

Final Report for the May 15 – 19, 2014 Onsite Project Training at the City of Wichita Falls Cypress Water Treatment Plant

Executive Summary

On May 15 – 19, 2014, Jennelle Crane, TCEQ staff from Region 3, and Jack C. Schulze, P.E., a TCEQ subcontractor, conducted a site visit at the City of Wichita Falls' temporary Direct Potable Reuse Water Treatment Plant (temporary DPR WTP). The purpose of the visit was to:

- peer review a checklist that was prepared by Marlo Wanielista-Berg, of the WSD, in order to help her prepare a final draft which would be used by all the TCEQ teams that would be providing on-site data reviews during the first 18 days of the temporary DPR WTP Full-Scale Verification Test No. 2 (FSVT2);
- review plant data and complete the checklists for Day 1 – Day 3 of the FSVT2;
- observe the plant staff as they implemented the final Standard Operating Procedures (SOPs) that would be used throughout the FSVT2 and full scale operation;
- participate in daily conference calls with the other TCEQ staff members that were involved in the FSVT2 data review;
- brief the TCEQ staff members when they arrived to replaced Jennelle and Jack.

The TCEQ team successfully completed all the objectives and the results are summarized below.

Technical Summary

1) Peer reviewing the first draft of the FSVT2 Checklist

The on-site representatives reviewed the draft checklist the day it was received and provided feedback to Marlo who returned a second document in time for the team to begin using the form. Although the final version checklist was not released until May 23rd, the differences between it and the version used during the first few days of the FSVT were relatively minor.

2) Reviewing plant data and completing the daily Checklist

The plant operators provided TCEQ data updates on a daily basis. Some of the files were in an electronic format and some were printed reports and graphs. The team spent about 4 hours each day reviewing the data, completing the Checklist, and e-mailing a copy of the checklist to other TCEQ staff each evening. Jennelle created daily folders for the printed materials (which were later compiled into the project notebooks for the FSVT2 project). Subsequently, other teams began scanning the hard copies to create PDF files which were also sent to the other FSVT2 team members for review.

3) Observing the plant staff implement the FSVT2 and FSO SOPs

Jack and Jennelle also spent 3 – 4 hours each day observing the plant operators as they collected and analyzed various samples, entered the data on the daily lab sheets, and conducted other duties related to running the plant. During the first three days of the FSVT2,

the staff encountered and resolved several operational problems. For example, the day before FSVT2 actually started, the River Road Wastewater Treatment Plant (RR WWTP) was unable to maintain a free ammonia residual in the effluent being sent to the temporary DPR WTP. The team learned that the WWTP operators had intentionally de-optimized the WW treatment process so that they could increase the ammonia levels in the treated effluent. The City staff held the first of its daily DPR FSVT2 workgroup meeting the following morning, discussed the problem and developed and submitted a proposal to TCEQ that involved installing a liquid ammonium sulfate (LAS) feed system at the RR WWTP so that the WWTP operators could feed ammonia . . . which allowed them to achieve a more consistent effluent quality and re-optimize the WWTP treatment processes. Several other problems also occurred during the first 3 days of FSVT2, though most were less though less significant than the loss of the ammonia concentration. In response to these problems, Jack and Jennelle developed a simple, short table that the FSVT2 workgroup could use to document such events, their actual or potential impact on DPR WTP operations, and possible solutions to prevent their reoccurrence or minimize the impact. They provided a copy to the other TCEQ staff working on the project, who peer reviewed the document and provide a copy to the City for their use.

4) Participating in daily conference calls

The on-site team participated in several conference calls with WSD and Region 3 staff. These calls would soon become a scheduled recurring event held at 4:00 pm each day. During the calls, the TCEQ group discussed the information that the on-site team had compiled each day and developed a list of issues for them to follow-up on the following day and/or to discuss with the City staff.

5) Briefing the replacement team

The final task that Jennelle and Jack completed was to brief Vera Poe, PE, and Craig Stowell, P.E., two additional WSD staff members participating FSVT2 review process. Vera and Craig arrived the evening before Jennelle and Jack left the site and the two teams met for about an hour to discuss the status of the FSVT2 projects.

Recommendations

The on-site support provided by TCEQ to date has significantly improved communication between the City and the TCEQ, helped the City successfully address monitoring and performance issues that occurred during FSVT1, and facilitated the City's efforts to prepare for and initiate the FSVT2 of their temporary DPR WTP. TCEQ should consider evaluating the possibility of providing this type of regulatory support for other similar projects. However, the TCEQ should also review the information compiled and analyzed by this, previous, and subsequent on-site teams to determine if there is a point of diminishing returns, i.e., whether more than three weeks of continuous on-site support are essential or even beneficial to either party. In this regard, the TCEQ should develop an "end of project" questionnaire that can be completed by both the on-site and remote TCEQ staff as well as the City staff that participated in this particular project. This questionnaire could help the TCEQ identify "critical control points" where on-site support has the greatest positive impact.