm in accordance with ISO 7005 PN10 or PN16.



### 3.10.2 Design

The valve design shall incorporate a centre guided, spring loaded disc and having a short linear stroke that generates a flow area equal to the nominal valve size.

The operation of the valve shall not be affected by the position of installation. The valve shall be capable of operating in the horizontal or vertical positions with the flow up or down.

All component parts shall be field replaceable without the need of special tools. Wafer and Globe styles shall be provided with a replaceable guide bushing held in position by the spring. The spring shall be designed to withstand 100,000 cycles without failure and provide a cracking pressure of 0.5 psi.

The wafer and globe disc shall be concave to the flow direction providing for disc stabilization, maximum strength, and a minimum flow velocity to open the valve.

The valve disc and seat shall have a seating surface finish of 16 micro-inch or better to ensure positive seating at all pressures. The leakage rate shall not exceed the allowable rate for metal seated valves allowed by AWWA Standard C508 or 1 oz. (30 ml) per hour per inch (mm) of valve diameter.

Wafer-style valve seats shall be fully retained with full size threads, and sealed with an O-ring. Globe style valve seats shall be contained with a machined counter bore and restrained by the mating flange and gasket.

### 3.10.3 Materials

The threaded valve body and disc shall be ASTM B584 copper alloy C87600 lead-free bronze. The seat shall be TFE. The spring shall be Type 316 stainless steel.

Globe and wafer valve bodies shall be constructed of ASTM A126 Class B cast iron for Class 125 and Class 250 valves.

Globe and wafer seat and disc shall be ASTM B584 Alloy C83600 cast bronze or ASTM B148 Alloy C95200 aluminium bronze.

Globe and wafer compression spring shall be ASTM A313 Type 316 stainless steel with ground ends.

### 3.10.4 Options

A resilient seal shall be provided on the seat when specified to provide zero leakage at both high and low pressures without overloading or damaging the seal. The seal design shall provide both a metal-to-metal and a metal-to-resilient seal.

Valve interiors and exteriors shall be coated with an NSF/ANSI 61 certified fusion bonded epoxy in accordance with AWWA C550 when specified.

### 3.10.5 Manufacture

The valves shall be hydrostatically tested at 1.5 times their rated cold working pressure and seat tested at the valve CWP.

The manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.

Silent Check Valves shall be 14104 ABN (Wafer Style) as manufactured by Val-Matic® Valve & Mfg. Corporation, Elmhurst, IL USA or approved equal.

## 3.11 Piping, Fittings, Gaskets and Bolts

The proponent shall supply the required piping, fittings, gaskets and assembly bolts to connect surge tank to the existing piping. Flanged connections shall be utilized.

### 3.11.1 Piping and Fittings

If any new piping or fittings are required to install the surge tank, it shall be fabricated from standard ASTM A403 Type 304 or Type 316 stainless steel. Lengths shall be field verified and fabricated in the field. All welds shall be completed by a qualified welder with extensive experience welding stainless steel. All welds are subject to random testing.

All flanges shall be of Stainless steel Type 304 or Type 316 as specified for corrosive conditions.

### 3.11.2 Flange Assembly Bolts

Flange assembly bolts and all non-specialized bolts in the station shall be hexagon head machine bolts with hexagon nuts. Bolt material shall be 300 series stainless steel, installed with anti-seize lubricant. Threads shall conform to CSA B.1.1 coarse thread series, Class 2 fit. Bolt length shall be such that after the joints are made up the bolts shall protrude at least two threads past the nut, but not more than 12 mm.

### 3.11.3 Conventional Flange Gaskets

Conventional flange gaskets shall be die-cut and material shall consist of aramid fibres in a nitrile elastomeric binder with a minimum continuous temperature rating of 200°C. Thickness shall be 1.6 mm (1/16") for flanges up to 600 mm, 3.2 mm (1/8") for larger flanges. Shall be Garlock Multi-Swell 3760 as available from Custom Gaskets (604-263-1426).

### **3.11.4 Installation**

During installation, all materials in contact with the internal fluid (potable water) shall be disinfected in accordance to AWWA C651 and local health authority guidelines.

**Part III: Form of Proposal**

Proponents must complete this form and sign it.

**Print Name of Firm/Company** \_\_\_\_\_

Item No	Description	Unit	Qty.	Unit Price (\$)	Amount (\$)
1	Surge Tank	L.S.	1		
2	Check Valve	L.S.	1		
3	Piping, Fittings, Gaskets and Bolts	L.S.	1		

<b>Total Price (Not Including Taxes)</b>	\$ _____
<b>GST Tax</b>	\$ _____
<b>Total Proposal Price</b>	\$ _____
<b>Proponents are reminded to complete the pricing section shown above completely in order to be considered.</b>	
<b>Name of Firm:</b> _____	
<b>Authorized Signature:</b> _____	<b>Print Name:</b> _____
<b>State Capacity (see RFP Signing):</b> _____	
<b>Address:</b> _____	
<b>City:</b> _____	
<b>Phone #:</b> _____	<b>Fax #:</b> _____
<b>E-Mail Address:</b> _____	



**Opus DaytonKnight Consultants Ltd**  
201-1110 6th Avenue  
Prince George BC V2L 3M6  
Canada

t: +1 250 562 0038  
f: +1 250 562 0058  
w: [www.opusdaytonknight.com](http://www.opusdaytonknight.com)