

5.48 Teslin - Health Centre Water Supply System

Village of Teslin is located at km 1244 on the Alaska Highway in Yukon. The Teslin Health Centre water system is served by a groundwater well located in a pit approximately 4 m from the Health Centre. The Teslin Health Centre water supply system supplies potable water to the Health Centre and is governed under the Sections 12.1 (a) and (b) and 17 of the Public Health and Safety Act and Section 5 of the Public Health Regulations (C.O. 1958/079, O.I.C. 2009/194), which require safety measures and inspection for water and water sources for systems that provide for human consumption.

5.48.1 Data Compilation Methodology

Tetra Tech approached stakeholders including water system operators and owners to let them know the project was in progress and to request their assistance in compiling the most complete data set possible. Through the process of compiling the data, Tetra Tech has had communication with YG PMD regarding all water systems they operate and/or maintain. YG PMD has provided review comments and data for the compilation.

5.48.2 Hydrogeology

The Teslin Health Centre site is located near the southeast corner of a small peninsula extending into Teslin Lake. In general, two primary aquifers, a shallow unconfined and a deep confined aquifer, have been identified by Tetra Tech through studies in the Teslin area. Based on topography and proximity to surface water, the groundwater flow direction in the vicinity of the Teslin Health Centre well is inferred to be east to south.

5.48.3 Well Summary

No well log was available for the Teslin Health Centre well. The following table summarizes available data for the water well.

Table 5-123: Teslin Health Centre, Well 4951 Summary		
Well Construction Parameters	Details	Source
Date of construction	1999	Tetra Tech 2006 p.c. Nick Barnett 2017
Total well depth	32 m bgs	
Casing	6" (152 mm) ID Steel Casing	
Casing depth	Unknown	
Well screen	Unknown	
Static water level	Unknown	
Sanitary seal	Likely no surface seal	
Wellhead completion	Locked pit, split gasket cap	
Wellhead stickup	0.75 m bgs	
Well rated capacity	Unknown	
Well GUDI status	Potentially GUDI	Based on well construction

Table 5-123: Teslin Health Centre, Well 4951 Summary

Well Construction Parameters	Details	Source
Well Construction Comments:	Based on the wellhead completion and the lack of a surface seal, the well was not constructed to meet the Canadian Groundwater Association Well Construction Guidelines.	

5.48.4 Source Water Quality

As part of the SPDWSA review conducted in 2005, Tetra Tech reviewed available groundwater chemistry data and collected an additional sample to test for identified parameters of concern. The observations made in 2005 are summarized below:

- The TDS concentration in the sample collected by YG was measured at 865 mg/L which exceeds the GCDWQ AO of 500 mg/L;
- The total arsenic concentration in the two sample results was 0.0083 mg/L and 0.007 mg/L, which are slightly below the current GCDWQ MAC of 0.01 mg/L;
- The pH, measured between 8.51 in sample results and 8.57 in the field, is above the GCDWQ AO upper threshold value of 8.5 for pH;
- All other parameters measured were below applicable GCDWQ health-based criteria and aesthetic objectives at the time of sampling; and
- A review of indicators for potential contamination shows no elevated concentrations of any of the parameters analyzed.

5.48.5 Water Treatment and Distribution

Table 5-124: Teslin Health Centre Water Treatment and Distribution Details

Item	Details	Source
Owner/Operator	Government of Yukon	Tetra Tech 2006 p.c. Nick Barnett 2017
Water source	Groundwater	
Wells serving the system	Teslin Health Centre well	
Treatment type	Sand filter and water softener	
Water Users	YG employees and patients	
Delivery method	Connected directly to Health Centre	
Age of system/last known update	Unknown	

5.48.6 Source Water Protection Planning

There is no SWPP in place for the Teslin Health Centre Well 4951. Given the unknown aquifer and well characteristics and the fact that the water supplies the Health Centre, source water protection planning here may be warranted. An integrated SWPP that includes the Teslin School and Village of Teslin water supply wells would provide a comprehensive approach to protecting the groundwater resource in Teslin.

Potential sources of contamination in the vicinity of the wellhead were identified as part of the 2005 SPDWSA site review. The potential contaminant sources included:

- The community sewer main located approximately 30 m from the well;
- Two ASTs located approximately 5 m and 9 m from the well; and
- Four raw sewage spills had occurred at the lift station 2 on Jackson Avenue, which is located approximately 200 m from the well. However, it is unlikely these spills impacted the well.

5.48.7 Water Supply Information Data Gaps

Tetra Tech has obtained review comments from YG PMD regarding the current status of this system and to our knowledge this summary is complete and accurate to March 2017. The following data gaps have been identified:

- Several upgrades on the water system including installation of a disinfection system, were recommended by Tetra Tech in 2006; however, it is our understanding that no updates have been completed to the system since 2006; and
- There is no source water protection planning for this groundwater resource. Source water protection planning here could be incorporated into a Village of Teslin SWPP and provide comprehensive planning to protect the shallow and deep groundwater aquifers identified at this well location. The well depth, lithology, GUDI status and other details are unknown, effort spent to track down the well log would be merited.