

## Nelson, Dan

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**From:** Scott King <SKing@spfwater.com>  
**Sent:** Wednesday, October 11, 2017 8:29 AM  
**To:** Nelson, Dan  
**Subject:** RE: Whitetail Weirs Installation

Thank you, Dan, for the compliment on the weirs. I'll pass this along to Terry.

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**From:** Nelson, Dan [mailto:Dan.Nelson@idwr.idaho.gov]  
**Sent:** Wednesday, October 11, 2017 7:12 AM  
**To:** Scott King <SKing@spfwater.com>  
**Subject:** RE: Whitetail Weirs Installation

Hello Scott,

I have reviewed the photos and the maps you supplied, and I believe it will be suitable to measure the ground water being used for Whitetail Pond. I will make sure these get into the files. Please let Terry know that I am still waiting on Shelley to review the files. I have told Shelley that I would like to forward the amendments as soon as possible, so hopefully, we will be able to finish these up soon.

Thank you for keeping me informed and nice work on the weirs.

Daniel Nelson  
Water Right Analyst 3  
Idaho Department of Water Resources  
Telephone (208) 287-4856  
Fax (208) 287-6700 (attn: Dan Nelson)

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**From:** Scott King [mailto:SKing@spfwater.com]  
**Sent:** Tuesday, October 10, 2017 4:31 PM  
**To:** Nelson, Dan <Dan.Nelson@idwr.idaho.gov>  
**Subject:** FW: Whitetail Weirs Installation

Part 1 of 3.

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**From:** Scott King  
**Sent:** Tuesday, October 10, 2017 4:26 PM  
**To:** Dan Nelson (Dan.Nelson@idwr.idaho.gov) <Dan.Nelson@idwr.idaho.gov>  
**Cc:** Terry Scanlan <TScanlan@spfwater.com>; Rick Mooney <rmooney@shorelodge.com>  
**Subject:** Whitetail Weirs Installation

Hello Dan,

We were able to install weirs and a headgate at Whitetail last Thursday, October 5.

A headgate was installed just downstream of the Williams Creek diversion on the "Manmade Channel" on the attached map. Whitetail staff are going to place additional soil on top of and adjacent to the discharge pipe to prevent flow from overtopping the gate during higher flows. I've asked for photos to forward to you once this work is done. The gate is lockable as I drilled a hole in the frame for a lock to be placed, preventing the gate from being opened if needed.

An 18-inch Cipoletti weir was placed in the Annie Lake Outlet (ALO) channel and both upstream (us) and downstream (ds) photos are attached. The weir crest was placed approximately 0.2 to 0.3 ft above the channel's high water mark so the weir should be free-flowing at anticipated normal high flows. The design flow is 1.5 cfs (0.45 ft above the weir crest) and the weir has a capacity of about 3.3 cfs before overtopping (0.75 ft total depth above the crest). If flows are high enough to overtop the banks, additional soil may need to be placed at the weir and along the upstream channel banks. The photos may appear to indicate flow under the weir plate as the water levels are about the same both upstream and downstream of the weir. This is because there was very little flow in the channel and this was mostly standing water. The plate was embedded into the channel bed and bank by at least six inches.

Another 18-inch Cipoletti weir was placed in the "Manmade Channel" aka Williams Creek Diversion (WCD) downstream of the headgate described above and both upstream (us) and downstream (ds) photos are attached. As with the Annie Lake Outlet weir, the crest was placed about 0.2 to 0.3 ft above the high water mark and this weir has the same dimensions. There was a little flow in this stream so the upstream water level was rising when these photos were taken.

A 90-degree V-notch weir was placed in the Unnamed Stream upstream of where the stream discharges into the Manmade Channel. This weir has a depth of 0.75 ft so should have an operational capacity of over 1 cfs. Design flow is 0.25 to 0.5 cfs.

I hope this satisfies the permit requirements.

Thank you,  
Scott

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**Scott N. King, P.E. | Supervising Engineer**

SPF Water Engineering, LLC

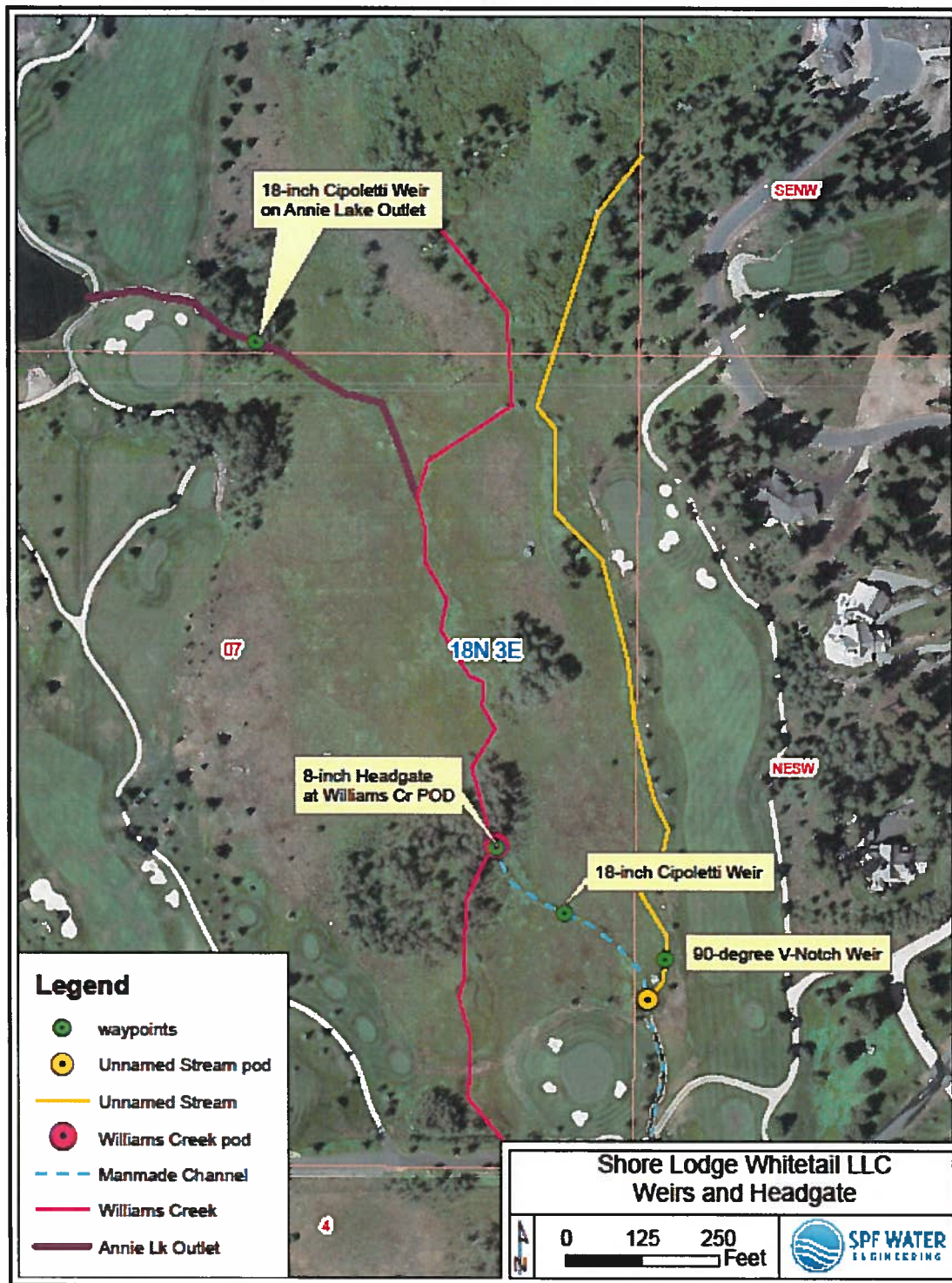
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Scott King Photos for Whitetail Permits: 65-13640, 65-13740, 65-13751, and 65-22911



Scott King Photos for Whitetail Permits: 65-13640, 65-13740, 65-13751, and 65-22911 (continued)



ALO Weir Down  
Stream



ALO Weir Up  
Stream



Headgate

Scott King Photos for Whitetail Permits: 65-13640, 65-13740, 65-13751, and 65-22911 (continued)



Headgate



V-Notch Weir  
Down Stream



V-Notch Weir Up  
Stream

Scott King Photos for Whitetail Permits: 65-13640, 65-13740, 65-13751, and 65-22911 (continued)



WCD Weir Down  
Stream



WCD Weir Up  
Stream