

MEMORANDUM

Date: November 14, 2011
To: Water Right File 29-13155 and 29-13784
From: medl
Re: system clarification

November 3, 2011

Joyce Terry returned my phone call this afternoon. We spoke at some length. She was responding to my call requesting clarification of the distribution system for this water right.

Two different springs have been developed but she was unsure how they were connected. There is a length of alternative piping still in place so it is possible that the hydro has a dedicated pipe not common to the domestic spigots. She believes that both 29-13155 (power) and 29-13784 (domestic) share a single pipe now. She explained that she was not as familiar with the system as her brother-in-law is.

I told her that both she and her sister would be receiving documents from the Department which needed action from them before we could proceed. I explained the reason why an amendment of the permit was necessary and why I will be putting a combined use condition on the license. I described how she could correct my understanding of the system, by editing the last condition on the amendment document before returning it to me.

In our conversation, she mentioned batteries being charged by the hydro and I realized that this was a battery-inverter system, not the real-time use I had envisioned. I shared that I did not have any photos of the system and would welcome some of hers.

I learned that the hydro is packed away in the fall and put into storage at 'the farm'. She said she was headed that direction for the weekend and would take photos of the hydro in storage if she did not find them easily in family albums.

November 4, 2011

I spoke at some length on the phone with the other Tovey sister, Raida Jensen and with her husband Richard Jensen.

I learned that Richard Jensen was responsible for installing the hydro. Because of this he understands the system and is able to explain the diversion and distribution in more detail than either his wife or his sister-in-law.

He was present when Keith Wilson took the measurements for the power use in 2006. We discussed those measurements and he agreed that it was not correct to sum them for the rate. There are four nozzles on the Harris hydroturbine but only 3 control valves. One nozzle is not controlled and always discharging. By closing two of the 3 valves, the examiner had isolated two pairs of the four nozzles with each measurement. Therefore each measurement was a sum of the discharge from the uncontrolled nozzle and one other nozzle.

Richard Jensen believes that all 4 nozzles were probably 1/4 inch in size. And he volunteered to provide a nozzle chart showing the capacity. I have one and I dissuaded him from that extra search. 2 - 1/4 inch nozzles can pass the same flow of water as 4 - 1/4 inch nozzles. The flowrate would not change but the velocity of water through the nozzles would be different.

He stated that the penstock is 4 inch pipe and the system typically operates at a 42 psi. This is different from the pressure measurement recorded at the time of the exam and may represent static not dynamic pressure.

Both spring sources are developed but one spring is much more productive than the other. Perforated pipe serves to collect the spring water and those pipe diversions are joined to a common distribution pipe. He stated that the 'East' spring provided 350 gpm while the 'West' spring provided only 5 gpm. The

combined uses on the system do not exhaust the total flow available from the springs. Overflow from both springs enters Harkness Creek very near to the diversions.

The second pipe that Joyce Terry mentioned was DeVere Tovey's plan B for inspection purposes. It is the pipe that he would say conveyed the domestic water. It is not an IDWR requirement to provide separate service for the domestic water. The examiner found single shared system I have described above.

The campground has 6 spigots and the domestic use is upstream of the hydro. A combined use condition is appropriate. Richard Jensen has photos of the system and is willing to provide copies for the file.

I asked for address confirmation for both parties. I explained that I had sent correspondence to Raida Jensen and Joyce Terry that must be signed and I explained why it was needed. I also explained that the hydro would be licensed in DeVere Tovey's name and that I had not yet devoted much time to the domestic permit. Although on the same system, the domestic right can be brought to license status without an amendment.

I am expecting supplemental information from the Jensens in addition to the signed amendment and have scheduled a meeting next week here in the state office. We plan to discuss their water rights with the perspective of dividing ownership between Terry Joyce and Raida Jensen.