

## REQUEST FOR QUOTATION

### WELL PUMP TESTING SERVICES

#### TOWN OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

#### Project

The Town of Potsdam seeks to contract with a qualified contractor to conduct testing of two existing wells on the site of the Water Treatment Plant on Sissonville Road. The testing is required for a Water Withdrawal Permit Modification request to the State of New York to serve the new Route 56 Water District. The testing services will be performed under the general direction of C2AE-subconsultant HydroSource Associates, and Town of Potsdam Certified Water System Operator Steve Siddon of Valley Water Solutions. The testing protocol and generic schedule/duration of the work are provided within this RFQ.

#### Questions

Any questions or requests for additional information are to be in writing by email to **ALL THREE PERSONS BELOW** no later than 5:00 pm EDT, Tuesday, July 5, 2021:

Claude Cormier, HydroSource Associates [ccormier@hydrosource.com](mailto:ccormier@hydrosource.com)

AND Steve Siddon, Valley Water Solutions (Operator) [steve@valleywatersolutions.com](mailto:steve@valleywatersolutions.com)

AND Kevin Feuka, C2AE [kevin.feuka@c2ae.com](mailto:kevin.feuka@c2ae.com)

Responses will be posted on the Town's website <https://potsdamny.us> no later than 5:00 pm EDT, Wednesday, July 6, 2021.

#### Submittal Deadline

**Final quotation packages must be received as noted below no later than 3:00 pm EDT, Thursday, July 8, 2021:**

**Cindy Goliber, Town Clerk  
Town of Potsdam  
18 Elm Street  
Potsdam, New York 13676**

At that time, all received quotation packages will be opened and read aloud.

#### Quotation Acceptance

The Town of Potsdam reserves the right to reject any and all bids not meeting the qualifications noted herein as deemed in the best interest of the Town. Otherwise, the Town of Potsdam Town Board intends to vote approval of the selected contractor at its regularly scheduled meeting at 6:30 pm, Tuesday July 13, 2021.

## **REQUEST FOR QUOTATION**

### **WELL PUMP TESTING SERVICES**

#### **TOWN OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK**

##### **Background Information**

The Town of Potsdam requests interested well contractors provide a cost quotation to test two existing bedrock wells that currently supply water to their Unionville Water District along Sissonville Road west of NYS Route 56. The two wells were originally installed, tested and permitted in 1999 for a rated pumping capacity of 40 gallons per minute (GPM). Pumping tests performed at that time indicated that the wells may be capable of producing a higher sustainable rate, perhaps up to as much as 100 GPM or more. The Town is now preparing to provide municipal water from this system for the NYS Route 56 Water District and wishes to determine if the wells can be permitted at a higher withdrawal rate.

NYSDOH and NYSDEC regulations require that each of the two wells undergo testing that conforms to current standards to obtain the necessary information to demonstrate that a higher extraction rate is sustainable. The Town is requesting cost quotations from interested well contractors for performing the required testing. Contractors will work in cooperation with HydroSource Associates, Inc. (HSA) of Meredith, New Hampshire to complete the testing efforts.

The two wells are both reportedly eight inches in diameter (casing and bedrock borehole), and are each roughly 200 feet in depth. They are located on the same site, about 40 feet apart. The airlift yield of each well when originally drilled in 1999 was roughly 200 GPM. The shallowest major water-bearing fracture in each well is reported to be at a depth of about 100 feet.

The wells currently provide water to the Unionville system. They are both outfitted with submersible pumps that are not appropriately sized for performing a test of up to 100 GPM. Thus, the pumps will need to be temporarily removed, and suitable alternative temporary pumps and the necessary discharge assembly and appurtenances provided and installed for the step and constant rate testing. After the testing is complete, the selected contractor will be required to remove the temporary pumping equipment and re-install the existing pumps, disinfect the wells in compliance with NYSDOH standards, and pumping system as needed, and place the wells back into operation.

Any existing damage or deficiencies observed in the existing pumping equipment by the Contractor is to be promptly reported to HSA and the Town's representatives. Contractor will repair or replace such equipment at the Town's request at the appropriate additional cost.

## Scope of Services

Testing protocols are assumed to be generally as follows:

1. Each well is to be subjected to a separate, four- to eight-hour long step test, followed by full recovery. The step test results will be used by HSA to determine an appropriate target pumping rate for a subsequent 72-hour constant rate test that is to be performed shortly thereafter.
2. Each well will undergo a separate, 72-hour constant rate test that is to be started on a Monday morning, lasting until Thursday morning. Each 72-hour pumping period will be followed by a one- to three-day recovery period.
3. Contractor is to provide and install/remove a suitable temporary submersible test pump, drop pipe, conduit, gate valve, flow meter, minimum 300-foot length of discharge line, sampling tap, and water level monitoring tube. Butterfly valves will not be used.
4. A generator to power the pump will not be needed as three-phase power is available at the site. The Contractor will be responsible for properly connecting their pumping equipment to the on-site power supply.
5. The discharge assembly is to include an appropriately-sized orifice weir or calibrated flow meter, as well as a method whereby independent bucket-and-stopwatch measurements of pumping rate can be made.
6. Temporary pumps and discharge assemblies supplied by the Contractor for the testing should be capable of producing from 50 GPM to up to 125 GPM at 80 feet of Total Dynamic Head (TDH). Temporary pumps for the testing are to be set at approximately 100 feet in depth in each well.
7. The test pump is to be outfitted with a check valve and should not be removed from the well for at least 24 hours after the end of the 72-hour pumping test.
8. A  $\frac{3}{4}$ -inch ID water level monitoring tube is to be installed to the depth of the pump for pumping tests. Once installed, the water level monitoring tube must be free of any obstructions or kinks over its entire length.
9. Water level monitoring during the step test and day shifts of the constant rate test will be provided by HSA personnel. The Contractor will be required to provide appropriately qualified and capable personnel for at least a 12-hour night shift for each day of the

constant rate pumping test. This person will be required to maintain the constant pumping rate in the pumping well, record observations of the pumping rate, and collect water level measurements in the pumping well and nearby monitoring wells.

### **Well Testing Regimen**

Please note that the District has no water source other than these wells. Before each test, the District will need to fill its storage facilities to their full capacity, and for the remainder of each testing period the Town will need to truck water to supply its system. Thus, it will be important to try to minimize the total time the wells are offline. Following is a general description of a testing plan designed to accomplish this to the degree feasible.

Testing of the two wells will be done separately, with testing of one well done first, followed by a recovery/rest period, followed by testing of the second well. For convenience we have proposed the sequence of events based on the following days of the week due to existing operating conditions. Exact dates are to be determined, but are anticipated to be requested in July or August.

#### **Week 1**

**Wednesday** – The Town will fill its storage tank, both wells would be taken off-line and the aquifer allowed to recover prior to beginning any pumping tests. The Town would begin trucking water to temporarily supply the system, as needed.

**Thursday** – The contractor would remove the existing pumps from both wells (Well TW-1 and Well TW-2), install a temporary test pump in TW-2, and assemble the wellhead setup necessary to support the pumping test. The pump will be set at a depth of about 100 feet, slightly above the shallowest significant water-bearing fractures. The test pump will be capable of pumping water at a rate of up to 125 gpm with 100 feet of total dynamic head. The wellhead setup will include two plastic monitoring tubes, a gate valve, a properly installed orifice weir for accurate measurement of flow rate, and a sample tap. The drill contractor will be responsible for connecting the pump to the on-site power source.

The pumping discharge will be directed through an orifice weir in order to monitor and maintain a constant discharge rate. The orifice weir will be set up at a point several hundred feet from the well, with the discharge directed into a ditch, stormwater drainage, or surface water drainage. The location of the discharge point will be identified by the Town.

**Friday** - Carry out the step test of Well TW-2. We tentatively expect that the test will consist of four to six rate steps, each one hour long, with a rate step sequence that might range from 50 gpm to 125 gpm in 25-gpm increments. Water levels will be measured in both TW-1 and TW-2.

Standard procedures for regulatory pumping tests in New York State call for the constant rate test to be preceded by a seven-day ambient conditions monitoring period. In this case, we will

propose that the agencies accept an abbreviated ambient conditions period before the TW-2 constant rate test, during the period between the end of the step test on Friday and the beginning of the 72-hour test on Monday. The purpose of shortening the period is to reduce the time when the wells have to be offline. Aquifer recovery and then the ambient conditions monitoring in Well TW-2 will begin with the end of the TW-2 step test. We anticipate that this departure from normal procedure should be acceptable to the agencies given the system's reliance on these wells as their sole water source.

### **Week 2**

**Monday** - Begin the 72-hour constant rate test of Well TW-2. The test will be scheduled to start on a Monday morning. Water samples for lab analysis must be collected near the end of the pumping period, and a Monday-morning start makes it feasible to collect the samples on the following Thursday morning so that the lab has them in time to take necessary steps on short-holding time parameters before the weekend.

The rate adopted for the constant rate test will be determined based on analysis of the step test data. Water levels will be measured in Wells TW-1 and TW-2 by the contractor on an hourly basis until the end of the pumping period.

Over the course of the three-day pumping period, HSA personnel will be on the site during a 12-hour shift of each day of the constant rate test, making measurements and maintaining the targeted constant pumping rate. The contractor will provide coverage for the 12-hour night shifts.

**Thursday** - HSA personnel will collect water samples for NYSDOH-mandated Part 5 analysis shortly before the end of the pumping period. The pump will be shut off at the end of 72 hours. HSA will record recovery water level measurements.

**Friday** - The contractor will remove the test pump from Well TW-2, disinfect both wells, reinstall the original pump in Well TW-2, and reconnect Well TW-2 to the system. The drill contractor will install two water level monitoring tubes in Well TW-2 when they reinstall the original pump. Water service to the system from Well TW-2 will be restarted on the following Monday after 72 hours of recovery is concluded.

### **Week 5**

**Thursday** – The Town would shut Well TW-2 down and begin trucking water again, continuing to do so until the testing on Well TW-1 is concluded. The aquifer would be allowed to recover so that an acceptable test can be conducted on Well TW-1. The contractor will install the test pump and a monitoring tube in Well TW-1, using the same depth setting and essentially the same wellhead setup that was used in the TW-2 test. The same discharge point will be used.

**Friday** – Perform a step test on Well TW-1 similar to that performed on Well TW-2.

**Week 6**

**Tuesday** - Begin the constant rate test of Well TW-1. Again, procedures used for this test are expected to be similar to those used for Well TW-2.

**Thursday** – HSA will collect water samples near the end of the test. The contractor will stop the pump at the end of 72 hours. HSA will make recovery measurements.

**Friday** - The contractor will remove the test pump from Well TW-1, re-install the original pump, disinfect both wells, and reconnect them to the system.

10. All data, measurements and pumping test results will be provided to HSA's representative promptly upon completion of each test that is performed.
11. HSA will be responsible for all recovery monitoring, for any water sample collection and analysis, and evaluation of the pumping test results.

**Required Quotation Submittal Items**

1. **Schedule** Commitment of availability to meet general schedule/duration identified above with an anticipated start date in late July through August 2021.

**2. Cost**

Activity	Unit	Unit Cost
Mobilization/Set-Up/Demobilization: Includes removal and reinstallation of existing pumping equipment, disinfection and placing original pumping system back into full operation	Each well	\$ _____ per each of two wells
Step Pumping Test – includes provision and installation of all temporary equipment necessary for up to 8-hour test, refueling and maintenance of generator and pump	Each well	\$ _____ per each of two wells
Constant Rate Test Including Monitoring (assume 12-hour night shift per day of constant rate pumping test, includes well water level monitoring, pumping rate monitoring and maintenance, etc.) - includes provision and installation/removal of all equipment necessary, refueling and maintenance of generator and pump	Each Well	\$ _____ per each of two wells
Other Additional Recommended Services	Each Well	\$ _____ per each of two wells

**Total Per Each of Two Wells = \$ \_\_\_\_\_**

**TOTAL COST = \$ \_\_\_\_\_**

