SUMMARY MINUTES - National Work Group on Leak Detection Evaluations Meeting
Gulf Shores, Alabama, October 10-12, 2001

October 10, 2001
Welcome and opening remarks.
Attendees: Work group members plus Jim Clemenson (EPA R-7), Tom Collins (IA), Stephen Kent (KY), and Carolyn Skaggs (CO).

Action Items (cumulative from 10-12 Oct):

1. Next meeting: March 13-15, Kissimmee, FL. John Kneece will take minutes.
2. Fall 2002 meeting in South Carolina.
3. Fall 2003 meeting tentatively in Kansas City.
4. Shaha Farahnak:
- ♦ Review a couple of translations from European certification process (Ken Wilcox will provide).
- ♦ Publish final minutes for March meeting (done).
- ♦ V-R probe comparison issues.

5. Tim Smith:
- ♦ Review current vacuum systems listings.
- ♦ Pursue signature for cover letter on 9th edition.
- ♦ Post minutes and notification of next meeting location and times on web.
- ♦ Contact Containment Solutions re: sensor evaluation.
- ♦ Convert proposal on manifolded tanks into .pdf and distribute.

6. Beth DeHaas:
- ♦ Send copies of new report form for ATG test regimen (done October 15th).

7. John Kneece:
- ♦ Contact Tracer re: issue of water on/over tank during testing (done October 18th).
- ♦ Take minutes at next meeting.
- ♦ Do preliminary for meeting next fall in SC.

8. Jon Reeder
- ♦ Begin to develop NWGLDE web site.
- ♦ Contact SIR vendors for information on floating vs fixed threshold use.
- ♦ Contact SIR vendors on how their method deals with gains vs losses.

9. Curt Johnson:
- ♦ Distribute information about candidates for open position.
- ♦ Post invitation to regulatory people to attend next meeting through ASTWMO.
- ♦ Write vendor meeting invitation letter and send to Tim for posting on web.
- ♦ Remove yellow overline on 9th edition list before sending out.

10. ALL
- ♦ Send written comments on protocol review report to Tim Smith at EPA/OUST.

Review team assignments and reassignments:

Russ Brauksieck announced his departure from the Work Group due to new job responsibilities with NYSDEC.

ATG/Volumetric: Beth DeHaas (lead), Jon Reeder, Mike Kadri (new assignment)

CITLDS: Shahla Farahnak (lead), Shaheer Muhanna
Non-Volumetric: John Kneece (lead), Mark Lenox
Pipeline: Mike Kadri (lead), John Kneece, Mark Lenox
SIR: Jon Reeder (lead), Shaheer Muhanna
Sensor and Vacuum Test Methods: Tim Smith (lead), Shahla Farahnak
Administration: Curt Johnson (lead), Tim Smith

Team leader updates:

ADMINISTRATION (Curt and Tim)

- 9th Edition Publication date is November 12th. All edits, additions, and deletions should be completed before the end of the meeting (October 12th).
- If you send in a new listing and the system was previously listed as under review, please note to Curt to remove from "under review".
- Please remember to add "under review" systems to list.
- Still have vacant position on work group for an EPA representative—list of candidates has not been sufficient to conduct selection.
- Curt invited visitors to consider becoming a candidate for work group.
- Tim announced that EPA is moving toward protocol revision/rewrite for the original seven protocols. Hoping that report from UW-Madison will help determine priorities for the effort.

SENSOR/VACUUM (Tim)

- One system under review.
- Approximately 20 sensors on list for vapor/liquid.
- Some concerns with containment system that comes with sensor—no record of 3rd party certification of the sensor.

S I R (Jon)

- A vendor has purchased right to use certified system under another name…should this be a listing?

Discussion – opinions varied as to whether the SIR certification for a "stand alone" system limited use to personally owned tanks vs using a "stand alone" system to provide SIR service to others (this is the case above.) Although unanimous agreement was not reached, majority opinion was that anyone who legally had the software could conduct SIR "stand alone" analysis—even for other tank owners. Members voiced concern over making a separate listing for a system under a new name…analogy of ATG systems was given as example of where this already existed. Additional concern was that this might be just the beginning of having to list the same equipment or software under several different names. This concern will be addressed in future.

- Work Group received letter from Iowa listing concerns over SIR performance.
- Tom Collins from Iowa discussed their concerns: Inconsistencies in SIR analysis. Differences in results from different platforms, all certified under SIR Protocol.
- Jon had draft response for Iowa; approved.
- Discussion of fixed vs variable threshold. No consensus. Jon to request information from SIR vendors on fixed or floating threshold…who uses what. Also to request information on how the method treats gains vs losses.
- The California Water Resources Control Board (SWRCB.GOV) web site has SIR guidance document. Search for "underground tanks".

- No systems under review.

PIPELINE (Mike)

- Manufacturer had requested decreasing pre-test time for line tests. 3rd party results and operations instructions and bulletins stated pre-test pressurization time was necessary. Mike had draft response; approved.
- No systems under review.
- Discussion of .05 vs .01 as threshold. Decided the word "declare" would be best description of operating practice for method.
- Mike cautioned Group about "word-smithing" changes on listings…sometimes can cause problems in future.

ATG (Russ)

- 4 systems moved onto list.
- Two systems removed from under review.
- One system under review.
- Some issues with probe comparison testing. Probe that is common to both CITLDS and ATG use…submitted comparison testing to ATG group, but wanted comparison for CITLDS function. This report forwarded to Shahla (CITLDS).
- Beth has developed new form for reporting ATG testing data that corrects deficiencies in previous report form as far as waiting times etc. Ken Wilcox has new form. Beth to send copies to work group members (this done 10-15-01).

VOLUMETRIC TESTING (Russ)

- New evaluation may be in the works for a currently listed system…ownership change.

BULK TANKS (Russ)

- Mass based—no activity
- Volumetric – 2 systems under review. Anticipating another submittal soon.

NON-VOLUMETRIC (John)

- 2 systems under review. One system under review does not currently have water detection instrument for testing where water is on the outside of the tank. Company had requested listing that limited use to areas where no water was outside the tank. Reluctant to post system to list until more universal application fit. Group agreed.

CITLDS (Shahla)

- One system removed from review list—non-responsive to request for data.
- Two systems still under review. Each has unresolved issues.
- Impact of vapor recovery systems on CITLDS operations has become an issue. May need further study.
- Further discussion of the probe comparison submittal. Jon passed comparison package to Shahla. Shahla to contact manufacturer by e-mail for clarification of package and to request initial test report on the existing probes.
- Beth recommended testing beyond the 12 events currently required in the probe comparison protocol; especially when the probe is for CITLDS use. Review of the protocol indicates that the

initial certification report for an existing system should be included with comparison test data submittals.

Old Business:

- Curt has received files of old review materials from Jeff Tobin…Curt will maintain the files at his office.
- Russ will maintain the files of old review materials from his term with the work group at his office.
- Review of action items from last meeting. Most items closed out. Of note:

Item 9. Manufacturer response to use of electronic line leak detector in conjunction with line tightness testing procedure did not indicate a desire to have the method included in the list.
Item 14. Response to Russ's inquiry indicates that tech support for Ainlay system is still available.

- Review of concerns presented in Ken Wilcox memo from last spring's meeting. Changes to test procedures should be approved in writing before testing begins. Discussions about test procedures or changes should be with team leader. New protocols should be reviewed through process in Work Group protocol review/approval memo before testing begins. If vendor changes hardware or software during the testing process, the test procedure should start over from the beginning. All test events should be noted in the report…if any events are not included in the analysis, reasons for omission should be stated. This includes evaluator error and equipment outage events. Report should include conditions where system did not work, any deviations from the test plan, and effect on test results.

The group agreed on these statements.

- Discussion of leak detection trends. Suggestion that work group explore potential for low-vacuum technology to be approved as a leak detection method. System seems to offer leak prevention aspect as well as leak detection capabilities. General agreement on idea, but not sure how to move forward as a work group within our charter.
- Overall opinion of work group was that leak detection methods and practices were improving…but that owners were not necessarily reporting suspected releases as required by the regulations.
- California has embarked on a field study of sensor operation—Shahla had initial results, but too early to characterize performance. Additionally, study of field performance for leak detection systems is to start in near future.
- Jon reported that Florida offered an on-line leak detection school for owners, operators, or other interested parties.
- Preview of schedule for next day.

Adjourn

10-11-01 – Morning Session
Attendee List – National Work Group on Leak Detection Evaluations Meeting

Name	Representing	Phone	e-mail
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Introductions.

Presentations.

WORK PLAN REPORT…PROTOCOL REVIEW (Jack Quigley, UW – Madison)

- Draft report available at website, http://epdweb.engr.wisc.edu/epa. Report is not final, but the presenter forecast there will be a recommendation that several of the protocols need addenda to strengthen the process, but no recommendation for protocol rewrites. Several members questioned if all the comments received were addressed in the report. Anecdotal evidence suggested perhaps not, but presenter thought the report covered everything received. Another comment was that several of the responses to comments seemed to contradict one another. Several group members promised to review further and submit further comments within the next several days. Presenter is trying to finalize this report by end of October.
- Discussion of new protocol submissions to ad hoc review committee. Apparently only one new submission. Presenter deferred to Ken Wilcox. Ken said there are several issues that need to be addressed in the protocols, one being multiple testing and averaging; another is manifolded tanks.
- The question of third party testing in Europe came up. Does this process need to be reviewed by the ad hoc committee?

FRAMATOME-ANP (Peter Bryce)

- Presentation on LEOS, a system developed and marketed by German/French partnership. System designed to find on-going small leak on submerged or buried pipelines through use of membrane technology, periodic monitoring, and semi-conductor based sensors.

LOW PRESSURE VACUUM MONITORING SYSTEM (Ev Spring)

- Presentation on Vigilant system including use of parabeam or liners to establish interstice and then monitoring system with vacuum collection system. Presenter also expressed ideas on value of leak prevention vs leak detection.

STATISTICAL BASIS FOR SIR (Dr. Warren F. Rogers)

- Discussion of statistical theory and application in Statistical Inventory Reconciliation. Presentation included derivation of Minimum Detectable Leak (MDL) and Threshold (Th), and Calculated or Measured Leak Rate. The relationship between these terms and the leak detection method performance standard was also presented. Presenter posed rhetorical question as to what quantity of product was acceptable in terms of a release. Presenter also referenced addendum to SIR Protocol (1994) as a source for review of these concepts.

Adjourn for lunch.

10-11-01 – Afternoon Session

Attendees: Work group members plus Ken Wilcox (KWA), Jim Clemenson (EPA R-7), Tom Collins (Ia), Kathy Skaggs (Co), Stephen Kent (Ky), and Dennis Rice (Al).

The Work Group asked Ken Wilcox to attend the first part of the afternoon session to continue discussion of some of the protocol and testing issues raised during the morning session and at the spring meeting.

DISCUSSION OF ISSUES w/ Ken Wilcox:

- Averaging results to improve system performance. Perhaps shouldn't rely on test data alone to document system performance if averaging is used. Need independent verification of calculations. Need more than theoretical calculations to move system performance ahead. This should be addressed in the protocols as either acceptable or unacceptable.
- Manifolded tanks. Does the entire test regimen have to be done again to add capability for manifolded tanks to a system? With ATGs and a probe in each (non-leaking) tank, would expect that the two calculations would sum out to zero, but testing has not proven that to be so. Ken Wilcox has not been able to figure out why this is so. Reviewing evaluation of performance for a single tank is distinctly different from evaluation of manifolded tanks. Ken Wilcox was asked if combining data made sense…he said that it looked to be OK. He presented written proposal to Shahla on how to make this work. Tim to distribute this. (see action item for Tim).
- Accepting European certifications. Perhaps should be accepted for "unique" or "new" technologies. Our guidance says tested by an "accepted" protocol. Can we say the European process is "accepted"? Appears that the certifying body looks at documentation and says, "This looks OK." Is the European method comparable to the one we use now? How do we determine this? (See action item for Shahla.)
- F-test and T-test comparisons under present protocols. Sometimes get some odd conclusions using these tools. Sometimes, the comparisons do not match, but both methods perform very well. On the other hand, sometimes rather poor methods get approved because they match up nicely on the tests.

<u>Discussion of Presentations</u>

PROTOCOL PROJECT (Quigley):
Some work group members expressed concern over scope and responses in draft report. Concern was voiced that this report would hinder movement toward protocol rewrite. Tim requested Work Group members forward written comments on protocol review project and subject report to him at EPA/OUST.

LEOS (Bryce):
Group members commented on potential for this system in bulk pipeline arena. Could also have application in hydrant fuel arena but costs to retrofit on existing system could be prohibitive.

VIGILANT (Spring):
Presentation on vacuum monitoring and potential to achieve this with retrofit for existing systems was well received. Tim reported that there were already quite a few vacuum system sensors on list. Tim will undertake a review of current vacuum sensor listings (see action items).

SIR Calculations (Rogers):
Group agreed that knowledge of these calculations, how they relate to one another and how they should be used was essential to correctly using SIR as a leak detection method. Within the regulating agencies (states) rule changes addressing this method may be needed to require calculations, correct application, and reporting. Some states already require this.

- Jim Clemenson (EPA R-7) and Tom Collins (IA) presented information on SIR issues in R-7. In one instance the data did not support the result reported on the SIR report. It appeared the report had been changed to show "pass". They spoke of other similar instances as well as reports that did not supply the data for review. Members discussed these issues and agreed regulatory agencies had to review application of SIR as method and catch those using the method incorrectly.

- Carolyn Skaggs of Colorado shared several guidance documents their program has produced. She invited Work Group members to review and comment as appropriate.

Preview of topics for next morning.

Adjourn

10-12-01 Session

Attendees: Work Group plus Stephen Kent (KY), Carolyn Skaggs (CO), Dennis Rice (AL), and Tom Collins (IA).

<u>New and Old Business Items</u>

- Jon Reeder proposed to set up and manage web site for NWGLDE. Site will include "hit" count to monitor usage. Group agreed that Jon could use the existing NWGLDE graphic on the site. Members agreed to contribute annually to fund site operation. After much discussion of ins and outs of site management, group agreed to have Jon move forward with development and initial page posting. Jon to coordinate with group as he progresses through project. Agenda item for next meeting will include management process/structure for the site.
- Noted that sensors for Containment Solutions tanks w/brine were not on list. Tim to contact.
- Discussion of Campo-Miller PL400 line test unit used with electronic line leak detector. No further action.
- Line leak detector installation location (especially electronic llds). Should list define location for installation or capabilities of equipment based on location along piping run? After much discussion, decided to leave as is.
- Use of ATGs for leak detection on used oil tanks (Florida situation). Someone mentioned a KWA study that showed ATGs worked successfully in used oil tanks up to 6,000 gallons. Manufacturer had stated that in this instance, because the oil was a known source, the ATG could be programmed successfully. Michigan does not accept ATGs for monitoring used oil. Also, in Michigan, trying to meter used oil into tank and use SIR was not successful. No further discussion.
- Discussion of inspector dilemma when new software and/programming changes have occurred in equipment. For example, ATG board updates; system accepted with dispenser information link, but not installed with same. Additionally, verifying the on site programming for some equipment may be critical to validating leak detection compliance.
- Group discussed the protocol development process and decided to change wording in the "Letter to Vendors" on the list to reflect that the ad hoc protocol development committee was one of the methods that could be used.
- Group discussed upcoming Power Point presentation that Curt and Shahla will use to describe work group function and use of the list.

- Discussion of Tracer method. Will the compound exit the tank if water is flowing into the tank? John to get Tracer reply to the question (done 10-18-01).
- Next meeting will be at Nat'l Conference in Kissimmee, FL. John Kneece to take notes.

Team Meetings and Adjournment