SUMMARY OF THE
TNI CHEMISTRY EXPERT COMMITTEE MEETING

JULY 11, 2014

The Committee held a conference call on Friday, July 11, 2014, at 2:00 pm EDT. Chair Richard Burrows led the meeting.

1 – Roll call

Richard Burrows, Test America (Lab)	Present
Francoise Chauvin, NYC DEP (Lab)	Present
Brooke Connor, USGS (Other)	Absent
Dan Dickinson, NYSDOH (Accreditation Body)	Present
Mandi Edwards, Envirochem (Lab)	Present
Tim Fitzpatrick, Florida DEP (Lab)	Present
JD Gentry, ESC (Lab)	Present
Nancy Grams, Advanced Earth Technologists, Inc. (Other)	Absent
Anand Mudambi, USEPA (Other)	Absent
John Phillips, Ford Motor Co., (Other)	Present
Scott Siders, IL DEP (AB)	Absent
Gary Ward, OR DPH (AB)	Present
Ken Jackson, Program Administrator	Absent

Associate Committee members present: Arthur Denny; Reed Jeffery; Dixie Marlin.

2 – Previous Minutes

It was moved by John and seconded by Mandi to approve the minutes of June 27, 2014. All were in favor.

3 – Calibration Interim Standard

Richard reported he had made two edits to address comments that had previously been found persuasive, but had not been dealt with earlier. He suggested deferring this discussion until the committee dealt with comments on the interim standard, though none had been received yet.

3 – Options for the Quantitation Limit Standard

Richard presented for discussion three questions concerning the quantitation limit determination and verification.

Question 1. He asked how much data are we going to say is necessary? Should it be consistent with the MDL proposal (initial 7 replicates, then minimum of 4 per year and minimum of 2 per instrument)?

This would allow laboratories to use the same data used for MDLs and would be consistent with other procedures, including the drinking water MRL. It would also be more than is required for SW846. Tim commented that Section 1.5.2.2 of the current (2009) standard does not require annual LOQ verification if the LOD was determined or verified annually on that instrument. He said that statement should be removed from the standard, and Richard agreed. Tim added that a low limit of quantitation may not be needed if a laboratory is working at high concentrations. Richard suggested deciding first what the committee will do and then considering any special cases. The committee agreed the amount of data should be consistent with the MDL proposal, and this would apply to initial determination and an on-going minimum of one on each instrument per quarter (i.e., a minimum of 8 over 2 years).

Question 2. What are the consequences/corrective actions for a failure? In the initial set it could be an individual failure (e.g., result below the LOD, a non-detect, or not meeting the identification criteria). It could be a set failure (e.g., RSD too high or recovery too low etc.). John said it would be better to start over again, but Tim added it would depend if it was just one instrument or multiple instruments. If multiple instruments, it might just be necessary to re-run on the one instrument that needed fixing. It was suggested no outlier removal would be allowed, because it would be a small data set. However, Francoise said it might be allowed for (say) a bad injection, and language similar to the removal of a calibration point in the calibration interim standard could be used. She added that justification would have to be documented. John added, if one instrument fails all the time, it is not acceptable to just do a corrective action every time and the instrument needs to be pulled out of the study. The committee agreed the corrective action should be the same for an individual failure or a set failure. The question also asked if single analyte vs. multi-analyte method would make a difference. An example was Method 8270 with about 100 analytes, but just one fails the RSD or there is an individual replicate failure. Tim pointed out the spiking level is a compromise in a multi-analyte method, and John added a failure may be expected statistically when there are a lot of analytes. Richard said a precedent had already been set for marginal failure, and asked if something similar could be done here. The corrective action would be the same but there would be more flexibility in multi-analyte data. Others agreed.

Question 3. With on-going data, what about an individual failure (e.g., result below the LOD) and a set failure (e.g., RSD too high)? Tim said a new study should be required if it is not a marginal exceedance. Francoise was concerned about a laboratory not reporting the failure. Tim said that single run could be an outlier, but that would not be known. Richard asked if 3 more could be run if the first one was thought to be an outlier. Then if those 3 included a failure, the initial study would be repeated. The question also asked if single analyte vs. multi-analyte would make a difference. He suggested an approach similar to the initial case (marginal exceedance). Tim added the same analyte cannot keep appearing as an outlier; i.e, it must be a random event.

At this point, Richard said he now had a sense of the direction the committee wanted to go, and said he would put some draft language together as bullet points.

It was suggested the data populations for LOD and LOQ should be separate; i.e., a laboratory should not have an LOD close to its LOQ. However, Tim pointed out the two populations do sometimes overlap with poor performers. Richard said a criterion in the standard should be that the LOQ must be some multiple (e.g., 2- 3 times) of the LOD or MDL.

Dan elaborated on a suggestion he had circulated by e-mail. Facility captured laboratories, testing to an action level permitted to that facility, might demonstrate compliance with the LOD and LOQ clauses by acceptable performance in routine semiannual proficiency testing for promulgated methods. The laboratory would adopt published method performance criteria for its LOD and LOQ, if not otherwise specified by its permit regulator. The approach would be limited to a few analyte/methods that are routinely performed by treatment plant operator/captive labs with limited testing scopes. Dan applied this approach to PT data from 29 COD studies over a concentration range of 20-200 mg/L with 55 to 124 participants in each study, and showed the expectation of LOD, LOQ and RSD that it would produce. Richard asked how it would be decided which methods it would be applied to, and Dan suggested the Proficiency Testing Executive Committee would make this decision after studying the PT data. Tim suggested this suggestion might be taken to wastewater laboratory organizations for their input. Richard proposed putting this proposal in the category of exceptions to be considered for the standard after the normal procedures had been developed.

Nancy had drafted a set of indicators that could help a lab decide what they want their initial spiking levels to be for their LOQ verification samples. These were: historical and current routine reporting limits; historical and current MDLs; applicable regulatory and action limits; client-required reporting limits and client-specified data quality objectives for minimum precision and accuracy; method recovery; instrument response; method blank values; the calibration range; and RSD linearity. A discussion centered on whether the standard should contain guidance. Richard said many people have made it clear the standard should just contain requirements in order to be auditable. John wondered if it could just tell them to select an LOQ concentration and give a list of examples how it could be done. However, Tim and Richard felt even this level of guidance might not be welcomed in the standard. The committee put this item on the list of things to come back to when the standard had been drafted.

5 – Adjournment

The meeting was adjourned at 3:30 pm EDT.