TNI Stationary Source Audit Sample Expert Committee Teleconference
June 6, 2011

Attendance:

Maria Friedman – Chair TestAmerica (Laboratory)	Committee member	present
Mike Hayes Linde (Provider)	Committee member	present
Michael Klein New Jersey DEP (State government)	Committee member	present
Gregg O'Neal, North Carolina DAQ (State government)	Committee member	present
Michael Schapira Enthalpy (Laboratory)	Committee member	present
Jim Serne TRC Solutions (Stationary Source Tester)	Committee member	absent
Richard Swartz, Vice-chair Missouri DNR (State government)	Committee member	present
Stanley Tong EPA Region 9 (Federal government)	Committee member	present
Ken Jackson TNI (Program Administrator)	Program Administrator	absent
Ty Garber Wibby (Provider)	Associate member	absent
Shawn Kassner ERA (Provider)	Associate member	present
Mike Miller (Member at large)	Associate member	present
William Mills Mills Consulting (NELAC Assessor)	Associate member	absent
William Daystrom TNI (Webmaster)	Guest	present
Theresa Lowe CCI (Stationary Source Tester)	Guest	present
Jeff Lowry ERA (Provider)	Guest	present
Charles Simon VRI (Laboratory)	Guest	present
Wayne Stollings Triangle (Laboratory)	Guest	present

1) Double-check receipt of documents to be referenced in this teleconference

Maria asked the committee to confirm receipt of the documents e-mailed June 3, 2011. All confirmed receipt.

2) Review and approve minutes from teleconference on May 23, 2011

Maria noted that she had heard from Jeff Lowry that the lowest concentration audit sample data reviewed by the subcommittee had been 46 ppmC, not 72.4 ppmC (that had been mentioned in the 5-16-2011 minutes). Maria said that the records shared by the subcommittee only showed 72.4 ppmC as the lowest concentration, so that is why that number was in the minutes.

Gregg moved to accept the minutes, and Mike Schapira seconded the motion. All Committee members voted in favor.

3) Guest Introductions

Wayne Stollings of Triangle Environmental Services and Charles Simon of VOC Reporting Inc. introduced themselves to the committee. Both have substantial direct experience with Method 25 sample collection and analysis, and joined the call at the request of the committee to share their unique knowledge and insights.

4) Continue discussions re. Method 25

Michael Klein said that an EPA document (EPA 340_1-91-008, “Manual for Coordination of VOC emissions testing using Methods 18, 21, 25 and 25A”) referenced in an email to the committee from Charles Simon is a document written by a contractor for EPA for a training course, it is not a manual for doing the method.

Richard asked Charles for his opinion regarding the reliability of Method 25 audit samples below 150 or 100 ppmC. Charles said that you have to be very clean with this method, and that it is more akin to pesticide residue analysis which is 1000x more sensitive. He said that his labs have had extremely high pass rates for audits, to which he attributed the training of personnel and the cleanliness of the equipment (controllers and filters), which are also designed to be resistant to abuse in the field.

Charles added that Method 25 requires additional steps in collection that are not required by other methods: it comes from a high-pressure gas cylinder; compounds are extremely volatile and must remain gaseous under 1000 psi, and are delicate. If proper care is taken, concentrations down to the method limits are possible.

Charles said that Method 25 does not have blank correction in the method. He said blank correction only appeared in the EPA document cited in his email (EPA 340_1-91-008), but it should have been included in the method, since it was standard procedure to subtract background results in every other method he has performed. He attributed its absence to regulatory inattention. In his experience, the average blank sample would have a result of 10 ppmC, so if you had a 50 ppmC audit sample, the background levels (10 ppmC) would by themselves account for 20% of the expected result for the audit sample: in effect, you would be counting vapor toward the audit result. He concluded his opening remarks by strongly urging the committee to retain audit samples down to low levels, retain the +/- 20% acceptance limits, and to allow blank correction for audit samples below 200 ppmC.

Jeff asked if existing permits would need to have blank correction written into them. Charles answered no, because as he saw it, TNI is now the determining body in setting requirements for audit samples, and EPA and state regulators would accept whatever rules TNI had set.

Jeff reminded everyone that audit samples must be done the same way as stack samples. Charles responded that it would be impossible to do that with Method 25, due to the way the sample is collected. Method 25 audit samples require clean, leak-free regulators and manifolds, T connectors and flow rate indicators - a contraption that is not used with stack samples. He said that the analytical portion of Method 25 is well understood and yields highly consistent results, but the devil in the details lies in collection. He reiterated the importance of tester training and documentation, and offered to share his training materials and post them on the internet.

Maria asked Wayne and Charles if, when they had low level VOCs, did they report them blank corrected. Wayne said no, because the guidance from the Emission Measurement Center had been that blank correction for Method 25 was not allowed. Charles concurred, and added they add a statement to their reports saying that the results had not been corrected for blanks. He said that he has had experiences where an administrator took the lack of blank correction into account when evaluating low level audit samples.

Maria asked Regulators if they allowed blank correction. Michael Klein said no, because the EMC did not allow it. He added that while the collection process is different for audit and stack samples for Method 25, the analytical process is the same. He went on to say that EPA will have to make changes to the method if needed; that is not TNI's prerogative.

Michael Klein asked if EPA had been asked why blank correction had not been included in Method 25. Charles said that EPA had not gotten around to it. He reiterated his view that TNI could make the change (allowing blank correction) without changing the letter of the method, by simply allowing Regulators the option to consider blank corrected results for Method 25, and let them decide the acceptability of those results.

Gregg agreed with Charles, and said it was left to the Providers to include instructions with the audit samples to indicate how the audits were to be performed.

Wayne said one problem with the audit program was that, until recently, it was more punitive than anything else. The first audits from the EPA program were from RTI in large cylinders that were re-used, and there was no feedback to the lab to tell them how well they had done (since the cylinders were re-used, if the lab knew the true values, that could compromise the integrity of future audits). When ERG started supplying audit samples, their cylinders were supposed to be single use. After numerous complaints in the field that the cylinders did not have sufficient gas, there were suspicions that the cylinders were being re-used as well. Low volumes in the cylinder could lead to failed audits due to backflow from the exhaust back into the collection system (diluting the audit gas with ambient air). There were also issues with Regulators. His instructions to testers were to take audit samples prior to stack samples, using clean systems, due to the great potential for contamination. He added that these kinds of issues would be apparent from the historical audit data from EPA, and pointed out that data from Michael Klein in New Jersey had indicated that problems with Method 25 audits were sample collector related, not analytical related. Unless you exclude some testers, you cannot properly analyze the historical data. Referring to the EPA requirement to set acceptance limits so that 90% of Laboratories can pass the audit, he said you would be dumbing

down the audits to show a pass rate when it should be used to determine where the problems are that need to be corrected.

He said he does not get feedback about how well the Laboratory had done in past audits.

He concluded by saying he has always proposed a two-step audit: at or above 100 ppmC, +/- 20% is more than adequate. Below 100 ppmC, +/- 30% would be acceptable to allow for unavoidable variation.

Gregg and Mike Schapira said that Wayne's concern about getting feedback about Laboratory performance will be addressed by the TNI Program.

Gregg said he was concerned by the lack of definitive instructions from the method for how to collect audit samples. He said that input from Testers is needed in addition to Regulators. Wayne recalled that RTI had included instructions when they produced audit samples for EPA, and that those instructions were, he believed, copied from the EPA manual cited earlier. He did not know if ERG sent instructions with their audit samples.
Action Item: Charles said he would send copies of his audit sample collection instructions and PDFs for review, which can be used in whole or in part.

Charles also suggested that to help identify the source of audit failures, adding CH4, CO, or even 5% CO2 (that RTI used to add) would yield a more representative sample, and also enable the Laboratory to identify if failures are due to sampling problems, dilutions, collection procedures, etc.

Stan asked Charles if his collection setup differed from the diagram in Figure 6.9 of the previously-cited EPA manual. Charles said that the setup was basically the same, but the diagram leaves out essential details such as the materials needed for the flow regulator and the proper setup of the rotameter (e.g., low-flow rotameter with an excess flow rate of 50-100 ml/minute).

Gregg asked if it would be possible for Wayne and Charles to attend an EPA regulatory conference where they can show regulators how Method 25 samples ought to be collected. Charles was agreeable to the idea, and said that he often assists industrial firms in that way. Mike Miller suggested that the committee sponsor a training session at the annual NEMC conference. The next conference is in August 2011, but this year's program has already been set so it would have to wait until next year.

Mike Miller also pointed out that, regarding blank correction, Method 25 is not the only method that has huge problems: 99% of the drinking water, wastewater, solid/hazardous waste methods do not have blank correction; they require blanks to be analyzed and reported, but results are not corrected for blanks. His opinion is that for Method 25, you could possibly require that a blank be analyzed and reported, but it is very unlikely that EPA would change their position regarding blank correction on Method 25.

Shawn asked Charles if when he looked at his historical audit sample data, did he know the assigned values. He said usually not, unless there was a mistake. If he was told he had failed an audit, he would usually not be told if the failure was high or low. He said that failures were so rare that when they did occur, they were found to be due to various

equipment failures (e.g. a column heater that was not working) that were not revealed by the calibration gases. The audits were doing their job, and therefore he would like the requirements to remain stringent.

The committee then discussed the merits of widening acceptance criteria so that the percentage of failed audits would be reduced from the historical 40% (at low levels). Gregg said that if the limits were widened, they would tighten again over time as audits were performed and Facilities started to demand better results. Michael Klein's position was that wider limits would not tighten over time, as Facilities would not be concerned with better results as long as they were passing the audits.

Mike Schapira said that if we allow blank correction for audit samples (assuming that blank results do indeed average 7-10 ppmC, a sizeable percentage of a low-level audit), that would give Regulators something to think about when they review stack sample results too.

Wayne said that about two years ago, they had done an internal blank audit program. They noticed that when a client collected a blank from a zero air cylinder in the field, they could have higher results in blanks than in samples. He continued that his lab observed that when there were interferent in the trap (perhaps due to interaction with the chemistry or packing), their lab got lower reported concentration than what they had in the blanks. So there is some criteria for having low level samples that actually improved the reproducibility and the accuracy than the blanks would. Wayne recalled that they had three samples (~18, 17, 18 ppmC), and these concentrations they would not normally see with three blanks taken and analyzed at the same time. Therefore, there seemed to be something with blanks that they did not see in some of the low-level samples.

Charles said that in his Laboratory they learned long ago that they had to use very clean sampling equipment (the tubing, connectors, and flow regulators) for blanks and audits, and to keep that equipment segregated. Dirty equipment will result in failures out high, leaks will result in failures out low.

Maria brought the discussion back to the acceptance criteria proposed by the subcommittee, namely the regression equation versus a simple +/- percentage. The regression equation is designed to predict an estimated mean of 100% and an estimated standard deviation of 6-7%. The proposed table footnote explains that the proposed acceptance limits can be no tighter than +/- 30% (if the calculated acceptance limits using the regression equation are less than +/- 30%, then the acceptance limits are set at +/- 30%). Charles said he is definitely against loosening the criteria. Stack testing is difficult: you have to pay attention, you have to be clean – if you're not, you're in the wrong business. If you dummy-down the criteria, that's where stack testers will be. Industry does not care about acceptance criteria, they only care about passing. That's the American Way. Charles suggested the committee do a statistical analysis of the historical data for individual labs.

Shawn said that the historical data available to the committee did not identify Testers or Laboratories. The data shows a national failure rate of 40% for samples below 100 ppmC. This is a source of confusion since only two labs are responsible for the vast majority of Method 25 audit samples, and if one of them has pass rates of 99%, that would mean that the other lab had failure rates approaching 80%. It is possible that the

pass rates reported to Charles only appeared to be so high due to Regulators not informing the Laboratory of failures that did not affect the Facility (e.g., failures out high).

Action Item: Charles and Wayne were invited to send in confidence any historical audit sample results they have to Shawn and Jeff and the subcommittee would compare that data with the EPA historical results in an attempt to identify the true failure rates.

5) Adjournment

The meeting was adjourned 3:30 pm EDT.

The next meeting is scheduled for June 13, 2:00 - 3:30 pm EDT.

TNI Stationary Source Audit Sample Expert Committee Teleconference Agenda for June 6, 2011:

1) Double-check receipt of documents to be referenced in this teleconference

2) Review and approve minutes from teleconference on May 23, 2011

3) Continue discussions re. SSAS Table