

Technical Expert Working Group Conference Call

Friday March 24, 2006
10:00 a.m. – 11:30 a.m.

DRAFT CALL SUMMARY

Attendees:

EPA and contractors: Rick Rogers, Jeff Kempic, Jennie Saxe, Steve Reiber, Laura Dufresne, Stephanie Jones

The Aqueduct and contractors: Miranda Brown, Patricia Gamby, Elizabeth Turner, Thomas Jacobus, Lloyd Stowe

DCWASA and contractors: Rich Giani, Maureen Donnelly, and John Civardi,
CDC: Barry Brooks

The meeting was led by Rick Rogers

Agenda

There were no changes or additions to the agenda. The meeting agenda is enclosed below as Attachment A.

Summary of Discussions by Topic Area

I. WA Pipe Loop Study

Elizabeth Turner presented the most recent results of the Aqueduct pipe loop studies. Charts showing the results, along with a summary memo, were distributed to TEWG members before the call. Elizabeth reiterated the following findings, as summarized in the memo:

- The pipe loop conditioning phase began on January 7, 2005. During this phase, the pipe loops were exposed to Washington Aqueduct finished water.
- On March 7, 2005 the pipe loops were put in automatic mode and were fed chemically-conditioned water, according to the Pipe Loop Plan.
- On September 5th, 2005 in Rack 3 we switched from chloramines to free chlorine. And on November 4th, we switched from free chlorine to chloramines. To date, we have not seen a significant increase in lead release since we switched back to chloramines.
- On September 12th, 2005 we lowered the phosphate concentration in Rack 2 from a target of 3 mg/L to a target of 2 mg/L. And on November 14th, we switched from a target phosphate concentration of 2 mg/L to 1 mg/L. To date, we have not seen a significant increase in lead due to the decreased phosphate dose.
- The PO₄ dose to the finished water was decreased from 3 mg/L to 2.4 mg/L at the end of January 2006.

- Operation of Racks 1 (Zinc Orthophosphate), 4 (no orthophosphate inhibitor) and 5 (low chloramines dose) was discontinued because we felt that the data we had was sufficient to draw conclusions. Sampling for these Racks was discontinued on February 3rd. Charts for these racks will not be included with the Monthly Report.
- The Racks that are remaining (Racks 2, 3, 6 & 7) will be operated until June 2006. Rack 7 (finished water) will likely be operated longer. The phosphate dose in Racks 2 and 6 is currently 1 mg/L (Rack 6 was lowered to 1 mg/L in mid-February). Rack 3 has 3 mg/L phosphate. In the spring, we will run a chlorine burn event in Racks 2 and 3 to see if temperature affects lead release during a chlorine burn. Rack 6 will be used as a control to compare to Rack 2.
- High lead values in Rack 2 during the first part of March are due to high pH values. pH results were above 9 resulting in little or no corrosion control.
- Rack 3 lead values appear to be increasing; however the results vary between 2 and 4 ppb. This is not significant and within the error of the quantification method.
- Rack 6 lead results indicate a swing between 4 and 8 ppb. This can not be accounted for by quantification methodologies. During this period, there were days when the PO₄ levels were below 1 mg/L and this may account for the swing in lead levels. No conclusions should be drawn until more lead data can be obtained when PO₄ levels are stable.

WA has also observed a slight increase in total lead for Rack 7 when the orthophosphate dose was reduced from 3.5 mg/L to 2.4 mg/L. This could have been caused by a slight warming trend. More data are needed before making any conclusions.

II. DCWASA Pipe Loops

Rich Giani described the progress of DCWASA's pipe loop studies, noting that loops 1, 3, and 5 experienced an overall increase in lead levels after orthophosphate dosages were reduced. He noted, however, that this slight increase in all loops could be related to an overall warming trend. Pipe loop 1, the control loop, is currently hovering around 10 ppb. DCWASA increased the orthophosphate dose for pipe loop 3. The lead levels in this loop have stopped increasing but have not yet begun decreasing.

DCWASA reduced the stannous chloride dose to between 0.2 and 0.3 mg/L. Still, lead has steadily increased since the addition of stannous chloride, which may be due to the initial dosage being too high. Mike Schock wants to perform X-ray diffraction on the loops to further investigate this.

Steve Reiber asked if any tests were performed where orthophosphate dose was eliminated completely. Rich Giani replied that this was not possible because of the orthophosphate concentration in the finished water used in the DCWASA pipe loops. However, it was suggested that WA investigate this. The purpose of this experiment would be to document how radically the loops respond to a shutoff of inhibitor feed. Also, this experiment would provide information on the nature of the response and provide a basis for comparing the magnitude of lead increase caused by small changes in orthophosphate dose. Dr. Reiber suggested that the experiment be conducted for several weeks to one month.

Rick Rogers asked the group for thoughts on how the orthophosphate treatment could be tweaked to achieve further reduction in lead levels. One suggestion was to investigate stannous chloride. It was also suggested that the TEWG seek suggestions at various organizational meetings. TOC reduction was mentioned as a possible avenue for exploration. Rick stated that a final report would be available in April considering the influence of NOM on corrosion.

III. New Monitoring Results (DCWASA, WA)

Rich Giani stated that since the reduction in orthophosphate dose, complaints of cloudy water have generally decreased.

Rich explained that DCWASA is no longer required to conduct supplemental monitoring, although they still monitoring water quality throughout the system. DCWASA is conducting approximately one lead profile per month.

IV. TEWG Article for AWWA

Rick Rogers discussed the possibility for the TEWG publishing an AWWA article on the D.C. corrosion control experience, noting that the article would report on treatment changes and summarize the results of recent research. Rick noted that, while an abstract was submitted for the AWWA annual conference, the group had not heard back yet on whether the abstract was accepted.

Laura Dufresne suggested that the AWWA article provide background of the issue and describe the status of the lead treatment, generally leaving open the question of how D.C. could further minimize lead levels. The paper could conclude with the acknowledgement that research is ongoing. John Civardi noted that the only current article on the D.C. lead issue was published in October 2004 and contains inaccuracies. A new article and its findings would help clarify the cause of the elevated lead levels and steps taken to reduce lead leaching in a very short time frame.

It was explained that Cadmus could prepare a first draft of the article under an EPA Region 3 contract, but authorship would ultimately fall to someone from each organization involved in D.C.'s OCCT. Tom Jacobus said that he would discuss authorship with WA staff and report back to the group.

V. WQP/OCCT Designation

Rick Rogers reported that EPA Region 3 is working with WA and WASA to develop the final WQP monitoring and OCCT designation. In terms of orthophosphate, there was discussion on whether EPA would designate OCCT for orthophosphate as total or the dissolved fraction. EPA is considering designating OCCT for dissolved orthophosphate because DCWASA reported a difference between the total and dissolved fraction, particularly when the water exhibited high color. Elizabeth Turner reported that WA's on-line analyzers can only measure total orthophosphate, so a requirement to report dissolved orthophosphate would be problematic for them.

The group also discussed whether the OCCT for orthophosphate would be set as a minimum or a range. Rick Rogers noted that setting a range might be problematic for total orthophosphate given occasional high levels. A minimum value might work better if total orthophosphate is used for establishing OCCT.

The attendees also discussed the WQP requirements for pH. EPA is considering 7.7 +/- 3, but Rich Giani reported that DCWASA would not be able to meet this requirement on a consistent basis. Rich stated that, for one lead profile, pH remained constantly at 7.2, probably attributable to internal plumbing. The total and dissolved lead for this profile were still very low. He also noted that on some days DCWASA experiences pH levels of 7.3 in many areas. The group discussed the importance of maintaining a stable pH for orthophosphate treatment and also the impacts of pH on TTHM formation.

VI. Perchlorate

Rick Rogers noted that a perchlorate roundtable was scheduled to discuss the Spring Valley site and will be attended by Jennie Saxe. He stated that EPA would move ahead with sampling the Potomac River for perchlorate, likely in the summer when the river levels are lower. Elizabeth Turner reported that WA observes occasional, low (1-2 ppb) levels of perchlorate, but it has not observed anything alarming in its finished water.

EPA plans to make a determination on whether or not to regulate perchlorate later this year. The State of Massachusetts has proposed a 2 ppb public health goal for perchlorate, while California is aiming at 6 ppb.

VII. Future TEWG Calls

Rick Rogers initiated a discussion about future TEWG calls, which are currently scheduled through July of 2006. Rick stated that in his opinion, the calls are a good opportunity to pull all stakeholders together and discuss water quality issues in general. He would like the group to consider changing the purpose of the call to water quality issues in general (not just the lead issue), and possibly change the name to something like "National Capital Area Water Quality Conference Call." He requested input from the group on call frequency (could be less than monthly). Rick also asked for input from the group on call leadership (does not need to be EPA).

Attachment A
Proposed Agenda from EPA Region 3
TEWG Meeting
March 24, 2006

- I. Washington Aqueduct Pipe Loop study - status (Aqueduct, CH2M Hill)
- II. DCWASA pipe loop study
- III. Any new monitoring results to discuss - (DCWASA, Washington Aqueduct)
- IV. Possible TEWG article for JAWWA (EPA, Cadmus)
- V. Final WQP/OCCT designation forthcoming (EPA)
- VI. Perchlorate, roundtable, R3 planned sampling effort (EPA, Aqueduct)
- VII Future calls - format, purpose, leadership (EPA, all)