

## 5.39 Pelly Crossing - Health Centre Water Supply System

Pelly Crossing, Yukon is where the North Klondike Highway crosses the Pelly River and is located about midway between Dawson and Whitehorse. The Pelly Crossing Health Centre is now connected to the SFN water system and the summary included here is for information purposes only.

### 5.39.1 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 review comments and data for the compilation.

### 5.39.2 Hydrogeology

The Pelly Crossing Health Centre Well is completed at a depth of 12.7 m bgs in a sand and gravel aquifer. The static water level at the time of drilling was 6.7 m bgs. Most wells in Pelly Crossing obtain water from an unconfined aquifer consisting of floodplain alluvial sand and gravel deposits. Lithology recorded during drilling of the Pelly Crossing Health Centre well indicated alternating sand and gravel units overlying the aquifer with very little fine-grained material documented. The lithology encountered during drilling is consistent with other wells drilled in the area, and this well is likely completed in the same unconfined aquifer. The shallow well completion, high water table and absence of fine-grained material to act as a confining layer, leave this aquifer vulnerable to surface sources of contamination. The groundwater flow direction in the vicinity of the Pelly Crossing Health Centre Well is north to northwesterly (Tetra Tech 2004).

### 5.39.3 Well Summary

The log for the Pelly Crossing Health Centre Well 5987 is included in the GIS map and database portion of this project. The following table summarizes available data for the water well.

Table 5-101: Pelly Crossing Health Centre Well 5987 Summary		
Well Construction Parameters	Details	Source
Date of construction	Well was completed by Midnight Sun Drilling Co. Ltd. in June 1977	Well Log
Total well depth	12.7 m bgs	
Casing	6" (152 mm) ID Steel Casing	
Casing depth	11.3 m bgs	
Well screen	1.4 m 15 slot (0.38 mm) well screen from 11.3 m to 12.7 m bgs	
Static water level	7.8 m bgs (November 20, 1999)	Tetra Tech 2006
Sanitary seal	No surface seal	
Wellhead completion	Split gasket cap, well pit	
Wellhead stickup	0.66 m bgs	

Table 5-101: Pelly Crossing Health Centre Well 5987 Summary		
Well Construction Parameters	Details	Source
Well rated capacity	0.32 L/s (4.2 IGPM) (estimated by the driller)	Well Log
Well GUDI status	Potentially GUDI	Based on well construction
Well Construction Comments:	Well was likely not constructed to meet the Canadian Groundwater Association Well Construction Guidelines.	

### 5.39.4 Source Water Quality

As part of the SPDWSA assessment 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 groundwater source is calcium-bicarbonate type water with a pH of about 8.1;
- The water is considered very hard with a measured hardness of about 195 mg/L (as CaCO<sub>3</sub>);
- The water quality met all GCDWQ health-based and aesthetic objectives for the parameters tested;
- Additional testing for BTEX, VPH, EPH and PAH was conducted due to records of a fuel spill in the vicinity of the wellhead. Review of these results did not indicate any evidence of impacts from fuel spills on groundwater quality for the parameters analysed; and
- Review of chloride, nitrate and nitrite results showed concentrations of all three parameters to be low and within the normal background ranges, suggesting that the aquifer was not under the influence of anthropogenic surface sources of nutrients or anions such as septic wastes at the time of sampling.

### 5.39.5 Water Treatment and Distribution

Table 5-102: Pelly Crossing 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	Pelly Crossing Health Centre Well	
Treatment type	None	
Water users	Not in use**	
Delivery method	Not in use**	
Age of system/last known update	Unknown	

\*\*Note: The health centre now has a connection to the SFN water treatment system, and the water well has been decommissioned (p.c. Michael Fraser 2017)

### **5.39.6 Source Water Protection Planning**

There is no source water protection planning in place for the Pelly Crossing Health Centre Well 5987 and Tetra Tech was not able to obtain any record of a GUDI assessment for this well however, as this system is no longer in use, SWPP or GUDI assessment here would not be warranted.

### **5.39.7 Water Supply Information Data Gaps**

YG PMD has reviewed this summary and provided comments. To our knowledge, this system is accurate and up to date as of March 2017. Tetra Tech has not identified any data gaps.