



*Office of Laboratory Licensure,
Certification & Training*

3443 N Central Avenue, Suite 810
Phoenix, Arizona 85012
(602) 255-3454
(602) 255-1070 FAX
Technical Support Hot-Line 1-800-592-0374

Jane Dee Hull, Governor
James R. Allen, MD, MPH, Director

DATE: February 10, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Acting Bureau Chief
SUBJECT: Information Update #1
NOTE: If any problems occur with this web site, please call 1-800-952-0374 or (602) 255-3454 extension 205, 221 or 222. Thank You.

1. "Field Screening Methods for Hazardous Wastes and Toxic Chemicals", February 22-24, 1995, Tropicana Hotel, Las Vegas, Nevada.

Advance registration cost = \$250.00, Deadline February 3, 1995. On-site registration cost = \$290.00.
Contact person for registration: Eric Koglin, (702)798-2432

2. The Arizona State Laboratory Services is co-sponsoring a training forum with the Arizona Laboratory Association, March 23-24, 1995 at the Biosphere 2, Oracle, Arizona. The focus of this training is instrumentation & related methods. The Hewlett Packard GC/MS, Perkin Elmer ICP 3000 XL and the Biosphere Laboratory Information System (BLIS) will be demonstrated. Mr. Llewellyn Williams is the keynote speaker and will discuss the importance of QA/QC in the laboratory. Mr. Ted Martin and Ms. Jean Munch of the USEPA will be joining us for a Question & Answer session on methods related to these instruments.

The registration fee for this workshop will be approximately \$75.00. Brochures will be mailed out to all the laboratories soon. Initially, registration is limited to one person per laboratory. Please make your own arrangements for hotel accommodations, if needed, as soon as possible at Biosphere 2 (602) 896-6222 or hotels nearby. Come join us for a fun educational update. For information regarding registration contact Charmaine D'Souza at (602) 255-3454.

3. Copies of the Final Update of the Third Edition of SW-846, effective January 13, 1995, are available by calling (202) 783-3238 at a cost of \$319.00. The GPO document number is 955-001-00000-1. This update adds new and revised methods.
4. Federal Register Publication, dated December 5, 1994, Vol 59, No.232 / Rules and Regulations, containing updated versions of previously approved methods in drinking water can be obtained by calling (800) 426-4791.

5. "Technical Notes on Drinking Water Methods" (a publication from EPA regarding the above modifications, clarifications, options or improvements to the approved methods can be obtained by calling (513) 569-7586.

6. 418.1AZ QUESTIONS

- **QUESTION:** "In regard to Method 418.1AZ how are the final results to be reported, on an 'as received' basis or on a 'dry weight' basis? The method does not specify."

RESPONSE: Section 9 of the method allows for reporting of results on either an 'as received' or 'dry weight' basis. When an 'as received' basis is being reported, section 9.1 of the method requires that "the moisture content is reported separately."

- **QUESTION:** "If reporting on an 'as received' basis, the moisture content would seem to be an extraneous step."

RESPONSE: When reporting on an 'as received' basis, the moisture content is a required step and the result must be reported on the final report.

- **QUESTION:** "Why not allow the analyst to make a judgement call on whether to do a moisture determination based on whether the sample is free-flowing vs. an obvious mud?"

RESPONSE: A visual observation is not quantitative. The method requires that an analytically determined moisture content be reported on the final report.

- **QUESTION:** "How much QA/QC will be required to go along with this very empirical 'moisture' determination? Hopefully there will be no need for duplicates or reference standards, since none exist."

RESPONSE: The method does not specify any QA/QC requirements for this gravimetric determination. We suggest that the lab follow good laboratory practice guidelines in determining how much QA/QC it will use in this determination.

- **QUESTION:** "If moisture content needs to be determined, can disposable aluminum weighing pans be substituted for glass beakers?"

RESPONSE: An alternative weighing vessel may be used if it will remain inert throughout the determination.

- **QUESTION:** "Moisture determinations on samples found to be ND (<20 mg/kg) would be redundant and could be omitted. Correct?"

RESPONSE: The moisture content will yield a higher TPH value when converted to 'dry weight'. The required reporting level of 20 mg/kg must be met after the moisture content is taken into consideration.

- **QUESTION:** "Because of (the previous question) above, all reporting of data should be on an 'as received' basis."

RESPONSE: The method allows for reporting on an 'as received' basis but if one chooses to do so then one must also include the moisture content on the final report.

7. If you have any questions regarding the Updates, or if you have any technical questions that need clarification, please call or send [e-mail](#) to Prabha Acharya, Program Manager, Technical Resources and Training at the Laboratory Licensure. A [table of contents](#) to all the Information Updates published is also available.

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JANE DEE HULL, GOVERNOR
James R. Allen, MD, MPH, DIRECTOR

DATE: February 16, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Bureau Chief
SUBJECT: Information Update #2
NOTE: If any problems occur with this web site, please call (602) 364-0720. Thank you.

1. We just received announcement of the EPA's annual Quality Assurance meeting in San Antonio, TX. The meeting - 15th Annual National Meeting on Managing Environmental Systems - will be held March 27-31, 1995 at the San Antonio Convention Center. The theme of the session is "Quality Assurance (QA) in a Time of Reinventing Government." There will be approximately 25 papers presented on topics such as performance-based methods, immunoassay techniques, EPA's environmental technology initiative, emerging measurement and monitoring technologies, the use of statistics to meet DQO's, and qualification of existing data. For additional information contact QAMS at (202) 260-7353. There is no registration fee for this meeting.

2. FAX communication:

By now you should have received two of our "Information Updates." This new program is designed to increase communication between the environmental laboratory community and the State Laboratory. We have programmed "calling groups" on our FAX machines to make the weekly "Information Updates" as rapidly and widely disseminated as possible. Please keep us informed of any changes in FAX numbers so that we may always remain current.

3. We are interested in your input on the type of information you want to receive.

How are we doing so far?

We intend to try to keep you informed of-

- any training events that we hear about

- updates from the Federal Register
- methodology changes/approvals from EPA
- references of journal articles that you might be interested in reviewing

Please inform us of any information that you have that would be of interest to the rest of the environmental community. We will include these items in future updates.

4. The system works!! In our February 10, 1995 FAX we gave a number for the U.S. Printing Office as (202) 783-3238. One of our labs tried calling and received a new number for the printing office. They sent the new number to us -- Here it is -

Phone (202) 512-1800 FAX (202) 512-2250

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Jane Dee Hull, Governor
James R. Allen, MD, MPH, Director

DATE: February 24, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Acting Bureau Chief
SUBJECT: Information Update #3
NOTE: If any problems occur with this web site, please call 1-800-952-0374 or (602) 255-3454 extension 205, 221 or 222. Thank You.

1. EPA SW-846:

Update II to the Third Edition of SW-846 (60 FR 3089) adds 31 new methods and revises 30 others. Two methods proposed in the initial rule are not being promulgated, since further evaluation showed they provided poor results. Update II is the first comprehensive review approved since the agency revamped its regulatory process. The new guidelines eliminate unnecessary steps in the internal review process which had previously added up to months of delays. With Update II completed, the next revision, detailing between 90 and 100 new and revised testing methods, is now set for the spring of 1995.

Tables from this article are attached.

2. To obtain copies of SW-846 Update II:

GPO Document # 955-001-00000-1
Cost: \$319.00
U.S. Printing Office (202) 512-1800
FAX (202) 512-2250

3. To request information on SW-846 Update III when it is released:

Starting with this issue, whenever we write a story about a report or study, we will make it available in its entirety. We will assign the document a number and nominal price. All you have to do is call toll-free 1-800-420-5764 and follow the voice instructions. Subscribers will be asked for their customer number,

which appears on your mailing label. Nonsubscribers may enter a credit card number. The report will be faxed, sent by mail or expressed overnight. We are kicking off the service with the following document:

- o Proposed Third Update of SW-846 Third Edition: No. 901951001, p. 1-6, \$15 (subs) \$20 (nons). Environmental Laboratory Washington Report

4. Solvents:

The EPA has issued testing consent orders for 7 of 10 widely used solvents under an agreement with chemical firms that have agreed to perform neurotoxicity tests on the chemicals. Under a consent agreement with the EPA, companies agreed to conduct neurotoxicity testing with acetone, n-amyl acetate, n-butyl acetate, ethyl acetate, isobutyl alcohol, methyl isobutyl ketone, and tetrahydrofuran. The agency proposed testing requirements for all seven substances in 1991 and the companies challenged the rule. As part of the settlement, EPA modified the testing program stands and reporting requirements. For more information contact Susan Hazen at (202) 554-1404

5. If you have any questions regarding the Updates, or if you have any technical questions that need clarification, please call or send [e-mail](#) to Prabha Acharya, Program Manager, Technical Resources and Training at the Laboratory Licensure. A [table of contents](#) to all the Information Updates published is also available.

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JANE DEE HULL, GOVERNOR
James R. Allen, MD, MPH, DIRECTOR

DATE: March 2, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Bureau Chief
SUBJECT: Information Update #4
NOTE: If any problems occur with this web site, please call (602) 364-0720. Thank you.

A note to readers regarding the frequency of the INFORMATION UPDATE:

We would like to convey pertinent information to the environmental laboratory community as quickly as possible, but it may not be possible every week. It is expensive. If the information is important and immediate, it will be sent by FAX. If it is less timely, it will be summarized in the e-LABorator. Please FAX us any good information that you happen to come across or if you have any concerns that we should address. We will convey that to the laboratory community through the FAX or the e-LABorator.

1. There have been several inquiries regarding the holding time for EPA 418.1 for waste water for the State of Arizona. The method does not specify. The holding time is 28 days.
2. A Technical Subcommittee for VOC's in Soil (formed of staff of the State Laboratory, ADEQ and representatives of environmental labs) is conducting literature research to determine the best sampling technique for soil samples with methanol preservative.
3. ACCESS EPA, revised 1993 edition, the new Environmental Directory, completely updated in 645 pages, is available from:

Government printing Office
710 North capitol Street, NW
Washington, DC 20401
Phone: (202) 783-3238
Fax: (202) 512-2250
Telex: 710-822-9413
GPO number: 055-000-00437-4
Price: \$24.00

NTIC
5285 Port Royal Road

Springfield, Va 22161
Phone: (703) 487-4650
Fax: (703) 321-8547
Telex: 89-9405 or 64617
NTIS number: PB93-170041
Price: \$24.00

ACCESS EPA available On-line through the following:
EPA On-line Library System (OLS) is available by:
Dial in: (919) 549-0720: "IBMPSI"/"OLS"/"A";(300-9600 baud;even parity;1/2
duplex;7 databits;1 stop)
Internet: telnet epaibm.rtpnc.epa.gov;"Public Access"/"OLS"/"A"
EPA Gopher Server: gopher.epa.gov;"EPA Information Locators"
GPO Federal Bulletin Board System:(202) 512-1387
For additional information contact ACCESS EPA (202) 260-2049

4. Beginning with the next FAX, we will be addressing the different issues regarding the method changes for drinking water. The next FAX will address VOC's.

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Jane Dee Hull, Governor
James R. Allen, MD, MPH, Director

DATE: March 9, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Acting Bureau Chief
SUBJECT: Information Update #5
NOTE: If any problems occur with this web site, please call 1-800-952-0374 or (602) 255-3454 extension 205, 221 or 222. Thank You.

1. Some highlights of method changes in VOC's in drinking water:

- Packed column methods for Volatile Organic Compounds (VOCs) and trihalomethane (THMs) will be withdrawn on July 1, 1996.
- Alternate sorbents to trap VOCs are permissible for methods 502.2 and 524.2 provided all quality assurance criteria specified in the method are met. Purge time, purge gas flow rate, and the desorption time specified in the method may not be changed.
- For EPA methods 502.2, 524.2 and 551, the samples must be acidified at the time of collection but after they have been dechlorinated. Acidification must not be delayed until the samples are received in the laboratory. Dechlorination is required for TTHM analysis only. Laboratories must carefully follow the preservation procedure described in each method especially the order in which the reagents are added to the sample. EPA strongly recommends the use of sodium thiosulfate as the dechlorination reagent, except when vinyl chloride and other gases are measured with a mass spectrometer in which case, ascorbic acid is recommended.

2. The National Laboratory Training Network celebrates National Laboratory week by offering a free teleconference on "Cryptosporidium: The Milwaukee Outbreak" on April 20, 1995 from 11:00 am to 1:00 pm. Please contact Charmaine D'Souza for location of presentation in Phoenix (602-255-3454) or other out-of-state presentations.
3. The State Laboratory received a memo from Alan Stevens, Director of the Technical Support Division of the EPA Office of Ground Water and Drinking Water. The memo addresses preservation of samples for total metals analysis. EPA currently recommends that samples be acidified with nitric acid after receipt in the laboratory to avoid problems in the field and with transportation. A statement made in 40 CFR 141.23(k)(4) has been interpreted by some to require unacidified samples to be shipped with ice. The purpose of this memo is to clarify this concern.

The EPA does not require icing of these samples, because EPA no longer believes icing should be necessary and because icing places an undue burden on the utilities. The December 5, 1994 Federal Register (59 FR 62456) under CFR 141.23(k)(1) specifies analytical methods including the 1994 versions of EPA Methods 200.7, 200.8 and 200.9 that should be used for the analysis of various metals. Paragraph 8.3 states

" ... Preservation may be done at the time of collection, however, to avoid the hazards of strong acids in the field, transport restrictions, and possible contamination, it is recommended that the samples be returned to the laboratory within two weeks of collection and acid preserved upon receipt... Following acidification, the samples should be mixed, held for sixteen hours, and verified to pH<2 ... prior to ... analysis..."

If you have questions about this guidance contact the Laboratory Licensure at 1-800-372-3454.

4. Environmental Technical Support Hot-line/1-800-372-3454:

This special phone number has been established as a direct communication with the State Laboratory Environmental Licensure program. Please use it to share information, ask questions, request clarifications; in short, all communications with the staff of Environmental Laboratory Licensure.

5. If you have any questions regarding the Updates, or if you have any technical questions that need clarification, please call or send [e-mail](#) to Prabha Acharya, Program Manager, Technical Resources and Training at the Laboratory Licensure. A [table of contents](#) to all the Information Updates published is also available.

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JANE DEE HULL, GOVERNOR
James R. Allen, MD, MPH, DIRECTOR

DATE: March 17, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Bureau Chief
SUBJECT: Information Update #6
NOTE: If any problems occur with this web site, please call (602) 364-0720. Thank you.

1. EPA is in the process of printing the approved version of Update II of SW846. It will be mailed out to the subscribers sometime in March or April of 1995. It will be printed on white pages (the existing yellow paged document of Update II is a draft and is not approved). There are some changes in the final version from the draft. If you have already paid for the draft version of the Update II then you do not have to order again. The revisions of Update II will be automatically mailed to you at no additional cost. In summary you have to pay for each Update only once!
2. Workshops that are sponsored or co-sponsored by ADHS are not limited to the ALA (Arizona Laboratory Association) members or the licensed laboratories. They are open to the interested general public.
3. The eleventh annual EPA sponsored WASTE TESTING & QUALITY ASSURANCE SYMPOSIUM is being held from July 23-28, 1995 at Washington, DC.
4. Some additional highlights of method changes in VOC's in drinking water:
 - A. If 502.2 is used to measure only halogenated analytes such as trihalomethanes, the use of a photoionization detector is not required.
 - B. Clarification or corrections regarding 524.2 (Rev 4.0) and 502.2 (Rev 2.0):

EPA is changing some instructions in Quality Control and Calibration sections that may be conflicting or confusing.

1. Initial Demonstration of Capability must be between 80-120%.

2. Continuing Calibration Checks must be between 70-130%.
3. Laboratory Fortified Blank (LFB) must be within 70-130%. Since the Continuing Calibration Checks (CCC) and the LFB are made the same way, the LFB may also be used as CCC and the results of the LFB are added to the ongoing control charts.
4. A Lab Reagent Blank must always be analyzed with each batch. A Field Reagent Blank analysis is only required when contamination is detected in the compliance sample.
5. Calibration; Initial calibration is required before any samples are run. Continuing Calibration Checks are run at the beginning of every workshift, but no less than every 12 hours for 524.2 and one in every 20 samples or one per batch for 502.2.

5. **THIS IS A NOTICE TO ALL THE LICENSED LABORATORIES:**

Beginning this date, the provision of the following Statute will be strictly followed:
36-495.09. Suspension, revocation or denial of license; hearing

- A. Pursuant to title 41, Chapter 6 the director may deny, revoke or suspend the license of a laboratory if its owners, officers, agents or employees do any of the following:

....

2. Issue or cause to be issued a report on environmental laboratory work performed in another laboratory without designating the name and address of the laboratory that performed the test.

6. The State Laboratory received a memo from EPA's Office of Ground Water and Drinking Water, Technical Support Division regarding several up-coming meetings.

EPA is launching a major initiative to improve the nation's drinking water, while at the same time reducing regulatory burdens. Between March and April of 1995, initial meetings will be held with these stakeholders to provide EPA with a listing of ideas, suggestions, options and recommendations for eight subject areas.

The following are some of the meetings;

- A. "Analytical Methods", on April 5, 1995 from 9:00 am until 4:00 pm in Cincinnati, Andrew W. Breidenbach Environmental Research Center, 26 West Martin Luther King Drive. Specific issues to be addressed include performance-based methods, quantification of contaminants in water, screening methods, status of analytical methods research, laboratory certification, and opportunities for integrating methods across Agency programs. Contact person, Dr. Herbert Brass at (513) 569-7936 Fax (513) 569-7191
- B. "Scientific data needs" on March 30, 1995 from 1:00 to 4:00 pm at the EPA Auditorium, 401 M Street, S.W., Washington, D.C. 20460. Contact person, Ben Smith at (202) 260-3026.

- C. "Source water protection", on March 23, 1995 from 1:00 to 4:00 pm at the Holiday Inn Capitol, 550 C. Street, S.W., Washington, D.C. 20024. Contact person, Bob Barles at (202) 260-7077.
- D. "Small systems capacity building" on March 29, 1995 from 2:00 to 5:00 pm at the Holiday Inn Capitol, 550 C Street, S.W., Washington, D.C. 20024. Contact person, Peter Shanaghan at (202) 260-5813.

The above mentioned public meetings can be attended by contacting the specific person mentioned. There is a limited number of teleconferencing lines available. We are contacting EPA to see if we can get a teleconferencing line, please contact us if you are interested in the teleconference.

- 7. If you have questions regarding any "Information Updates" please contact Prabha Acharya at 602-255-3454 or 800-372-3454.

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JANE DEE HULL, GOVERNOR
James R. Allen, MD, MPH, DIRECTOR

DATE: March 31, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Bureau Chief
SUBJECT: Information Update #7
NOTE: If any problems occur with this web site, please call (602) 364-0720. Thank you.

NOTE TO LAB DIRECTORS: PLEASE DISTRIBUTE THESE UPDATES TO YOUR STAFF. THESE ARE MOST BENEFICIAL TO BENCH CHEMISTS.

1. Arizona Department of Environmental Quality, UST Section, has adopted a new site characterization guidance effective March 20, 1995. This new guidance sets a holding time limit of 72-hours between **sample collection and sample extraction** for soil samples to be analyzed for VOC's as part of the site investigation to determine the extent of contamination. The extraction holding time applies to those samples which the consultant believes will define the deepest limits of contamination in soil, and therefore demonstrate that the site does not impact ground water. If this 72 hour limit is exceeded, then ADEQ may not consider results below laboratory reporting limits (results that are none detected) to be valid.

ELAC Technical subcommittee is addressing this issue and considering methanolic field preservation as an alternative to 72 hour extractions. We will keep you informed of the subcommittee's progress through the UPDATES.

2. Clarification regarding acidification of water samples for metal analysis (Information Update, March 9, 1995):

The acidification of water samples done after the samples arrive at the laboratory is applicable to drinking water only and does not apply to waste water and RCRA water.

3. Some of the highlights in the "Technical Notes" regarding metal analysis in drinking water:

- A. The samples for metal analysis (Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium,

Mercury, Nickel, Selenium, Thallium), must not be filtered prior to either sample digestion or "direct analysis." Samples are acid preserved with nitric acid to pH less than two, held for 16 hours, and the pH verified to be less than two before sample processing is started. In addition, the turbidity of the acidified sample must be measured with an approved method after preservation is complete. If turbidity is greater than 1 nephelometric unit (NTU), sample digestion is required using the digestion procedure described in the approved method. If the acid preserved sample contains turbidity less than one NTU, the sample may be analyzed by "direct analysis" without digestion. However, irrespective of the turbidity of the sample, when determining mercury by cold vapor atomic absorption, antimony, arsenic, or selenium by gaseous hydride atomic absorption, sample aliquots must be digested prior to analysis. For the determination of arsenic and selenium by SM 3114B, perchloric acid digestion procedure is not required by EPA and should be avoided, because of potential danger when using perchloric acid, and because a special fume hood is required.

- B. For the determination of chromium by graphite analysis, one mL of 30% hydrogen peroxide should be added to 100 mL of calibration standards and the samples, prior to the analysis. If calcium is present in the chromium sample at concentrations ranging from 10 to 50 mg/L, use of matrix modifier, magnesium nitrate is highly recommended.
 - C. For graphite furnace determinations of selenium when nickel nitrate (Ni conc. at 0.1%) is used as the matrix modifier, two mL of 30% hydrogen peroxide per 100 mL of sample or standard should be added prior to analysis. If the digestion of the sample is required, hydrogen peroxide is added to the samples at the time of digestion. Nickel nitrate is added to the aliquot of the processed sample and the calibration standards at the time of analysis or may be added directly in the furnace (20 ug per 20 uL injection).
 - D. For cyanide analysis by 335.2, EPA recommends to use distillation procedure from Standard Method (SM 4500-CN-C) instead of EPA 335.2 because the distillation procedure in EPA 335.2 has problems associated with it. The sodium hydroxide absorber solution final concentration must be adjusted to 0.25N before colorimetric analysis.
- 4. The training Forum at Biosphere 2, sponsored by the Arizona State Laboratory Services and the Arizona Laboratory Association, was a big success. There were 74 attendees and several positive comments were received from them. This is being proposed as an annual event and we look forward to seeing you next year.
 - 5. If you have any questions regarding any "Information Updates" please contact Prabha Acharya at the above numbers. We are experiencing some problems with our 800 number, and are in the process of getting it fixed. We apologize for the inconvenience.

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Environmental Laboratory

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[E-Mail: acharyp@azdhs.gov](mailto:acharyp@azdhs.gov)



Arizona
Department of
Health Services

Information Update

December 22, 1995

Update #21

1. Several of the licensed environmental laboratories have commented on not being able to use palladium as a modifier when analyzing for arsenic or selenium by graphite furnace in wastewaters for NPDES compliance. Palladium nitrate is one of the acceptable modifiers listed in Method 3113B and this method is approved for both arsenic and selenium in wastewaters (40 CFR, part 136.3, Table 1B). The inclusion of this modifier can be found in "Standard Methods, 18th Edition Supplement". This method is also approved for arsenic and selenium in drinking waters (Technical Notes, October 1994).

Please be certain that your lab is certified for Method 3113B for each parameter in the matrix you wish to analyze (wastewater or drinking water) before using this method.

Standard Methods, 18th edition supplement, can be ordered from:

AWWA Bookstore

6666 West Quincy Avenue

Denver, Colorado 80235

Phone: 1-800-926-7337 or (303) 794-7711

Fax: (303) 794-7310

PLEASE NOTE THAT EPA 200.9 IS NOT APPROVED FOR THE TESTING OF WASTE WATER FOR NPDES COMPLIANCE TESTING, BUT IT CAN BE USED FOR THE TESTING OF WASTE WATER FOR NON-COMPLIANCE SAMPLES.

2. Following is an outline of the quality control requirements for Method 200.9, Revision 2.2, EMMC version (1994), in drinking water. This outline may not include all the requirements of the method and please be sure to carefully review the whole method before running samples.
 - A. Initial demonstration of performance must be completed for all the parameters. This includes the determination of the linear dynamic range and the Method Detection Limits (MDLs). See section 9.2.
 - B. . QCS, Quality Control Sample (a secondary source sample) must be within +- 10%. See section 9.2.3.
 - C. MDLs should be determined annually, or whenever in the judgement of the analyst, a change in analytical performance caused by either a change in instrument hardware or operating conditions would dictate they be redetermined. See section 9.2.4.
 - D. MDLs must be sufficient to detect analytes at the required levels according to compliance

monitoring regulation. See section 9.2.4. See also section 1.2.

- E. Analyze one laboratory reagent blank per batch of 20 or fewer samples. See section 9.3.1.
- F. Analyze at least one laboratory fortified blank with each batch of samples. Acceptable range is 85-115%. See section 9.3.2.
- G. A calibration blank must be run after every calibration, after every 10 samples, and at the end of the sample run. See section 9.3.4. See also comments (aa) from Ted Martin below.
- H. The calibration blank should always be less than IDL, Instrument Detection Limit (section 3.5), but greater than the negative signal. See section 9.3.4.
 - I. A mid level calibration standard IPC, Instrument Performance Check, must be run after every calibration (+- 5% acceptable), and after every tenth sample and at the end of the sample run (+- 10% acceptable). See section 9.3.4.

Instead of running an IPC standard some laboratories are running a QCS. If a QCS is being run in place of IPC, then the same criteria of +- 5% after the initial calibration must be met. Subsequent analysis of QCS should be within +- 10%. See also comments (bb) from Ted Martin below.
- J. All samples must demonstrate a background absorbance of less than 1.0, before the test results obtained can be considered reliable. See section 9.4.1.
- K. Analyze a laboratory fortified matrix for a minimum of 10% of the routine samples. Acceptable range is 70-130%. See section 9.4.2 and 9.4.3.
- L. The added analyte concentration for lab fortified matrix, must be the same as that used in the laboratory fortified blank. See section 9.4.2.
- M. After the warm up period but before the daily calibration, the instrument stability must be demonstrated by analyzing a standard solution with a concentration 20 times the IDL, at a minimum of five times. The resulting relative standard deviation (RSD) of the absorbance signals must be <5%. If the RSD is >5%, determine and correct the cause before calibrating the instrument. See section 11.4.3. See also comments (cc) from Ted Martin below.
- N. Determined sample analyte concentrations that are 90% or more of the upper limit of calibration must either be diluted with acidified reagent water and reanalyzed with concern for memory effects or determined by another approved test procedure that is less sensitive. See section 11.4.9. See also comments (dd) from Ted Martin below.
- O. Palladium-magnesium modifier must be used. See section 7.7.
- P. 95% argon and 5% hydrogen gas mixture must be used. See section 6.1.4.

Following is an outline of comments from a phone conversation with Ted Martin, USEPA/Cincinnati:

- AA. The calibration blank is required to verify that the instrumental baseline is not drifting during the analysis.
- BB. The control sample may be biased either slightly high or low. If the instrument drifts during the analysis using the control, it may cause the results to go out of control earlier than it should have or it may cause the results to stay in control longer than it should be. He didn't feel that it would be a major problem if the control sample was biased by 1 or 2 percent.
- CC. This stability check must be performed.

- DD. This section takes into account that the calibration curve extends up to the limit of the linear dynamic range. If the calibration curve is substantially below the limit of this range, then quantification up to the high standard in the calibration curve is allowed.
3. Technical Resources and Training is offering a **FREE** Basic Gas Chromatography workshop. This is being presented by Ms. Jessie Butler, Applications Chemist, Finnigan corporation. Ms. Butler has over 20 years of experience in gas chromatography. This will be held on January 24, 1996 from 9:00 am to 4:00 pm at the Laboratory Licensure office, in the 9th floor conference room, at 3443 N. Central, Phoenix, Arizona 85012. This training will be an overview of gas chromatography. The course will begin with an explanation of the theory of GC covering the principles of separation for packed, Megabore and narrow bore columns. Some historical information will be given on how a solid support is loaded with a stationary phase and how to pack and condition a column or sorbent trap. The importance of the temperature limits of stationary phases and optimization of the parameters for injection with a Megabore versus a narrow bore capillary column will be discussed. Cut away models of inlets will be passed around to demonstrate the various liners available and the importance of guard columns. Special attention will be given to various flow controlling devices available on a gas chromatograph. The presentation will conclude with some tips on keeping your GC "in control" in the '90s. This class will seat 25 people. Seating is on a first come first serve basis. Please call Cristy Finan at (602) 255-3454 for registration.
 4. There will be another **FREE** seminar on "Laboratory Waste Disposal" on February 7, 1996 at the Laboratory Licensure office, 3443 N. Central, Phoenix, Arizona, in the 9th floor conference room, from 9:00 am - 11:30 am. This will be presented by Linda Johnson and Dan Casiraro from the Salt River Project. This presentation will cover an overview of RCRA regulations, laboratory waste streams, waste disposal and laboratory packing. Seating is limited to 35 people. Please call Cristy Finan at (602) 255-3454 for registration.
 5. If you have any questions regarding the Updates or if you have any technical questions that need clarification, please call Prabha Acharya, Program Manager, Technical Resources and Training, at the above numbers.

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JANE DEE HULL, GOVERNOR

DATE: November 15, 1995
SUBJECT: Information Update #20

1. Our office has recently received the two issues of EPA's *Labcert Bulletin* from the Office of Ground Water and Drinking Water, Cincinnati, Ohio.
 - a. The following topics are addressed in the August 1995 issue;
 1. ICR Lab Approval Update
 2. Answers to the questions EPA has received about the 1994 Methods Rule and Tech Notes
 3. Updated Table of Methods *
 4. PCB analyses and Compliance

* Please note the warning in this issue that "if there are any discrepancies between the Table and the 40 CFR, the Code is correct."

- b. The following topics are addressed in the September 1995 issue;
 1. Spotlight on Method 504.1
 2. Data Audits
 3. Microbiology Sampling
 4. Letters to the Editor
 5. Metals Preservation
 6. New Metals Manual
 7. Preservation Table
 8. Resources

If your laboratory would like to have a copy of the *Labcert Bulletins* mentioned above, please send a fax to Prabha Acharya at (602) 255-1070. Please include your mailing address and indicate if you need all the Bulletins or only the specific ones.

- c. Page 4 of August 1995 issue makes a reference to the August 1994 *Labcert Bulletin* which contains the recommendation for improving recoveries of 515.1

analytes by changing the evaporation procedure. Our Office can provide you with a copy of that issue also.

2. A concern was raised by the laboratories about the non-availability of Freon 113 in the near future. ADEQ and ADHS are working together in finding an alternate gas chromatographic method for Total Petroleum Hydrocarbons (TPH). Different Methods are being reviewed and we will keep you apprised of the progress.
3. Technical Resources and Training is presenting a **FREE** workshop on "Auditing Your Lab For Safety" on December 8, 1995 from 9:00 am to 11:00 am at 3443 N. Central, Phoenix, Arizona in the ninth floor conference room. The topics to be covered are:
 - General OSHA guidelines
 - Usage of Personal Protective Equipment
 - Engineering controls
 - Fire safety
 - Emergency preparation
 - Storage of chemicals
 - Proper labeling
 - Secondary containment
 - Electrical compliance
 - Viewing of a video on Biological Safety Hoods

If you are interested in attending, please call Cristy Finan at (602) 255-3454 or send us a fax at (602) 255-1070, to register.

4. If you have any questions regarding the Updates or if you have any technical questions that need clarification, please call Prabha Acharya, Program Manager, Technical Resources and Training, at the above numbers.

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JANE DEE HULL, GOVERNOR

DATE: September 27, 1995
SUBJECT: Information Update #19

1. Nicki Fatherly of Arizona Department of Environmental Quality (ADEQ) requested us to include the following statement in this Update:

"ADEQ Inquiry for Information

ADEQ received a document entitled *Methanol Preservation in the field, Concerns & Alternatives* from an entity calling themselves the Methanol Extraction Committee. This document contained comments and suggestions concerning the proposed modifications to soil VOC sampling methods in the ADEQ QAPP. As there was no cover letter or contact person identified from this group to whom ADEQ can respond, would a representative from that group please call Nicki Fatherly of ADEQ at 207-4411 to further discuss this document. ADEQ is looking forward to reviewing this document. Call us to discuss what type of response the group is expecting".

2. Prabha Acharya had several meetings with Mary Simmerer, Unit Manager, Drinking Water Compliance, ADEQ, to discuss the problems experienced by the environmental laboratories. Following is the excerpts from our discussions and hopefully this information will remove some of the uncertainties that are associated with the Drinking Water Reporting (DWAR) forms.
 - A. The laboratories are no longer required by ADEQ to report the Maximum Contaminant Level (MCL) violations in the drinking water samples within 72 hours. The owners of the utilities are primarily responsible for reporting the MCL violations to ADEQ within 48 hours after the receipt of the analytical reports. One exception being nitrate, which must be reported within 24 hours. The laboratories are ultimately responsible for the test results and they may continue to report all the test results to ADEQ, if the client so desires.
 - B. The *DWAR* reports are rejected by ADEQ for several reasons, the most common ones being:
 1. Incorrect dates
 2. Wrong System ID #
 3. Incorrect Sample Type
 4. Incorrect Source Type
 5. Incorrect Point of Entry #

- C. The corrections can be made on the forms by drawing a single line through it, initialing and dating it.
- D. The *Specimen #* specified in the form is a **unique** 15 character (maximum) alpha numeric code that identifies a particular sample. The specimen # can be the laboratory identification number and each reporting DWAR form requires a unique specimen number. For example, a TTHM and a VOC reporting form **CANNOT** have the same specimen number even though, to the lab, it is under one job/lab number. ADEQ suggests a suffix of some sort be added in this case (i.e., 1234**T** & 1234**V**).

Other suggested suffices are:

Micro specimen # =1234**M**

Organic specimen # =1234**O**

Inorganic specimen # =1234**I**

If the sample analysis results exceed the Maximum Contaminant Level (MCL), this specimen number will be used as the "Original Violating Specimen #" on the Confirmation Sample Report. Different specimen numbers must be used if partial results are sent to ADEQ. One suggestion is to add another suffix to the original specimen number (for e.g., 1234**IA** in place of 1234**I**).

- E. The contaminants Ethylene Dibromide (EDB) and 1,2-Dibromo-3-chloropropane (DBCP) are listed on both the DWAR 3 (SOCs) and 4 (VOCs) forms. The Federal Rule switched their category from VOCs to SOCs in 1993. If EDB and DBCP are being reported as SOCs, **DO NOT** report them as VOCs. The reason for that being the MDLs for EDB and DBCP as VOCs are above their MCLs.
- F. *Date and Time* the lab received the samples in mm/dd/yy hh:mm format (24 hr time).
- G. *System ID* is a unique 5 digit Public Water System Identification (PWSID) number given to the facility. This number must accompany all test results submitted to ADEQ.
- H. *System Name* is the name by which the water system is registered at ADEQ. Always use this name. For e.g., City of Chandler.
- I. *System Location* is the city/area in which the water distribution system (facility) is located.
- J. *General Collection Point* is the general description of the specimen collection point (i.e., kitchen sink, street address). This is associated with *Zone* samples.
- K. *Sample Collection Point/ID* can be one of the following and only one box can be checked per analytical form;
1. *Point of Entry (POE)* into the distribution system, is a sampling point required for certain contaminants. It is represented by a three digit # assigned by ADEQ. All appropriate compliance monitoring must have a POE number and is required for DWAR 2,3,4 forms.
 2. *Well or Surface Intakes* should have the identifying numbers assigned by the Department of Water Resources (DWR) and is required for Radiochemical monitoring.

3. *Plant* (any place the treatment occurs) identifying number is assigned by ADEQ and is required for TTHMs.
 4. *Zone* identifying number is assigned by the water system in consultation with ADEQ and is required for Bactis, Lead & Copper and Asbestos.
- L. *Sample Type* indicates the reason for the specimen collection and a box must be checked off to receive the credit for fulfilling the routine monitoring requirements. If it is a composite sample, list all the *POE #s* or *System ID #s* that make up the samples.
13. *Lab ID Number* is a 4 digit number assigned by the Arizona Department of Health Services (ADHS). For the labs using electronic data reporting, this field in the current version is too short. Do not include the letter "Z" in "AZ" in the lab ID number.
If the laboratories are having problems with the ADEQ forms, call Mary Simmerer at 207-4647. They are willing to solve the problems on case by case basis.
3. If you have any questions regarding the Updates or if you have any technical questions that need clarification, please call Prabha Acharya, Program Manager, Technical Resources and Training, at the above numbers.

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JANE DEE HULL, GOVERNOR

DATE: September 15, 1995
SUBJECT: Information Update #18

1. This is a clarification regarding the acceptable CCV criteria for EPA methods 502.2 and 524.2. EPA's publication titled *"Technical Notes on Drinking Water Methods"* dated October 1994 had a confusing "clarification" regarding the changes in the Quality Assurance Procedures, on page 41. It indicated that for 502.2, the CCV criteria had changed from $\pm 20\%$ to $\pm 30\%$. Subsequently we received conflicting messages from EPA and only recently we have received a clarification that the original $\pm 20\%$ CCV acceptance criteria will be enforced for 502.2. For 524.2 the CCV criteria will remain at $\pm 30\%$. The $\pm 20\%$ criteria for 502.2 will not be enforced by our Office during the period between March 17, 1995 and September 16, 1995. For clarification, March 17, 1995 is the date of the Information Update which stated that the CCV acceptance criteria for 502.2 had changed from $\pm 20\%$ to $\pm 30\%$.
2. There is no specification given in EPA methods for the holding time requirement for cyanide analysis in non-aqueous samples. In the Revision 0 of SW 846 dated 1986, the Table 2-16 in Chapter 2, *Required Containers, Preservation Technique, and Holding times*, addresses only the aqueous samples and does not address the non-aqueous samples, according to a telephone conversation with EPA. The EPA method 9013, for non-aqueous samples, allows 14 days before distillation for the properly preserved samples held at 4 deg C. EPA 335.4, for waste water and drinking water, allows 14 days for the analysis of samples which are properly preserved at pH greater than 12. This Office will therefore, allow 14 days for non-aqueous samples to be distilled and another 14 days after distillation for the completion of analysis.
3. We had several inquiries regarding the holding time for sulfide analysis by 4500-S² because it is not clearly specified in the method. We had a conversation with James O'Dell of USEPA\NERL\ARD regarding this matter. He referred to *Table 1060:1, Summary of special sampling or handling requirements, in Standard Methods, 18th Edition, 1992*. For sulfide determination this table gives the following preservation procedures; Refrigerate; add 4 drops 2N Zinc acetate/100 mL; add NaOH to pH >9 (Zinc Acetate should be added first to the water sample and then NaOH; this necessitates the addition of NaOH in field; refrigerate= storage at 4⁰ C, in the dark). He commented on the fact that the table takes precedence over what is contained in the methods. The reason given for this is that the table is updated on a more frequent basis allowing for minor corrections to the methods to be made more quickly. This, he pointed out is also true for the tables found in the *Federal Register* updating EPA methods. Also note in the same table, *Maximum Storage Recommended* is 28 days\Regulatory holding time is 7 days. He pointed out that the 7 day holding time from the *Federal Register* takes precedence over the recommended holding time by *Standard Method*.

4. The following text was sent to us from Jerry Smit, Deputy Section Manager, UST Section, ADEQ, for inclusion in this Update. If you have any questions regarding this matter, please contact the ADEQ UST Section at 207-4307.

The Arizona Department of Environmental Quality Underground Storage Tanks Section will accept soil analytic results obtained through use of EPA test method 8021 and 8021A in cases where either or both EPA 8020 or 8010 would normally have been used. Where reimbursement from the State Assurance Fund will be sought, the target list should be adapted so that the analytic suites are appropriate for investigation of the regulated substances stored in or released from an underground storage tank. For example, the analytic suite under EPA test method 8020 is appropriate for an investigation of a gasoline release, while the analytic suite under EPA test method 8010 is not normally appropriate. Extra costs for such inappropriate analysis will not be reimbursed.

With regard to synthetic volatile organic contaminants, the newer EPA test methods have larger analytic suites than EPA test method 8010. Until the ADEQ prepares written policy stating otherwise, analysis for synthetic volatile contaminants for waste oil USTs should, at a minimum, test for the analytic suite published under the EPA test method 8010.

In general, the ADEQ UST Section will accept analytical test methods approved by the ADHS that are appropriate for analysis of soil samples for the regulated substance(s) under investigation. Make note that, to ensure full reimbursement of costs through the State Assurance Fund, service providers should use lower cost analytical methods (typically GC) unless site specific conditions warrant use of more expensive methods (typically GC/MS).

5. We have finalized our Environmental Organic Chemistry workshop. Following is a list of the presentations and the names of the speakers.

1. Method Flexibility? Can it be done?

Plenary session to include drinking water and wastewater.

EPA Representative

2. Let's talk about Method 502.2

Presents an understanding of the method and its requirements.

EPA Representative

3. Auto sampler (sparger and vials) and Concentrator

Trouble shooting and maintenance of a purge and trap system.

Tekmar - Technical Support

4. Know your Detectors

Troubleshooting and maintenance of conductivity and photoionization detectors.

Robert E. Fritz, Equipment Technician

5. Methods 525.1/525.2

Extraction procedures and techniques include a breakout session.

Dennis Blevins, Senior Scientist, ANSYS

6. Multi Peak Compounds and Quantitation

Quantitation techniques and recognition of technical mixtures specifically Chlordane, Toxaphene, Gasoline and Diesel.

Jeff Landis, GC Team Leader, Lockheed Laboratories

7. How to get the most out of your chromatography software and learn its applications.

Covers peak resolution, retention time windows, proper baseline drawing, acceptable calibration curves.

Kumar/Pullman/Donohue, Scientists, Lockheed Laboratories and Charlie Koch, Consultant, Hewlett Packard

This workshop will be held November 1 - 2, 1995, at the Grace Inn Ahwatukee. We have determined the cost of this workshop to be \$150.00. If you have not already done so, please call or fax to pre-register. Seats are available on a first come first serve basis. Vendors sponsoring breaks or workshops will have display tables set up in an adjacent room. Detailed brochures will be mailed out in a week.

6. If you have any questions regarding the Updates, please call Prabha Acharya, program Manager, Technical Resources and Training, at the above numbers.

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JANE DEE HULL, GOVERNOR

DATE: August 16, 1995
SUBJECT: Information Update #17

1. This is a notification to all the environmental laboratories who participate in the USEPA-WS proficiency studies that the due date for WS036 has been extended to September 18, 1995. The original date was August 21, 1995. During a phone conversation with Natalie Murff of USEPA, she confirmed that the original date has been extended to the above date. This is because of the delay in sending out replacement vials to the laboratories.
2. If you have any questions regarding the Updates, please call Prabha Acharya, Program Manager, Technical Resources and Training, at the above numbers.

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JANE DEE HULL, GOVERNOR

DATE: August 15, 1995
SUBJECT: Information Update #16

1. This is in reference to the comments of Barry Lesnik, Office of the Solid Waste, (Information Update #11, item #2, dated May 22, 1995), regarding the acceptance limits for CCV for EPA method 8020. Our Office would like to clarify that the Arizona licensed laboratories can continue to use EPA methods 8010 and 8020 with the capillary column technique, until the EPA has withdrawn the packed column methods (which includes the methods 8010 and 8020) or until the Arizona Licensing Rules has removed them as the approved methods. The laboratories can use the acceptance criteria from the Table 3 for CCV, for the capillary column technique also. After the packed column methods are withdrawn (according to EPA it could happen within the next year), the laboratories will have to use the method 8021A in place of 8010 and 8020.
2. Technical Resources and Training is organizing an Organic Chemistry Workshop in Phoenix on November 1 - 2, 1995 at the Grace Inn, Ahwatukee. We need your assistance in order to proceed further with our planning of the workshop. Please review the **preliminary** agenda below, and if your laboratory is interested, fax us a list of the potential number of attendees from your laboratory, so that we can make all the necessary arrangements to accommodate everybody. Presenters will be from the USEPA, manufacturer's technical representatives, and the private sector.

Day 1:

1. METHOD FLEXIBILITY? CAN IT BE DONE?:

Plenary session to include drinking water, wastewater and RCRA methods.

- Can you make changes and still meet compliance criteria?
- What changes can be made with performance based methods?
- What specific documentation is needed when a variance from the actual method is performed?
- What are the minimum QA/QC requirements for method performance?

2. LET'S TALK ABOUT METHOD 502.2:

- How many control charts are needed and how are they generated?
- How are method MDLs determined? Calculated or verified by a low level standard?
- What are the QC criteria, frequency, levels and the corrective actions?

Following this session participants will be able to know the required MDLs and how they are established. An understanding of the QC criteria and the requirements including surrogates and internal standards will be provided. A discussion on the number of control charts and how they are generated will be given.

3. AUTO SAMPLER (SPARGERS & VIALS) AND CONCENTRATOR

Participants will be able to recognize the trouble shooting problems and perform the routine maintenance on auto sampler and concentrator of a Purge and Trap system.

4. KNOW YOUR DETECTORS:

- a. ELCD (conductivity detector)
- b. PID (photoionization detector)

- How can detector problems be recognized?
- How to provide routine maintenance?
- Which specific compounds are detected by each and why

At the end of this session the participant will know how to perform routine maintenance on each detector, trouble shoot, recognize and correct detector problems. The theory behind these detectors will be explained. This session will also include a hands on portion demonstrating the components of the detectors. A brief discussion of setting up the detectors in series for method 502.2 will be presented.

Day 2:

1. METHODS 525.1/525.2:

- What are the extraction procedures?
- How can extraction efficiencies be improved by using the proper technique?
- What are the manual and automated techniques?
- What is available on the market for extraction?
- How can you achieve consistent spike recoveries?

2. MULTI PEAK COMPOUNDS AND QUANTITATION:

- How can consistent baselines be drawn?
- How to determine when specific peaks vs. total area is used for quantitation?
- How to quantitate Toxaphene, Chlordane, Gasoline and Diesel?
- How can you recognize varying technical mixtures?
- Specific case studies - how can these discrepancies be approached?

Following this presentation participants will know how to determine proper baseline integration.

A discussion on choosing specific peaks vs. choosing a total area will be given. A break out session/group activity will include chromatograms for interpretation and discussion. An approach on handling the discrepancies between different lots of technical mixtures, when the fingerprints are different, will be discussed.

3. HOW TO GET THE MOST OUT OF YOUR CHROMATOGRAPHY SOFTWARE AND LEARN ITS VARIOUS APPLICATIONS:

- Peak resolution
- Retention time windows
- Proper baseline drawing
- What is an acceptable calibration curve?

Please call or fax your responses to Charmaine D'Souza or David Winters at the above numbers. This workshop will highlight techniques and helpful hints and will prove extremely beneficial to your laboratory. The estimated registration fees is between \$150 to \$200.

3. If you have any questions regarding the Updates, please call Prabha Acharya, Program manager, Technical Resources and Training, at the above numbers.

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JANE DEE HULL, GOVERNOR

DATE: August 8, 1995
SUBJECT: Information Update #15

1. We had a few inquiries regarding Information Update #13, item #13, dated July 6, 1995. This is regarding the acceptance limits for IPC solution in 200.7 (Revision 4.4, May 1994). The IPC solution immediately following calibration must verify that the instrument is within $\pm 5\%$ of calibration (this hasn't changed from Revision 3.3, April 1991). The subsequent analyses after every tenth sample and at the end of the run must be within 10% of calibration (this criteria has changed from the earlier revision, which had the criteria of $\pm 5\%$).
2. Prabha Acharya recently participated in a review committee for bid proposal responses for the laboratory services. It was noted that some of the laboratories were not providing the necessary information required to assess the bids accurately. If all the laboratories followed a similar format and provided all the requested information, it would make it easier, less time-consuming and bids would be judged fairly by the reviewers. Following are some suggestions for responding to the bids. These suggestions would aid the reviewer in judging the responses fairly.
 - A. Responses should be customized to suit the format given in the bid.
 - B. In responding to the qualification of the staff, the following information is necessary; degree/degrees received and the number of years of related work experience for key personnel, total number of employees in each facility if there is more than one involved in the project, number of employees in each section or program. This information would help the reviewer in assessing the lab's capacity to handle the emergency and routine work associated with the bid.
 - C. In describing the laboratory's capacity to perform the analyses, the information regarding the maximum capacity to handle each analysis in terms of samples per a unit of time (for example 10 samples for 502.2 per day), can be provided in a tabular form. The lab's turn-around-time for both routine and emergency analyses can also be given in a tabular form, keeping in mind the lab's maximum capacity.
 - D. If the labs have branches in several locations, specify which lab will be responsible for coordinating the project, the name and the location for each lab involved in the project, the licensing and the certification information for each of these labs and also a copy of the official Arizona state license and the certified parameters.
 - E. While responding to the work history regarding the experience in the different projects, specify the extent of the project; the number of tests performed in each category for that project in a given time frame and the length of the project.

- F. For an out-of-state lab or a sub-contracted lab, indicate what arrangements can be made regarding the transportation of samples and if transportation is offered free of cost or if there is a surcharge.
 - G. Indication of the tests that are being sub-contracted and the necessary information about the sub-contracted lab.
 - H. The pricing information should be separated into different matrices; drinking water, waste water, hazardous waste and air.
 - I. The Proposal document should be placed in some kind of a binder with a table of contents and each section of the document labelled for easy reference.
 - J. The document should be inspected at the end to make sure that all the necessary attachments are included.
 - K. The reviewer will try to be as objective as possible and this normally means trying to establish a grading scale for each part of the proposal. If all the needed information is not provided, it will lower the laboratory's overall grade. The reviewer must rely on the information provided in the packet for grading purposes.
3. The Technical Resources and Training Office is scheduling a FREE half a day OSHA Safety refresher program. This will be held on September 15, 1995 from 9:00 - Noon and is being presented by the ADOSH office. This will be held in the Training Room at 3443 North Central, 8th floor.

This safety refresher will cover the following:

How to develop a laboratory specific Chemical Hygiene Plan
Responsibilities of a Safety Officer
Information about Material Safety Data Sheets
Employee Training and Information

This training is being provided for QA Officers, Laboratory Managers, Safety Officers or person/s responsible for safety in the laboratory. Spaces are reserved for 35 persons. Please call Cristy Finan at (602) 255-3454 to register.

4. If you have any questions regarding the Updates, please call Prabha Acharya, Program Manager, Technical Resources and Training, at the above numbers.

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Technical Support Hot-Line 1-800-952-0374

JANE DEE HULL, GOVERNOR

DATE: July 14, 1995
SUBJECT: Information Update #14

CLARIFICATION

1. This update is a clarification to the methanolic preservation technique for volatile organics in soil samples, Information Update # 13, item # 15. This is in response to some of the concerns that were expressed to our Office regarding the technique being mandated by the Arizona Department of Environmental Quality (ADEQ).

According to Ms. Karen Heidel, Deputy Director of ADEQ, "Although ADEQ has dedicated staff resources to this effort (*methanolic preservation of soils*), field preservation with methanol is just one sample collection technique encouraged by ADEQ to minimize volatile losses that occur during soil sampling. Alternative sampling techniques recommended by facilities conducting work under ADEQ regulatory programs will be evaluated upon request....."

If there are any further questions regarding this matter, please do not hesitate to call Prabha Acharya, Program Manager, Technical Resources and Training at at the above numbers.

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Office of Laboratory Licensure, Certification & Training

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JANE DEE HULL, GOVERNOR

DATE: July 6, 1995
SUBJECT: Information Update #13

1. Q. Is "Pyrex Accelerated One-Step Extractor Concentrator" manufactured by Corning approved for EPA Method 3520, the liquid-liquid extraction technique?

A. Yes. For pesticides and PCB's the extraction time is reduced from 18 hours to 5.5 hours and for semi-volatiles, the extraction time is reduced from 36 hours to 12 hours. However, the initial demonstration must be done for accuracy and precision to verify that this technique is equivalent to or better than EPA 3520. EPA recommends running seven replicate matrix spikes by both the techniques and calculating % RSD and the spike recoveries for verification.

2. Q. Is "ASE 200 Accelerated Solvent Extractor" manufactured by Dionex approved for the extraction of solid samples in place of EPA Method 3545?

A. No. The draft version of EPA 3545 is still in the process of printing and has not yet been released. This Method will not be approved for at least a year. The proposed EPA Method 3545 is an alternate technique to the soxhlet extraction, which uses pressure and temperature to speed up the extraction process. The extraction time is cut to 12-18 minutes. The solvent extractor manufactured by Dionex has to go through an EPA approval process, after the Method has been approved. However, this extractor can be used for non-compliance testing.

3. Q. Has Key Scientific Products Konfirm been approved for water coliform testing?

A. No. Konfirm should not be used for EPA mandated compliance monitoring.

4. Q. Can EPA Method 200.2 be used as a standard digestion procedure for ICP and GFAA metals analysis for drinking water?

A. Yes.

5. Q. When does the holding time for Volatile Organic Compounds end on the fourteenth day?

A. According to Jean Munch of Drinking Water EPA, the holding time for the Volatile Organic

Compounds analyses in water will end at midnight on the fourteenth day from the day of sampling. The desorption of the analytes must be completed and transferred to the chromatography column before midnight.

6. Q. Is it mandatory to use Fluorobenzene as the internal standard for EPA Method 524.2 or can it be substituted?

A. Fluorobenzene is chosen by EPA as the internal standard for Method 524.2 for two reasons;

a) Fluorobenzene has 100% purging efficiency and hence is a more reliable compound to be used as an internal standard.

b) Fluorobenzene is never found in the environment and, therefore, has no possibility of it being found as a contaminant.

Deuterated compounds can be used as an alternate internal standard but they are more expensive. If substituted, according to Jean Munch of EPA, there must be a good reason for it.

7. Q. Is it acceptable to drop some runs from the MDL study and how does the laboratory determine the spiking amount?

A. MDL study is a measure of precision over multiple days. To begin, determine the estimated MDL which is three or five times the instrumental noise. Spike at one to five times the estimated MDL (spiked level must be 0.5 ppb or lower for 502.2 and 524.2, according to Jean Munch of EPA, Drinking Water) to calculate the MDL. According to Jean Munch, 1.0 or 2.0 ppb is too high for spiking for the MDL study. The laboratory must be confident of detecting the standard that was used to generate the MDL at all times. The standard must be included in the calibration curve. The study must be done over several days. All the runs must be included in the study. It is all right to run more than seven replicates but all the runs must be included in the calculation unless there is an obvious reason for dropping the run/runs. For example, if the last two runs, out of a total of nine runs, were dropped due to unacceptable surrogate recoveries, the first seven runs can still be used to calculate the MDLs but the cause for the drift must be investigated and documented before running more samples.

8. Q. For EPA Method 1311, Toxicity Characteristic Leaching Procedure, is it required to complete the rotation as well as the filtration within 18 +/- 2 hours?

A. No. According to Ollie Fordham of Solid Waste USEPA, only the rotation has to be completed within 18 +/- 2 hours. The filtration has to be completed soon afterwards on the same working day.

9. Q. For metal analyses, can the spiking be done after the acidification of the TCLP extracts?

A. No. According to Ollie Fordham of Solid Waste USEPA, the TCLP extracts cannot be acidified before spiking unless there is a problem with the TCLP extracts (like being basic), that necessitates the acidification before spiking for getting better spike recoveries. In that case the laboratories should do the side-by-side study to demonstrate that the modification works.

10. Q. Is it required to use 5% hydrogen in argon gas mix during dry and char steps in 200.9 (Table 2, Revision 1.2, April 1991, Method 200.9)?

A. Yes, according to Ted Martin of Drinking Water USEPA. It corrects the chloride interference in the samples. The laboratories can continue to use other platform methods until they are withdrawn, if they do not wish to use hydrogen for 200.9.

11. As part of their permit requirement, the City of Phoenix specifies the following method to be used for sulfide analysis in waste water: Analysis must be done in accordance with Standard Methods, 18th edition, 4500-S², as it is the only method that specifically addresses the existence of interferences and how they must be dealt with (4500-S² C for sample pretreatment, 4500-S² D for colorimetric or 4500-S² E for titrimetric). EPA Methods 376.1 or 376.2 can result in both false highs and false lows.
12. The following should clarify the confusion among the laboratories regarding the requirement of digestion for arsenic and selenium analyses in drinking water, if the turbidity is less than 1 NTU. The digestion is not required for arsenic, selenium or any other metal analyses in drinking water if the turbidity of the acidified sample is less than 1 NTU except for mercury and the gaseous hydride analyses. The turbidity must be measured using an approved method and only after preservation is complete. Preservation is complete after the acidified sample has been held for 16 hours. Before sample processing is started, sample pH must be verified to be less than 2. If selenium is being analyzed using SM 3113B, when nickel nitrate is used as the matrix modifier, an appropriate volume of 30% hydrogen peroxide (2-mL of 30% H₂O₂ per 100 mL of sample or standard) must be added to both the calibration standards and sample prior to analysis.
13. The new requirement for acceptance limits for Instrument Performance Check (IPC) in 200.7 (Revision 4.4, May 1994) is +/- 10%. This has been changed from +/- 5% from the previously approved version of 200.7, Revision 3.3, April 1991.
14. The deadline for WP034 was extended until June 30, 1995. This Office received the information late. WS036 is being shipped and the deadline for mailing the results is August 21, 1995. If the laboratories do not receive the shipment by July 5, 1995, call Natalie Murff at 513-569-7196. If additional proficiency sample vials are needed for a particular test, for any of the studies, fax the necessary information (your laboratory identification number, the sample being requested) to Natalie Murff, at 513-569-7115.

Your laboratory is required to analyze proficiency samples for all the parameters certified by the state of Arizona for drinking water and waste water. If you are not receiving all the required sample vials or if you are receiving additional sample vials that are not being tested, please contact your laboratory licensing consultant. We will make the necessary adjustment.

15. This is an update regarding the status of field methanolic preservation of soils for volatile organic analysis: The Arizona Environmental Laboratory Advisory Committee (ELAC) has approved the draft method generated by the ELAC technical subcommittee and at present is being reviewed by Arizona Department of Environmental Quality (ADEQ) staff. Following the approval by ADEQ, the field methanolic preservation will be mandated for all volatile organic analyses in soil. After the approved method has been issued by ADEQ, the Arizona Department of Health Services will offer training in the field preservation technique.
16. We thank the readers for responding to Item #7, Update #12, regarding the test methods. We will forward the information to ADEQ.

17. AWWA teleconference on "Source Water Protection: An Ounce of Prevention" is being held on August 3, 1995 at Phoenix Fire Training Academy, 2430 South 22nd Avenue, Phoenix, Arizona. Call (602) 241-1770 for more information.
18. If you have any questions regarding the Updates, please call Prabha Acharya, program manager, Technical Resources and Training, at the above numbers.

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JANE DEE HULL, GOVERNOR

DATE: June 9, 1995
SUBJECT: Information Update #12

1. The following information has been taken from an EPA Drinking Water Quality Assessment Branch guidance memo on the analysis of Arochlors:
 - A. A PCB-compliance sample should be analyzed first for Arochlors using Method 505 or 508. If an Aroclor is detected, then a duplicate sample must be analyzed by Method 508A and Positive results must be quantitated and reported as decachlorobiphenyl to determine compliance with the MCL for PCBs. Negative Aroclor results from Methods 505 and 508 should be reported as "not detected" along with the laboratory's detection limit for each Aroclor. Method 508 is recommended over 505, because of the better sensitivity of the method due to a larger volume of sample used for the extraction. EPA considers further concentration, from the usual 5-mL, to be an acceptable change.
 - B. EPA recommends that an Aroclor detection limit or pattern recognition level (PRL) be defined as the lowest level at which recognition of the Aroclor peak profile (pattern) is possible. While a method detection limit, calculated according to 40 CFR 136 Appendix B, is a useful benchmark for evaluating and comparing method sensitivity, it may not be an appropriate indicator of the level at which a multi-component mixture like Aroclor can be identified. A PRL of 0.0001 mg/L for each Aroclor will provide the sensitivity necessary to detect a concentration of an Aroclor that would exceed the PCB MCL as decachlorobiphenyl.
 - C. Since Method 505 or 508 is used for identification and detection but not quantitation of Arochlors, calibration curve that is verified daily for each Aroclor is not necessary for compliance monitoring. However, a matrix spike is appropriate because it is important to know that the Arochlors are being recovered. Because it is important to verify Aroclor detection limits regularly, EPA recommends analysis of a different Aroclor standard at the Aroclor PRL on each analytical day. This schedule verifies the detection limit for each Aroclor every seventh analytical day.
 - D. The regulations require the screen of Aroclor first by Methods 505 or 508. Direct analysis by Method 508A is not allowed because Method 508A is subject to false positives.
2. EPA is adding two methods for testing and monitoring solid waste under SW-846. The temperature requirement for pH measurements during testing has been clarified. The rule was effective on April 4,

1995 and will not require new reports or equipment. These methods will be included in SW-846 Update IIB. The two methods are 9040 B (pH Electronic Measurement) and 9045 C (Soil and Waste pH).

3. EPA has released Federal Register publication dated April 4, 1995, titled "Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Technical Amendments; Final Rule". The effective date for this rule is May 4, 1995. No new methods are introduced. The technical amendments are; a) Update and/or correct errors and inadvertent omissions in the references to analytical methods; b) Several ASTM methods are removed and c) Typographical or editorial changes.

The publication can be ordered from USEPA Water Resources Center by calling voice-mail (202) 260-7786.

4. EPA has approved Hach Method No. 8167 for Total Chlorine for drinking water, waste water and effluent analyses.

The Following is a listing of the Hach methods that have been previously approved for effluent waste water analyses:

-COD, Copper, Iron, Manganese, Nitrite, Zinc (in Federal Register)
-BOD, downsized(midi) distillation apparatus for regulated cyanide analysis, Hach Test'N Tube digestion procedure for the analysis of Total Phosphorus.

Our Office is communicating with EPA to get a current listing of all acceptable Hach methods.

5. Our Office received a notification from the Quality Assurance Division of USEPA that the following correction needs to be made, due to the accidental omission of the following text from paragraph 4, p. 4-46 of recent versions of Standard Method 4500-cl-G: (Inserted after section 4.g.)"To obtain total chlorine in one reading, add the full amount of potassium iodide at the start with the specified amounts of buffer reagent and DPD indicator. Read color after 2 minutes."
6. USEPA has developed Method 1664, "N-Hexane Extractable Material(HEM) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM) by Extraction and Gravimetry (Oil and Grease and Total Petroleum Hydrocarbons)". Method 1664 is a Performance Based Method applicable to aqueous matrices (for survey and monitoring programs under Clean Water Act) requiring the use of n-hexane as the extraction solvent and gravimetry as the determinative technique. Alternative extraction and concentration techniques are allowed, provided that all the performance specifications are met. In addition, QC procedures designed to monitor precision and accuracy have been incorporated into Method 1664. This is a draft method and EPA anticipates that notification of a final rule establishing Method 1664 will be published in the Federal Register by July 1995. When this notice appears Method 1664 will be approved. For a free copy of the draft Method 1664 call USEPA Water Resource Center voice-mail at (202) 260-7786.
7. Laboratory Licensure Office met with the staff of APP (Aquifer Protection Program) to discuss some of the problem issues faced by ADEQ which could be easily resolved by better communication between ADEQ and the environmental laboratories. The following issues were discussed:

- A. ADEQ is receiving some laboratory reports with the reporting limits higher than the enforceable Water Quality Standards; the laboratories should ask the clients 1) if the samples being submitted are for regulatory purposes, 2) if certain detection limits are to be achieved, 3) if they are interested in only certain target compounds or all the compounds in the method? If the reporting limits are higher than the WQS or Alert level, ADEQ will reject the data in the future.
- B. The reports ADEQ receives do not indicate if the parameters that are being tested by the licensed laboratories are certified by Arizona; ADEQ would like the laboratories to indicate in the final reports if the parameters or the methods are certified, for example, a footnote saying "The tests performed in this report are Arizona certified".
- C. ADEQ is looking for the laboratories that have the capability to do the following tests:
- 1) Acid generation potential, 2) Acid neutralization potential and
 - 3) EPA 1312.
- Please call Prabha Acharya if you are already doing the above specified tests and the methods being used.
8. The eleventh annual "Waste Testing & Quality Assurance Symposium" is being held between July 23-28, 1995 at The Washington Hilton Hotel and Towers, Washington, DC. The deadline for registration is June 26, 1995. Phone: (202) 872-6286.
9. Hewlett-Packard is willing to organize a 3-day in-depth hands-on training workshop in Phoenix on GC and/or GC/MS Enviroquant software on "Data analysis and reporting". Each participant will be provided with a PC and a printer. The participant should have a basic knowledge of DOS and Windows. The workshop will cost \$990.00/person/workshop. Please call Charmaine D'Souza if you are interested, at (602) 255-3454
10. Water Environment Federation is arranging a conference on "Environmental Laboratories: Testing the Waters" in Cincinnati on August 13-16, 1995. Phone: 1-800-666-0206, and select menu option #4.
11. If you have any questions regarding the Updates, please call Prabha Acharya, program manager, Technical Resources and Training, at the above numbers.

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JANE DEE HULL, GOVERNOR

DATE: May 22, 1995
SUBJECT: Information Update #11

- 1. Mr. John Hsueh, Chemist I, City of Phoenix laboratory, pointed out to us that there is a unit's problem with units in our formula in item No. 5, in the Information Update, dated April 28, 1995. It should be as follows in order for the units to cancel properly.

$$\frac{\text{mg/L} \times \text{Final volume of processed sample in Liters}}{\text{Weight of the wet sample in KG} \times \text{Percent solids}}$$

- 2. Q. What is the acceptance criteria for Continuing Calibration Verification (CCV) for EPA method 8020?

A. EPA method 8020 is a packed column method for the analyses of BTEX. The Table 3 in the method specifies the acceptance criteria for CCV, which is set wider for the packed column analyses. However if a capillary column is being used for the analysis of BTEX, then the method 8021A, which is a capillary column method, must be followed and the acceptance criteria for CCV in the method is set much tighter. The method 8021A refers to the method 8000 for the acceptance criteria, which is +/- 15%. This was conveyed to our Office through a phone conversation with Barry Lesnik of USEPA, Office of Solid Waste.
- 3. Q. Since 8010B is the current updated version of 8010, does that mean the laboratories cannot use 8010 anymore.

A. The ADHS Environmental Rule, that is currently being enforced, has 8010 as an approved method for halogenated volatiles compounds. The Rule is in the process of being revised and the revised Rule will no longer have 8010 as one of the approved methods. Until that Rule is revised, the laboratories can continue to use 8010. As mentioned above in the item #2, EPA is withdrawing 14 packed column methods within a year.
- 4. Q. Is it necessary to generate a calibration standard curve prior to doing Method of Standard Additions (MSA) for the "series of addition method"?

A. Yes, as per the method 7000A, for the results of MSA to be valid, following is one of the limitations that must be taken into consideration:
The slope of the MSA plot should be nearly the same as the slope of the standard curve. If the slope is significantly different (greater than 20%), caution should be exercised.

However, for the drinking water and the wastewater samples, Ted Martin of USEPA, recommends doing "single addition method" rather than "series addition method" due to the many variables involved. If the curve and the standards have been verified, but the spikes are unacceptable, then the matrix interference can be presumed. Such results must be flagged before reported.

5. We received a memo from EPA Region IX with regards to "Status of Monitoring Triggers Rule Activities" for setting new monitoring triggers for drinking water SOCs, VOCs and IOCs. EPA is considering using PQL as a monitoring trigger. Mary Ann Feige of USEPA, Cincinnati, is requesting help from laboratories in acquiring real data for precision and accuracy determinations near the PQL. EPA needs data on low level standards or spiked reagent water acquired while running routine samples (not acquired while running MDLs or from a single day precision). This would be at least 12 data points for each analyte per method generated over a month by spiking 2-5 times per week. If you are interested in providing some data to EPA on DW methods, please contact Prabha Acharya (602-255-3454 or 1-800-372-3454) for a copy of the complete package of the memo or you can contact Mary Ann Feige directly at 513-569-7944.
6. ELAC (Environmental Laboratory Advising Committee) Technical Subcommittee has developed a guidance document on "Sampling VOCs in Soil" for methanolic preservation in the field. It was presented to the ELAC committee members on May 11, 1995 for their review. After an approval by the ELAC committee, the draft document will be presented to ADEQ for their review. If ADEQ finds the document to be appropriate, it will be adapted by them and all the sections of ADEQ will require field methanolic preservation for soil samples for VOC analyses. In the meantime, UST section of ADEQ requires (as of March 20, 1995) the 72 hours extraction time on soil samples for the VOC analyses for the site investigation to determine the extent of contamination. This 72 hour criteria is not required for remediation. We will keep you updated on the progress.
7. Millipore Corporation is scheduling a FREE Immunoassay Certification class in Phoenix, the week of June 26, 1995. This half a day course, consists of the history and the principles of immunoassay, product formats, sample preparation, available tests kits, regulatory status of test methods and hands on training workshop. If you are interested in attending, please call Karen Babicki at 1-800-645-5476 ext. 6636 for details.
8. "How Safe is Your Laboratory", a seminar is being broadcast live via satellite on June 13, 1995 (1:00 pm to 3:00 pm EDT), which is cosponsored by the ACS Department of Continuing Education and Chemical Health & Safety magazine. The registration fee is \$65.00 per person (\$55.00 if registered by May 15, 1995). It is being held at, City of Phoenix, Fire Department, 2430 S. 22nd Ave, Phoenix, AZ 85009. If interested contact Carol Valverde at 800-227-5558.
9. If you have any questions regarding the Updates, please call Prabha Acharya, Program manager, Technical Resources and Training, at the above number.

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JANE DEE HULL, GOVERNOR
James R. Allen, MD, MPH., DIRECTOR

DATE: April 28, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Bureau Chief
SUBJECT: Information Update #10
NOTE: If any problems occur with this web site, please call (602) 364-0720. Thank you.

1. Q. Is it acceptable to preconcentrate the wastewater samples by EPA 200.7?

A. Our Office in conjunction with Ted Martin, Research Chemist, USEPA/EMSL, Cincinnati, Ohio, has come to the following conclusion after reviewing EPA method 200.7 for drinking water and waste water. It is acceptable to preconcentrate samples by evaporation (there is no limit for preconcentration) as long as it does not cause either an uncorrected spectral interference or a matrix suppression affecting signal response or analyte transport to the plasma. An aliquot of the preconcentrated sample(s) should be fortified with the analytes of interest to assure that recovery is between 90% and 110% (See section 5.2.2 of Method 200.7, 40 CFR, APP C) for each matrix type. If the spikes do not meet the acceptance limits, the preconcentration should not be done. Analyte signal suppression has been observed when calcium and magnesium cation total reaches 2000 mg/L.

2. Q. How come EPA 245.1 for Mercury analysis is being withdrawn as of July 1, 1996 but it is also in the approved methods list?

A. The older versions of EPA 245.1 is being withdrawn (1983 and 1991). The newest version of EPA 245.1 from May 1994, "Methods for the Determination of Metals in Environmental Samples - Supplement 1" is presently approved for the analysis of drinking water and will be proposed for the analysis of wastewater later this year.

3. Q. There is a confusion among laboratories regarding the method to be used for BTEX analysis in soil, BLS-193 or EPA 8020?

A. To determine the petroleum contamination in samples, the flowchart in the method BLS-191 must be followed. If you arrive at a decision that the BTEX analysis is required to be done, then either BLS-

193 or EPA 8020 can be used. However the appropriate QC should be followed for the selected method and the final report must specify the method used.

4. There appears to be a contradiction in the acceptable limits for Laboratory Fortified Sample Matrix (LFM) recoveries in the EPA method 300.0, Revision 2.1, August 1993, between the sections 9.4.2 and 9.4.3. Our Laboratory Licensure Office will enforce the section 9.4.3 which states that the matrix recoveries that fall within 20% for the Method A and 25% for the Method B will be acceptable. If the LFM recoveries fall outside the designated limits (9.4.3) but the Laboratory Fortified Blank is within 10%, the analysis can continue. The sample result must be flagged to indicate a possible matrix interference (9.4.4). The laboratories can determine their own LFM limits but it must be equal to or tighter than the limits in 9.4.3.
5. 40 CFR, PART 503, STANDARDS FOR THE USE OR DISPOSAL OF SEWAGE SLUDGE requires that the methods specified in the Part 503 regulations be used for the analysis of sludge samples and the final results be reported on a **dry weight basis**. Due to this reporting requirement, in addition to the concentration of the pollutants, the percent solids content of the sludge must also be determined to verify compliance with the pollutant limits. The following formulae can be used to convert the results to "mg/Kg in DRY WEIGHT".

From mg/L of the digested extract:

$$\frac{\text{mg/L} \times \text{Final volume of processed sample in mls}}{\text{Weight of the wet sample in gms} \times \text{percent solids}} = \text{mg/Kg in dry weight}$$

From mg/Kg of wet sample:

$$\frac{\text{mg/Kg}}{\text{percent solids}} = \text{mg/Kg in dry weight}$$

6. The Arizona Water Pollution Control Association (AWPCA) has recently established a Laboratory Practices Committee to promote the development of programs and services for environmental laboratory personnel. On Thursday, May 4, 1995 from 1:30 to 3.00 pm, at the AWPCA annual convention, an organizational meeting will be held at Mesa Sheraton Hotel, Room 401. The committee is looking for new members. All the laboratorians are invited to attend. Please call Matt Rexing (602) 644-3291 or Vicki Scott (520) 783-7600 for more information.



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Jane Dee Hull, Governor
James R. Allen, MD, MPH, Director

DATE: April 14, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Acting Bureau Chief
SUBJECT: Information Update #9
NOTE: If any problems occur with this web site, please call 1-800-952-0374 or (602) 255-3454 extension 205, 221 or 222. Thank You.

1. In the last Update #8, dated April 7, 1995, we forgot to include the Document Number (901951010) for ordering EPA Method 1664. We apologize for any inconvenience this might have caused.
2. The LC-GC journal, Volume 13, Number 3, March 1995, contains a detailed and very informative article on "New Chromatography Columns and Accessories at the 1995 Pittsburgh Conference, Part 1" by Ronald E. Majors and also contains a very helpful and concise chart on "LC Troubleshooting".
3. Some more information from Technical Notes:
 1. Inorganic methods that are being withdrawn on July 1, 1996 for drinking water compliance testing.
 - Antimony - 204.2
 - Arsenic - 206.2, 206.3, 206.4, D-2972-88A, 307B
 - Barium - 208.1, 208.2
 - Beryllium - 210.2
 - Cadmium - 213.2
 - Chromium 218.2
 -
 - Cyanide - 335.1, 335.2
 - Fluoride - 340.1, 340.2, 340.3
 - Mercury - 245.1
 - Nickel - 249.1, 249.2
 - Nitrate - 353.1, 353.3
 - Nitrite - 353.3, 354.1
 - Selenium - 270.2
 - Thallium - 279.2
 - Sodium - 273.1, 273.2, D1428-64a, 320A
 2. Currently approved drinking water methods for inorganic chemicals and other parameters for compliance testing;

Antimony -	200.8, 200.9, D-3697-92, 3113B
Arsenic -	200.7, 200.8, 200.9, D-2972-93C, D-2972-93B, 3113B, 3114B
Asbestos -	100.1, 100.2
Barium -	200.7, 200.8, 3120B, 3111D, 3113B
Beryllium -	200.7, 200.8, 200.9, D-3645-93B, 3120B, 3113B
Cadmium -	200.7, 200.8, 200.9, 3113B
Chromium -	200.7, 200.8, 200.9, 3120B, 3113B
Cyanide -	335.4, D2036-91B, D2036-91A, 4500-CN-C, 4500-CN-G, 4500-CN-E, 4500-CN-F, I-3300-85
Fluoride -	300.0, D4327-91, D1179-93B, 4110B, 4500F-B,D, 4500 F-C, 4500F-E, 380-75WE, 129-71W
Mercury -	245.1, 245.2, 200.8, D3223-91, 3112B
Nickel -	200.7, 200.8, 200.9, 3120B, 3111B, 3113B
Nitrate -	300.0, 353.2, D4327-91, D3867-90A, D3867-90B, 4110B, 4500-NO3-F, 4500-NO3-D, 4500-NO3-E, B-1011
Nitrite -	300.0, 353.2, D4327-91, D3867-90A, D3867-90B, 4110B, 4500-NO3-F, 4500-NO3-E, 4500-NO2-B, B-1011
Selenium -	200.8, 200.9, D3859-93A, D3859-93B, 3114B, 3113B
Thallium -	200.8, 200.9
Lead -	200.8, 200.9, D3559-90D, 3113B
Copper -	200.7, 200.8, 200.9, D1688-90C, D1688-90A, 3113B, 3111B, 3120B
pH -	150.1, 150.2, D1293-84, 4500-H+-B
Conductivity -	D1125-91A, 2510B
Calcium -	200.7, D511-93A, D511-93B, 3500-Ca-D, 3111B, 3120B
Alkalinity -	D1067-92B, 2320B, I-1030-85
O-phosphate-	365.1, 300.0, D515-88A, D4327-91, 4500-P-F, 4500-P-E, 4110, I-1601-85, I-2601-90, I-2598-85
Silica -	200.7, D859-88, 4500-Si-D, 4500-Si-E, 4500-Si-F, 3120B, I-1700-85, I-2700-85
Temperature-	2550B
Sodium -	200.7, 3111B

- ADHS sponsored workshop on "Environmental Sampling Core Courses -series #1" will be held 4/19 through 4/20/1995, at Prescott Resort, Arizona. The topics to be covered are 1) Data Quality Objectives, 2) How to use your analytical laboratory, 3) Laboratory terminology, 4) Data interpretation and evaluation, 5) Sample plan preparation, 6) Legal aspects/chain of Custody and 7) General information on microbiology sampling.
- If you have any questions regarding the Updates, or if you have any technical questions that need clarification, please call or send [e-mail](#) to Prabha Acharya, Program Manager, Technical Resources and Training at the Laboratory Licensure. A [table of contents](#) to all the Information Updates published is also available.

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JANE DEE HULL, GOVERNOR
James R. Allen, MD, MPH, DIRECTOR

DATE: April 7, 1995
TO: Laboratory Director and QA Manager
FROM: Wesley B. Press, Bureau Chief
SUBJECT: Information Update #8
NOTE: If any problems occur with this web site, please call (602) 364-0720. Thank you.

1. For information about public hearings, meetings, events and rule changes at ADEQ, call the ADEQ Automated Information Line at (602) 207-4300.
2. Late April is the new target date EPA has set for proposing normal hexane as a replacement for CFC-113 and a new extraction gravimetric method pending a final round of administrative approvals. The EPA expects to finalize the proposal in August. EPA is proposing method 1664 "N-Hexane Extractable Material (HEM) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM) by Extraction and Gravimetry (Oil and Grease Total Petroleum Hydrocarbons)" in place of EPA methods 413.1 and 413.2. A copy of the method can be obtained by calling 1-800-420-5764 for a cost of \$30.00.

The EPA has been experimenting with another solvent, following poor results using n-hexane, with infrared techniques.

3. Some more highlights from Technical Notes;
 - A. Standard Method 4500-cl-E, Chlorine Residuals, has a typographical error on page 4-43 of the 18th edition of Standard Methods. The correct formula must have a factor of 0.00564, which is 10 times greater than the factor printed in the incorrect formula.
 - B. The simplified procedure for total residual chlorine in drinking water, which uses DPD chemistry, was omitted from SM 4500-cl-G (18th ed., para. 4, p. 4-46). EPA has corrected the error. See Technical Notes page 25 for the correction.
 - C. EPA will permit a grab sample method, which is approved for chlorine residual monitoring to be adapted for continuous monitoring of free or total chlorine residuals provided the chemistry,

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Thank you for your input and assistance in helping us develop training programs suited to meet your needs.

- 6. If you have any questions regarding the Updates, please call Prabha Acharya, Program manager, Technical Resources and Training, at the above numbers.

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