

MEMORANDUM

To: Erika Mancha, P.E., Innovative Water Technologies, Texas Water Development Board (TWDB)

FROM: Eva Steinle-Darling, Carollo Engineers

SUBJECT: **Progress Report No. 3**
Testing Water Quality in a Municipal Wastewater Effluent Treated to Drinking Water Standards Quarterly Report

DATE: August 2014

CONTRACT: 1348321632

Recent Project Activities:

Task 1: Prepare for Sampling

- Continued preparation work for sampling in July and next sample event.

Task 2: Implement Testing Protocol

- Conducted first testing event on July 7-8 2014 in accordance with draft protocol
- Collected samples for trace constituents and sent to Southern Nevada Water Authority (SNWA) lab for analysis
- Field filtered samples for virus, *Cryptosporidium*, and *Giardia*, and sent to BioVir laboratories for analysis
- Collected *E. coli* and total coliform samples; CRMWD hand-delivered these to City of Odessa laboratory to remain within 6-hour turnaround time
- Collected samples for particle size distribution analysis and sent to Carollo internal laboratory for analysis
- UT post-doc, Sungwoo Bae, participated in sampling event; UT review of protocol also included in Invoice #3

Task 4: Support CRMWD with Additional Sampling

- Coordinated samples for June
- As part of July on-site sampling event, trained CRMWD staff in field filtration techniques for *Cryptosporidium* and *Giardia* sampling.
- Continue to review data from monthly *Cryptosporidium/Giardia* sampling and coordinate results with CRMWD

Issues Encountered:

- Regarding the on-site sample event: Nearly all samples were collected as planned. Only a single sample of MF filtrate was field-filtered (instead of two) because limited pressure at the sample valve required the full flow. This does not significantly affect the results.
- Field filtration of most virus samples was limited by the capacity of the filters to withstand clogging. Therefore, virus samples had to be discontinued before the desired total flow had passed through them. In contrast, field filtration of reverse osmosis permeate samples was discontinued after a full days (8 hours) of filtration, which resulted in over 700L of sample volume processed in each of the duplicate samples. This allowed for excellent detection limits.
- Regarding future sample events: The RWPF continued to encounter operational difficulties. Scheduling for the next sample event is uncertain.

Items to be Addressed and Anticipated Project Activities:

- Sample results from first sample event must be compiled and processed.
- Scheduling of the next sample event must be coordinated around operational challenges at the RWPF.
- Testing protocol must achieve approval from CRMWD, TCEQ, and TWDB.
- Testing protocol must then be finalized in accordance with the approval conditions.
- Continued support for Task 4 components will be provided.