

## Meeting Minutes

Joint Meeting of the Water Quality Advisory work Group (WQAWG) and the Water Quality Standards Work Group (WQSWG) to Address Thermal Discharge Issues

2<sup>nd</sup> Meeting

December 17, 2014

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Location: Building F, Second Floor, Room 2210

Time: 9:30 am – 11:00 am

*Handouts:* Meeting Agenda and Temperature Screening Procedure Concept Adaptations in Response to Stakeholder Comments Received on August 20, 2014 – Available on webpage.

### **9:30 a.m. Welcome and Introductions presented by David Galindo**

The meeting commenced with an introduction by TCEQ Water Quality Division Director David Galindo, followed by attendee introductions.

### **9:40 a.m. Temperature related Items in the Standards presented by Debbie Miller**

A brief update was given by TCEQ on the status of revisions to the standards.

- 2014 standards revisions regarding temperature
  - Added definition for industrial cooling water areas
  - Added industrial cooling water areas to short list of items that are exempt from numeric temperature criteria
  - Explicitly state that we can have different size mixing zones for different parameters
- Texas Tech literature research on delta T's
  - Due next summer

### **9:42 a.m. Revised Screening Procedures presented by Mark Rudolph**

TCEQ presented a revised conceptual approach that could be used as a framework for the development of the screening procedures.

- New approach flowchart
  - Eliminates need to make up front decisions
- 1<sup>st</sup> diamond: Does wastewater exhibit elevated temperatures and discharge into a water body with temperature criteria?
  - Most waterbodies do have thermal criteria
  - What are discrete criteria that categorize a discharge as thermal?
  - If RP analysis warranted
    - Heat balance calculation based on critical conditions associated with default mixing zone
    - Mixing zones may be different for temperature
- Rectangle talking about modeling using CORMIX as an example
  - More complex than simple mass balance/heat balance
  - Likely to be collaborative effort between applicant and agency
    - Outfall design
    - Outfall placement
    - Waterbody dimensions
  - Conservative uncalibrated model
- Next step to perform site specific technical analysis
  - Major data collection
  - Complex numerical modeling
  - Customized mixing zone dimensions
  - A lot of involvement by applicant
    - Collecting data
    - Performing modeling
- Other options if we get to the end of the flowchart
  - 316(a) analysis
  - Temporary variance
- How this approach addresses previous stakeholder comments
  - Flowchart format easier to understand
  - Original dilution threshold information that you needed to know initially is not required for this concept

- More consistent with the way we screen any constituent that might end up in a TPDES permit
- Use of calibrated model from start has been eliminated
- Eliminates need to exercise high degree of individual judgment early in the process when there is a limited amount of information available
- Eliminates arbitrary thresholds, all permits get same scrutiny

### **9:52 a.m.**

At this time the audience was encouraged to participate in a discussion of the revised temperature screening approach.

### **General Discussion**

*SH QUESTION:* Stakeholder (SH) asked when discharge is into unnamed or unnumbered stream where a temperature criterion is quite a way downstream, how is temperature criteria applied going back up to point of discharge?

*TCEQ:* Start simple; only go to complex analysis if needed. Immediate stream will have temperature criteria if not exempt. We are still developing what criteria will be applied.

*SH QUESTION:* Why are calibrated models optional?

*TCEQ:* Only needed in accordance with flow chart, very site/discharge specific. Resource intensive exercise, if you can do simple, conservative techniques to develop permit limits, no need to spend those resources (time and staff). Example is a small discharge into water with substantial dilution potential.

*SH QUESTION:* Do you have guidelines for sizes of mixing zones?

*TCEQ:* Details are to be worked out, try to use existing approach first. In general, simple techniques employ conservative assumptions and the predictions you get out of them tend to be more protective than detailed analysis. We must be confident that with simple, conservative techniques, water quality standards will be maintained. In most cases if you go to a more sophisticated model with data collection and calibration, the numbers in the permit tend to be more realistic because the various safety factors employed in a simplified analysis are removed, so get closer to actual conditions.

*SH QUESTION:* Is there a threshold for thermal discharge? Anything over the standard may be too conservative.

*TCEQ:* This is to be developed along with other factors, will rely on input from industrial permit team regarding what constitutes a thermal discharge.

*SH QUESTION:* Would you consider using thermal feature of QUAL-TX?

*TCEQ:* CORMIX is the common model used for this in the past, any model legitimate to waterbody and circumstances would be fine, prefer public domain models but we are flexible.

*SH COMMENT:* QUAL-TX will assume temperature is constant across the stream and through the entire depth.

*SH QUESTION:* What about overlapping mixing zones?

*TCEQ:* Current approach will come into play, thermal discharges might be able to overlap (to be determined), not known if thermal can overlap toxic mixing zones.

*SH QUESTION:* Will you be developing numeric standards for unnumbered segments and applying those to the discharges?

*TCEQ:* Need some way to assign unclassified waters with temperature criteria, decisions haven't been made yet, as of right now the only waterbodies that have numeric maximum criteria are designated segments in Appendix A. No scenario for how we would pull that further up into the watershed. Delta T's (rise over ambient) apply to all water bodies, both classified and unclassified; Delta T is in the standards now (since 70s) so theoretically your limits should take Delta T into account. We do not yet have procedures to show how the temperature limit is protective of the rise over ambient and segment max criteria; this is the goal of this meeting and temperature project. We are available to meet about the required study plan.

*SH COMMENT:* We only have one year to determine impact to segment, now you say we must do this for unclassified waters also?

*TCEQ:* Only Delta T will apply to unclassified waters, must look at entire watershed. We can assist with the study plan required in current permits.

*SH QUESTION:* What about 100% effluent streams?

*TCEQ:* Effluent temperature is then the ambient temperature; a lot of these questions have been answered by other states so if you have experience in other states or operations that have gone through this process please pass this information along to us.

*TCEQ COMMENT:* One way to capture some of this discussion would be to add another section to the flowchart to evaluate impacts on downstream waters.

*TCEQ COMMENT:* Carry the analysis as far downstream as needed to demonstrate compliance with water quality standards, not just the immediate receiving stream.

**9:52 a.m. Break**

**10:35 a.m. Resume**

### **Stakeholder Process – Jaya Zyman-Ponebshek**

- Main purpose of stakeholder process is to get stakeholder input
  - We have not yet developed final procedures
- Need your input on the following questions:
  1. How define discharges that exhibit elevated temperature
    - a. By type: Cooling water, anything that touches a heat exchanger, blowdown
    - b. By temperature rating
  2. Other models we should consider
  3. Sizes and configuration of mixing zones for various body types, preliminary screening using default mixing zones will be more conservative
    - a. Ambient temperature statistics, assessing data from SWQM, a lot of data available on classified segment, not so much on unclassified
    - b. How do you determine the actual temperature for ambient
  4. Information on temperature screening procedures used by other states, your experience will be helpful
  5. Want your input on everything you can think of that applies to temperature screening, setting limits and conducting RP analysis. We have email group and web site for this information

### **General Discussion**

*TCEQ COMMENT:* Language that is in permits now agreed upon with EPA. EPA wants permittees to start collecting data but we don't have a methodology yet, may not have the need to do modeling, only data collection. We don't want permittees to do a lot of modeling before procedures are finalized and then not need it.

*SH QUESTION:* Where is the language of the 3 items that Debbie spoke of earlier?

*TCEQ:*

307.3 definitions is where we added definition for industrial cooling water area

307.4(f) general criterion and who is exempt from max temperature criteria, Delta T

307.8 application of standards, clarify that we can have mixing zones of different sizes for different numeric criteria

*TCEQ COMMENT:* Cooling water reservoirs may not have issues downstream from the reservoir.

*SH QUESTION:* Speaking on power plants, are you going to be looking at the applicability of the existing standards in some of those situations or are the temperature criteria set? Will you be looking at modifying criteria?

TCEQ: Maximums were well vetted in the late 70's, a contract is currently out with Texas Tech to look at Delta T to make sure it is still appropriate, also looking at temperature maximums which is a longer term process.

*SH QUESTION:* Any consideration on changing how we determine standards attainment?

*TCEQ:* Not yet but we could, flow rated average is important. EPA is objecting to how we determine attainment. How should limits be expressed i.e. straight temperature, loading limits.

**10:45 a.m. Next Meeting Date, presented by David Galindo**

- Next item on timeline is to get comments by March 31<sup>st</sup>
- Another meeting before March 31<sup>st</sup>?
  - We have enough interest to have another meeting
  - Check our website for updates (first week of January)

**10:50 Adjourn**