

City of Wichita Falls Site Visit Exit Meeting 1/29/14

Attendees: City of Wichita Falls (WF): Dan Nix, Mark Southard

TCEQ: Vera Poe, Alicia Diehl, Jennelle Crane

Documents requested:

Sites 11J and 39J SCADA printouts for total chlorine, monochloramine, free ammonia and free chlorine

Reason: Some readings were observed to be unusual during the visit.

Response: WF noted that the probe at 39J was changed; the rebuilt mono probe was replaced with a spare.

Documents received? ☒ X ☐ Y ☐ N

MMOR and 2010 SWMOR

Reason: Verify data

Response: MS of WF will e-mail them

Documents received? ☒ X ☐ Y ☐ N

SOPs for Water Plant (WP) and Wastewater Plant (WW) DPR/FSV Operation

Reason: Verify operation practice

Response: Mark will send WP SOPs, Bill will send WW SOPs

Documents received? ☐ Y ☒ X ☐ N

Simulated Detention Time Procedure

Reason/Response: TCEQ should have a copy of the description of how WF plans to simulate the detention time of the 2010 clearwell (sample sites 41J, 42J)

Documents received? Notes state that "Vera has it"

Comment [vp1]: probably

TCEQ Clarification Questions

What sampling occurs at Site 40J?

Four-hour CFE grabs analyzed on benchtop and 15 minute turbidity results

There appeared to be water leaking into the lime containment basin, what is that all about?

Carrier water (Need help on this one)

Daniel's Questions:

Q: Trigger levels for disinfectant.

From: TCEQ's 1/22/14 letter, page 3 of 21, Enclosure A, 1st, 2nd, and 3rd bullets

TCEQ set trigger levels of 1.5 mg/L for monochloramine. Daniel reports that his system's practice is to use trigger levels of 1.5 mg/L total chlorine. He would like to request triggers of 1.5 total chlorine and 0.5 mg/L monochloramine

TCEQ asked WF to put this in a written request so that the full team could consider it.

Comment [vp21]: Told must measure mono

Q: Specific pathogens for PCR analysis.

From TCEQ's 1/22/14 letter, page 4 of 21, 4th bullet.

TCEQ listed groups of human pathogens. The number of species of *Cryptosporidium* is high, and PCR is an expensive test. WF would like to run the pathogenic species(2 species).

TCEQ asked WF for a request including the list of primers, the source, and the method for PCR included.

Q: Is the ratio supposed to be 50.00 percent or 50.0?

From: TCEQ's 1/22/14 letter, page 19 of 21, middle of the page - no highlight, #9 and 10

TCEQ answered that it is supposed to be 50.0

Q: What will the approved period of DPR production be?

From: TCEQ's 1/22/14 letter, page 1/21 and elsewhere

WF believes that the approval period extends till the lake returns to 40 percent, as stated in their concept paper, not 'six months' as stated in the TCEQ's letter.

TCEQ recommended WF find the reference in their concept paper and forward that to us with their request for clarification.

Q: What is the approved period for FSV?

From various TCEQ correspondence.

WF notes that previous correspondence approved an FSV period of 30 days continuous operation, followed by a clean-in-place, followed by 10 days continuous operation. If the clean-in-place only takes 2 days, that time period might only be 42 days. TCEQ has been referring to "10, 30, and 45-day" samples.

TCEQ recommended forwarding that request through Joel to the group. After further discussion (page 10/11 in handwritten notes) TCEQ generally expressed their recollection of this, but still wanted further documentation.

TCEQ's Top Four Concerns

Four things we would like to see addressed are:

1. Leaking 1961 Wier Gate
2. Automatic shutdown triggers for WWTP
3. Backwash after 25 minutes, not 30 minutes
4. Flowmeter calibration

Discussion:

1. Leaking 1961 Wier Gate

Photographs taken during the site visit showed that the '61 wier gate is leaking. No disinfection procedure was provided.

WF will work on it, although it seems like they can't get it to stop leaking.

Result: WF will submit disinfection procedures to TCEQ

Comment [vp3]: Daniel stated there may not be anything that can be done but they will try

2. Automatic shutdown triggers for WWTP

The TCEQ specified automatic shutdowns - several of WF's shut down triggers result in manual responses.

WF reported that WWTP shut downs include:

- **WW Effluent not meeting 210 permit conditions.** The 210 permit does not state whether the reuse water is Type 1 (human contact) or Type 2 (no human contact). WF believes the water to be Type 2, TCEQ WSD would consider it to be Type 1. WF considers no human contact to take place, TCEQ considers that the water ultimately is consumed and contacts humans from the inside. High dissolved oxygen demand at aeration, six hour detention time before WP.
 - Type 1 trigger is 3 NTU. They meet that 99.9% of the time, perhaps more when considering confirmed readings.
 - Type 2 triggers/WWTP-defined triggers are documented in SOP as 10, 20, 50?? something like that.
- **Turbidity.** They based the turbidity on what the 2010 clarifier could handle. They have time to do a jar test before a change in turbidity reaches the plant. They have treated up to 400 NTU water. Turbidity could be an automatic trigger.
- Power failure anywhere, for example blowers for activated sludge plant. They have practiced. They have hourly phone calls.
- Petroleum in clarifiers
- Solids wash out.
- Visible surfactant/foaming agent in clarifier (could melt membranes if it reached them)
- Unexplained chlorine demand
- Chlorination failure (residual, I believe, right?) (this can be an automatic shut down)
- Chlorine feed - not auto
- Artificial discoloration in source water. 24 hour detention time before that water gets to WP
- Glitter in source water - means paint.
- Planned maintenance
- Fish kill in biomonitoring tanks at plant discharge. If two fish die, manual shut down.

Comment [vp4]: Daniel did not believe turbidity to be an effective trigger, doesn't really indicate plant upset

Comment [vp5]: Chlorine demand in between RRWWTP and DPR

Comment [vp6]: Love this one, not!

- Giardia, Crypto, total culturable viruses (TCV) over triggers. Results don't come back for 7-14 days after sample collection. That is too slow for automatic shut down. If 1623 method shows more than 7000 Giardia cysts, 948 Crypto oocysts, TCV over 22.2. PCR in on water side. On water side, more treatment is actually provided than the levels set in TCEQ's letter.
- Can check 210 every day if prob... E coli is reviewed, but has 24 hour lag.
- Daily microscopic exam required - they actually look at it every 2 hours.

Question: We asked if WF could monitor halfway down the pipe and check the chlorine and/or turbidity before it reached plant. WF was concerned that since the pipe runs over the ground. WF noted that they still have 12 hours at 7.5 MGD in the clarifier before it hits the membranes. TCEQ noted that it is, indeed, a large clarifier.

Upside?

3. Backwash after 25 minutes, not 30 minutes

The 25 minutes came from a pilot on the MFs when they were working with Siemens. Siemens changed the wash frequency to improve recovery. It went from 3 minutes every 25 minutes to 5 minutes every 30 minutes. It was part of lawsuit.

Upside?

4. Flowmeter calibration

The two flowmeters of concern are the strap-ons at sites 1J and 40J. There are various ways to calibrate a flowmeter. TCEQ requires that flowmeters be calibrated.

WF Response: They will calibrate the flowmeters at 1J and 40J, and let TCEQ know how.

Other Concerns and Questions

Shutdown issues

Shutdown for 50:50 ratio

WF has 15 minutes at 50:50; TCEQ would like 5 or 10 minutes

WF says ok

Shutdown for nitrate

WF has shut down trigger right at the MCL of 10 mg/L. TCEQ would like buffer--at least instrument error.

WF says ok, stated 9.9 mg/l

18a NH₃ (email)

TCEQ said method SM 4500 G, WF wishes to continue to use SM 4500 D.

TCEQ considers this a reasonable request for WF to submit in writing.

18c Monochloramine

WF wants to use the Hach 6000.

TCEQ considers this a reasonable request for WF to submit with tables showing a comparison between the results of the Hach 6000 and the benchtop.

18d CL17

WF wants to use a Hach CL17

The Hach uses a DPD method that is referenced under our letter as one of the methods approved under 290.110. It is ok to use the CL17, no special request is needed.

Color

WF would like to use the Hach spectrophotometer, which is calibratable using a cobalt standard, instead of a color wheel for color measurement. (Note, this refers to the measurement of the COLOR of the water, not any disinfectant residual)

The TCEQ letter does not specify a method, and the spectrophotometer is calibratable, so the spectrophotometer is ok, no special request is needed.

1615 Viral method

WF plans to use Biovir labs in California.

We specified a UCMR3 lab/method. 1615 is the correct method; Biovir is the lab that EPA worked with in developing the UCMR3 method. WF can use Biovir, they need to tell us that in writing but no special request is needed.

Membrane issues

Membrane changes and change orders

WF changed membranes without informing TCEQ.

We need WF to notify us of the membranes that were changed (Russell-Schreiber, PE will stamp that). Also, we need the change orders referenced in the 1/22/14 letter (Kerry Maroney, PE will stamp that)

Comment [vp7]: Engineer not required

Temperature correction factor

WF is using the pre-LT2 temperature correction factor

We need them to use the LT2 correction factor. Enclosure E provides guidance.

FSV report

Formatted: Normal

Fluoride system

TCEQ requested information regarding the fluoride system.

WF will provide that. They worked directly with DSHS and installed it according to the DSHS recommendations in the late '90s.

Presentation of graphs

Some discussion of graphs occurred. WF's planned methods for presenting data seemed acceptable.