From: Ed Castle <edrcastle@me.com>

To: <u>Greg Wrightgreg@kwru.com</u>
CC: <u>Chris Johnsonchris@kwru.com</u>

Steve Suggsssuggs@weilerengineering.org

Date: 3/14/2018 3:05:03 PM

Subject: Re: 17-160 - KWRU WWTP Filter Replacement - Holiday Testing

Yes, CROM would test the entire tank. They would report on holiday testing, DFT and quality of the coating job.

No, I am not suggesting that forgoing the CROM testing is the best idea. But it is a change order. I am suggesting that if KWRU wants to avoid the change order, we will likely still pick up on defective coatings if we test onsite after delivery. But if we find that the coatings have holidays, that would cause delays (which would be on Wharton Smith for defective coatings). And we would not be able to test the bottom. But if everything else passes, it is likely that the bottom would pass too.

The best idea would be for the testing to be done, and then we just check for shipping damage. Also keep in mind that there would be a cost for WEC time for performing the testing, so that would offset the change order cost.

As an alternative to a change order, you can consider running the testing through WEC. We would do it as a pass-through cost without markup. I have not asked Wharton Smith if they would be willing to do it that way. Just a thought.

Also note that Wharton Smith did not apply markup or James's time for putting the CO together.

Edward R. Castle, PE Weiler Engineering Corporation

On Mar 14, 2018, at 2:36 PM, Greg Wright < greg@kwru.com > wrote:

Ed,

CROM would be testing the entire tank including the bottom, correct? If so, then all we have to check for onsite is the shipping damage (besides the bottom)?

To clarify, you are suggesting forgoing the CROM testing and do it all on site (besides the bottom)?

-Greg

From: Ed Castle [mailto:edrcastle@me.com]
Sent: Wednesday, March 14, 2018 1:41 PM

To: Greg Wright <greg@kwru.com>; Chris Johnson <chris@kwru.com>

Cc: Steve Suggs < ssuggs@weilerengineering.org>

Subject: Fwd: 17-160 - KWRU WWTP Filter Replacement - Holiday Testing

Chris and Greg,

I think holiday testing is a very good idea. We intend to do some when the filters are delivered, looking for shipping damage that can be touched up. Field testing the whole thing is not practical. Testing the bottom would be tough. I can't have a guy working underneath while the filter is hanging from a crane.

If the coating is not good, we would probably pick up holidays all over, and could assume that the bottom coating was also bad. But getting the whole thing re-coated would cause a significant delay. Touch-up of damage from shipping could be done onsite.

Anyway, it is your call if you want to do a change to get the holiday testing done prior to shipping. If you choose not to, we can test everything but the bottom onsite. If it tests good, we can be pretty confident that the bottom is good as well.

Let me know how you want to proceed.

Edward R. Castle, PE Weiler Engineering Corporation

Begin forwarded message:

From: James Contino < jcontino@whartonsmith.com>

Subject: 17-160 - KWRU WWTP Filter Replacement - Holiday Testing

Date: March 14, 2018 at 10:26:58 AM EDT

To: "ssuggs@weilerengineering.org" <ssuggs@weilerengineering.org> **Cc:** "Ed Castle, P.E. (edrcastle@me.com)" <edrcastle@me.com>, Edgar

Gonzalez <egonzalez@whartonsmith.com>, Erica Marnati

<emarnati@whartonsmith.com>, Jean Laine <jlaine@whartonsmith.com>

Steve,

Attached please find the following with regards to the above subject:

COP No. 02 – Low Voltage Holiday Testing

Let me know if you have any questions.

Sincerely,

James M. Contino | Project Manager

Wharton-Smith, Inc. | Construction Group of Choice | www.whartonsmith.com

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