EPA REGION VIII
999 18th St., Ste. 500, Denver, CO 80202
Mr. Robert Brobst

PART 4 C LABORATORY EVALUATION

After reading the information regarding pollutant concentrations, pathogen and vector attraction reduction determinations, and commonly required calculations, it should be obvious that you will need to have your biosolids analyzed periodically. It is quite likely that you do not have the on-site capability to conduct all of the required analyses for 503 compliance determinations. It is likely that most POTWs will contract with a commercial laboratory to conduct the required analyses.

Choosing a lab with the necessary capabilities is often difficult; ensuring that lab personnel follow your directions and the requirements of 40 CFR Part 503 can be even more difficult. If you forget all the information contained within this Laboratory Section, please remember one crucial point: **You're responsible for ensuring that approved analytical methods are followed and accurate reports generated, not the lab!** As the permit holder, it is your responsibility to make sure that only EPA approved analytical methods are used, that the results are reported in a useable and consistent manner, and that all of the required information is contained in the lab analysis report. Therefore, it is imperative that you take charge of the situation when dealing with a lab and require that your specific directions are followed.

This section was developed to provide you with information you will need to choose a laboratory, and contains the following sections:

4.1 LABORATORY CERTIFICATION

The National Environmental Laboratory Accreditation Conference (NELAC) is a voluntary association of State and Federal agencies; its purpose is to establish and promote mutually acceptable performance standards for the operation of environmental laboratories. EPA=s National Environmental Laboratory Accreditation Program (NELAP) provides support to NELAC. Once the statndards are adopted by the States and Federal agencies, it will oversee the accrediting authority programs. The NELAC home page is at http://www.epa.gov/ttn/nelac/**.** The ANELAC Fact Sheet for Users of Environmental Data@ may be of particular interest.

The following document is an issue of the *Environmental Testing Laboratory Certification Bulletin,* published by the Utah Department of Health, Division of Epidemiology and Laboratory Services, Bureau of Laboratory Improvement. Thanks to the author, Gil Lopez, for permission to use it in this handbook. It describes NELAP and provides a web site containing laboratories certified in Utah.

ENVIRONMENTAL TESTING

LABORATORY CERTIFICATION BULLETIN

Division of Epidemiology and Laboratory Services
Bureau of Laboratory Improvement
Environmental Laboratory Certification Program Volume 4, Number 2 3 MARCH 1998

FYI

EPA and NELAP

Excerpts from a United States Environmental Protection Agency memo dated October 20. 1997 from Cynthia C. Dougherty, Director (Office of Ground Water and Drinking Water):

A.....Under the SDWA regulations for state primacy, states must establish and maintain a program for certification of laboratories conducting analytical measurements of drinking water contaminants 40 C.F.R. 142.10(b)(3). ...To support states= laboratory certification programs, EPA has published and distributed a laboratory certification guidance entitled, AManual for the Certification of Laboratories Analyzing Drinking Water,@ ...Today, EPA announces that recognition of states= laboratory certification program by the National Environmental Laboratory Accreditation Program(NELAP) will assure that the state program meets the primacy requirements relating to laboratory certification... now that NELAP has published certification standards for drinking water laboratories, states may now seek NELAP recognition as an accrediting authority for the certification of laboratories.

...I anticipate the NELAP will enjoy great success and high rates of participation. I expect that the drinking water program nationwide will benefit through state participation in NELAP-accredited certification programs and this will result in better laboratories producing better quality data.@

POLICY

Application packages for certification are now available on the web at:
http://hlunix.hl.state.ut.us/els/labimp/

Beginning as soon as possible we will be sending notices to the laboratories due for recertification that they will need to submit an application for the new certification cycle. In the letter we will indicate the web site address to download the current application package. Those facilities without access to the web will have the option of contacting us for a hard copy application. The new process does not give us first-hand

Utah Certified Laboratories

The list of certified laboratories in the Utah ELCP can be found in the following Internet address:
http://hlunix.hl.state.ut.us/els/labimp/envlab.html

Biosolids Method Certification.

The ELCP offers certification for laboratories under 40 CFR Part 503.8-Standards For The Use or Disposal Of Sewage Sludge. The list of methods available for authorization are listed in two ELCP programs--the Clean Water Act (CWA) and the Resource Conservation and Recovery Act (RCRA). The tables at the end of this bulletin list the methods available for authorization and where they are located in the appropriate certification program. Please refer to the tables for further information.

The laboratory is advised that the preparatory method (*i.e.* digestion, extraction or clean-up) must also be ELCP authorized and reported to the customer by the laboratory in addition to the analytical (instrumental) method. This will apply primarily under the RCRA certification program. Moreover, laboratories should be aware that the methods under 40 CFR Part 503.8 are driven by the customer=s permit requirements and thus the laboratory is advised to check with its customers about what methods are needed for authorization.

knowledge that a laboratory pulling the application down from the web site is actively seeking certification. We will contact any laboratory which has not responded prior to its certificate expiration date to determine its intent to seek certification.

The certification and application process will basically stay the same as in the past except for the way a laboratory may get an application package.

RULE

Following the public hearing and comment period, the rule was made effective on February 19, 1998. There were a few minor corrections to the rule that were pointed out during the comment period that will be addressed in the very near future. We look forward to the next year or so as a time to work through any rough edges that become obvious during implementation. Specific sections of the rule can, and will be opened for changes as needed.

We will begin enforcement of the rule now and anticipate working closely with regulated laboratories as the rule is brought on line.

The full text of the rule is available at our web site under AWhat=s new?@ at:
http://hlunix.hl.state.ut.us/els/labimp/

The Environmental Testing Laboratory Certification Bulletin is published periodically by the Utah Department of Health, Division of Epidemiology and Laboratory Services, Bureau of Laboratory Improvement, to disseminate regulatory and general information to Utah certified laboratories. Send comments to the Bureau of Laboratory Improvement, 46 North Medical Drive, Salt Lake City, UT 84113-1105, by FAX (801) 584-8501 or voice (801) 584-8469
Rod Betit, Executive Director
Utah Department of Health

A.R. Melton, Director
Utah Department of Health

Charles D. Brokopp, Dr. P.H., Director
Division of Laboratory Services

David B Mendenhall, Director
Bureau of Laboratory Improvement

Certification Officers:

Craig D. Odekirk, Section Chief
Gilberto C. Lopez
Karl A. Oberg
Peggy McNicol
Sylvia Evans, Secretary

503.8 Methods and how to find them in the Utah Certification Program (current as of February 1998).

Micro Methods	Method Title	Program/Listing
Enteric Viruses ASTM D4994-89 (1)	Standard Practice for Recovery of Viruses From Wastewater Sludges	CWA/Enteric viruses D4994-89
Fecal Coliform (2) Standard Methods 9221 E Standard Methods 9222 D	 Fecal Coliform MTF Fecal Coliform MF	 CWA/Fecal coliforms 9221 E CWA/Fecal coliforms 9222 D
Helminth Ova (3) EPA 600/1-18-014	Occurrence of Pathogens in Distribution and Marketing of Municipal Sludges	CWA/Helminth Ova Sludge
Salmonella (2,4) Standard Methods 9260 D.1 Kenner and Clark	Quantitative Salmonella Procedures Detection and Enumeration of Salmonella and Pseudomonas	CWA/Salmonella 9260 D CWA/Salmonella Kenner
Metal Digestions (5)		
3050, A, B	Acid Digestion of Sediments, Sludges, and Soils	RCRA/Acid Digest-Soils 3050, A,B
3051	Microwave Digestion of Sediments, Sludges, Soils and Oils	RCRA/Microwave-Soils 3051
3052	Microwave Digestions of Siliceous & Organically Based Matrices	RCRA/Microwave-Matrices 3052
Metal Analysis (5)		
Arsenic 6010, A, B 7060 7061, A 7062 6020	 ICP-Atomic Emission Spectrometry Atomic Absorption, Furnace Atomic Absorption, Gaseous Hyd. Atomic Absorption, Borohydride ICP-Mass Spectrometry	RCRA/ Arsenic 6010, A,B Arsenic 7060 Arsenic 7061,A Arsenic 7062 Arsenic 6020
Cadmium 6010, A,B 7130 7131,A 6020	 ICP-Atomic Emission Spectrometry Atomic Absorption, Direct Asp. Atomic Absorption, Furnace ICP-Mass Spectrometry	RCRA/ Cadmium 6010, A,B Cadmium 7130 Cadmium 7131, A Cadmium 6020
Chromium 6010, A,B 7190 7191 6020	 ICP-Atomic Emission Spectrometry Atomic Absorption, Direct Asp. Atomic Absorption, Furnace ICP-Mass Spectrometry	RCRA/ Chromium 6010, A,B Chromium 7190 Chromium 7191 Chromium 6020
Copper 6010, A, B 7210	 ICP-Atomic Emission Spectrometry Atomic Absorption, Direct Asp.	RCRA/ Copper 6010, A,B Copper 7210

Micro Methods	Method Title	Program/Listing
7211 6020	Atomic Absorption, Furnace ICP-Mass Spectrometry	Copper 7211 Copper 6020
Lead 6010, A, B 7420 7421 6020	 ICP-Atomic Emission Spectrometry Atomic Absorption, Direct Asp. Atomic Absorption, Furnace ICP-Mass Spectrometry	RCRA/ Lead 6010, A, B Lead 7420 Lead 7421 Lead 6020
Mercury 7470, A 7471, A	 Liquid Waste, Cold Vapor AA Solid Waste, Cold Vapor AA	RCRA/ Mercury 7470, A Mercury 7471, A
Molybdenum 6010, A, B 7480 7481	 ICP-Atomic Emission Spectrometry Atomic Absorption, Direct Asp. Atomic Absorption, Furnace	RCRA/ Molybdenum 6010, A, B Molybdenum 7480 Molybdenum 7481
Nickel 6010, A, B 7520 7521 6020	 ICP-Atomic Emission Spectrometry Atomic Absorption, Direct Asp. Atomic Absorption, Furnace ICP-Mass Spectrometry	RCRA/ Nickel 6010, A, B Nickel 7520 Nickel 7521 Nickel 6020
Selenium 6010, A, B 7740 7741, A 7742	 ICP-Atomic Emission Spectrometry Atomic Absorption, Furnace Atomic Absorption, Gaseous Hydri. Atomic Absorption, Borohydride	RCRA/ Selenium 6010, A, B Selenium 7740 Selenium 7741, A Selenium 7742
Zinc 6010, A, B 7950 7951 6020	 ICP-Atomic Emission Spectrometry Atomic Absorption, Direct Atomic Absorption, Furnace ICP-Mass Spectrometry	RCRA/ Zinc 6010, A, B Zinc 7950 Zinc 7951 Zinc 6020
Inorganic Method (2,5)		
Specific Oxygen Uptake Rate Standard Methods 2710B	Oxygen Consumption Rate	CWA/Oxygen uptake 2710B
Total Volatile Acids Standard Methods 5560 C	Distillation Method	CWA/TL Vol Acids 5560 C
Total, Fixed, & Volatile Solids Standard Methods 2540G	Total, Fixed, & Volatiles Solids in Solids and Semisolid Samples	CWA/TL Fixed & Volat Solids 2540G
Total Phosphorus Standard Methods 4500-P	Phosphorus	CWA/ Phosphorus 4500-P B5 Phosphorus 4500-P E

Micro Methods	Method Title	Program/Listing
		Phosphorus 4500-P F
pH SW-846 Method 9045	Soil and Waste pH	RCRA/ pH 9045, A, B, C
Conductivity SW-846 Method 9050	Specific Conductance	RCRA/ Specific Conductance 9050
Total Kjeldahl Nitrogen Standard Methods 4500-N	Nitrogen (Organic)	CWA/ TKN 4500-NH_3 B TKN 4500-NH_3 C TKN 4500-NH_3 E TKN 4500-NH_3 F or G TKN 4500-NH_3 H
Ammonia Nitrogen Standard Methods 4500-NH_3	Nitrogen (Ammonia)	CWA/ Ammonia 4500-NH_3 B Ammonia 4500-NH_3 C Ammonia 4500-NH_3 E Ammonia 4500-NH_3 F Ammonia 4500-NH_3 G Ammonia 4500-NH_3 H
Nitrite Nitrogen Standard Methods 4500-NO_2	Nitrogen (Nitrite)	CWA/ Nitrite 4500-NO_2 B Nitrite 4500-NO_2 E Nitrite 4500-NO_2 F
Nitrate Nitrogen Standard Methods 4500-NO_3 SW-846 Method 9056 SW-846 Method 9210	Nitrogen (Nitrate) Determination of Inorganic Ions by IC Potentiometric Determination of Nitrate in Aqueous Samples with Ion Select Electrode	CWA/ Nitrate/Nitrite 4500-NO_3 E Nitrate/Nitrite 4500-NO_3 F Nitrate/Nitrite 4500-NO_3 H RCRA/Nitrate 9056 RCRA/Nitrate 9210
Organic Methods (5)		
Extraction SW-846 Method 3540, A, B, C SW-846 Method 3550, A,B	Soxhlet Extraction Ultrasonic Extraction	RCRA/ Soxhlet Extraction 3540, A,B, C Ultrasonic Extraction 3550, A, B
Clean-up SW-846 3610, A,B SW-846 3611, A,B SW-846 3620, A, B SW-846 3630, A ,B, C SW-846 3640, A	Alumina Clean-up Alumina Column Clean-up Florisil Clean-up Silica Gel Clean-up Gel-Permeation Clean-up	RCRA/ Alumina Clean-up 3610,A,B Alumina Clnup/Sep Petrol 3611,A, Florisil Col. Clnup 3620, A, B Silica Gel Clnup 3630,A, B, C

Micro Methods	Method Title	Program/Listing
SW-846 3650, A, B SW-846 3660 A, B	Acid-Base Partition Clean-up Sulfur Clean-up	Gel permeationClnup 3640, A Acid-Base 3650, A, B Sulfur Clnup 3660, A, B
Organochlorine Pesticides & PCBs SW-846 Method 8081 SW-846 Method 8082	Organochlorine Pesticides and PCBs by GC Polychlorinated Biphenyls by GC	RCRA/ Organochl Pest 8081 PCB 8081 PCB 8082
Semivolatiles SW-846 Method 8270, A, B, C	Semivolatiles Organic Compounds by GC/MS	RCRA/Semivolatiles 8270, A,B,C
Volatiles Extraction SW-846 Method 5030, A SW-846 Method 5035 Analysis SW-846 Method 8260, A, B	 Purge & Trap for Aqueous Samples Purge & Trap for Volatile Organics in Soil Samples Volatile Organic Compounds by GC/MS	 RCRA/ Purge & Trap 5030, A Purge & Trap 5035 Volatiles 8260, A, B

Notes:

(1) 1992 Annual Book of ASTM Standards: Section 11--Water and Environmental Technology, ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.
(2) AStandard Methods for the Examination of Water and Wastewater@, 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW, Washington, DC 20005.
(3) Yanko, W.A., AOccurrence of Pathogens in Distribution and Marketing Municipal Sludges@, EPA 600/1-87-014, 1987. National Technical Information Services, 5285 Port Royal Road, Springfield, VA 22161 (PB 88-154273/AS).
(4) Kenner, B.A. and H.P. Clark, ADetection and enumeration of Salmonella and Psuedomonas aeruginosa@, Journal of the Water Pollution Control Federation, Vol. 46, No. 9, September 1974, pp. 2163-2171. Water Environment Federation, 601 Nythe Street, Alexandria, VA 22314.
(5)@Test Methods for Evaluating Solid Waste, Physical/Chemical Methods@, EPA publication SW-846 Third Edition (September 1986), Update I (July 1992), Update II (September 1994), Update IIA (August 1993), Update IIB (January 1995), and Update III (December 1996). Available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

4.2 FINDING A LABORATORY

The purpose of this section is not to provide you with a list of labs, but rather a set of resources with which you can find a lab that will meet your needs.

- From the Association of Public Health Laboratories home page (http://www.aphl.org), select links and Public Health Labs, which will give you the home page of each State=s public health laboratory. Some of them (*e.g.*, Minnesota, at http://www.health.state.mn.us/divs/phl/allabs.html) have links to lists of accredited labs.
- Environmental Yellow Pages (http://www.enviroyellowpages.com) has ALaboratory - Testing Services@ for a limited number of states.
- Various search engines are available, such as Switchboard (www.switchboard.com) for locating labs. The Business Category is ALaboratories-Testing@ and you can then search nationwide, a particular state, or near a particular address. When a list of labs is then produced, it will include a link to those labs that have web sites so you can get more information.
- Another telephone search is InfoSpace (http://yp.infospace.com); the Business Category is ALaboratories-Analytical@ and you can search city and state and then expand the search geographically if necessary.
- ACIL (formerly the American Council of Commercial Laboratories) was founded in 1937 and has 350 members who operate about 1,500 facilities in the U.S. and abroad. The ACIL web site is at http://www.acil.org, from which you can select ACIL Links; ACIL Member Links; and Environmental Sciences Testing to access the web sites of member firms which do environmental testing.

4.3. Biosolids Sample Analysis Request Form.

General Information		
Sample Shipment Dates:	Reference No.:	
No. of Samples in Shipment:	NPDES No.:	
Report Required in: (circle one) 15 days, 30 days, 45 days, Other ___ days (increased cost may be associated for rush jobs)		
Facility Name:	Facility Type:	
Mail Address:		
City:	State:	Zip Code:
Contact:		Phone No:
Billing Name and Address (if different than above)		
Name:		
Mail Address:		
City	State:	Zip Code:
Contact:		Phone No:

Sampling Information	
Sample collected by:	Preservation used during collection and/or transport:
Date(s) and time(s) of sample collection:	Sample location:
Composite or grab: Quantity collected:	Sampling equipment used (name and material):

Table 4.3 presents an example analysis request form to be used prior to shipping biosolids samples for analysis. To conform with EPA approved analytical methodology and to receive an acceptable data analysis report, the POTW must provide the contract lab not only with the biosolids sample but with additional information as well. The example analysis request form serves two purposes: 1) it provides the contract laboratory with important information needed to accurately perform the requested analyses and generate an acceptable report; and 2) it supplies in writing a detailed description of analytical methods to be used, as well as the required report format. POTWs are encouraged to use this form as is or modify it to meet site-specific needs.

Laboratory Report Requirements
The laboratory report **must include** all analysis results in dry weight basis, analysis methods used, sample received dates and times, dates and times of analyses, analyst identification, laboratory supervisor name and signature, a laboratory certification statement (if applicable), and the chain of custody form(s). Also, the laboratory must utilize appropriate QA/QC methodology as found in method reference source document (*i.e.*, Standard Methods or SW-846) depending on the analysis performed.
ALL RESULTS MUST BE SPECIFIED AS DRY WEIGHT BASIS

Required Analyses

Analysis required yes/no	Pollutant	Approved analysis method	Required prep. method	Maximum Holding Time After Collection
Metals				
	Arsenic	SW-7060/7061/6010	SW-3050	6 months
	Cadmium	SW-6010/7130/7131	SW-3050	6 months
	Chromium	SW-6010/7190/7191	SW-3050	6 months
	Copper	SW-6010/7210	SW-3050	6 months
	Lead	SW-6010/7420/7421	SW-3050	6 months
	Mercury	SW-7471	SW-7471	28 days
	Molybdenum	SW-6010/7480/7481	SW-3050	6 months
	Nickel	SW-6010/7520	SW-3050	6 months
	Selenium	SW-6010/7740/7741	SW-3050	6 months
	Zinc	SW-6010/7950	SW-3050	6 months
Biosolids Screening				
	Total, Fixed, and Volatile Solids	SM-2540 G	NA	7 days
	pH	SW-9045	NA	immediately
	Total Volatile Acids	SM-5560	NA	7 days
	Total Phosphorus	SM-4500-P	4500-PB	28 days
	Total Ammonia	SM-4500-NH_3	NA	28 days
	Conductivity	SW-9050	NA	28 days
	Nitrate + Nitrite	SM-4500-NO_2	NA	28 days

Required Analyses				
Analysis required yes/no	Pollutant	Approved analysis method	Required prep. method	Maximum Holding Time After Collection
		SM-4500-NO_3 SW-846 Method 9056 SW-846 Method 9210		
	TKN or Organic N	SM-4500-N_{org}	NA	28 days
Microbiological				
	Fecal Coliform	SM-9221 E/9222 D	NA	6 hours
	Enteric Viruses	ASTM-Method D 4994-89	NA	48 hours @ <10EC 2 hours @ 10 -25EC
	Salmonellae, sp.	SM-9260 D. or Kenner	NA	6 hours
	Helminth Ova, viable	Yanko	NA	5 days
Others				
	Organochlorine Pesticides and PCBs	SW-8081 SW-8082	SW-3540/3550	14 days
	Semivolatile Organics	SW-8270	SW-3640/3610 /3611/3620 /3630/3650	14 days
	Volatile Organics	SW-8240	Purge and Trap	14 days

The following table provides information regarding the minimum amount of sample to be collected as well as the recommended sample container.

Minimum Amount of Biosolids Required for Analysis.

Pollutant	Amount	Container
Metals	1,000 ml or a volume containing 1 gram dry weight solids.	Plastic or glass
Pesticides and PCBs	1,000 ml	Amber glass
Semivolatile organics	1,000 ml	Amber glass
Volatile organics	1,000 ml	Amber glass
TSS and Volatile Solids	1,000 ml	Plastic or glass
pH	500 ml	Plastic or glass
Pathogens	1,000 ml	Plastic or glass

References and Footnotes

SW U.S. EPA, SW-846, 3rd Edition *Test Methods for Evaluating Solid Waste*.

SM *Standard Methods for the Examination of Water and Wastewater*, 18th Edition. American Public Health Association, Washington, D.C., 1992.

ASTM *Standard Practice for Recovery of Viruses from Wastewater Sludges*, Annual Book of ASTM Standards: Section 11**C**Water and Environmental Technology, ASTM, Philadelphia, PA., 1992.

Yanko Yanko, W.A., *Occurrence of Pathogens in Distribution and Marketing Municipal Sludges*, EPA 600/1-87-014, 1987. PB 88-154273/AS, NTIS, Springfield, Virginia.

Kenner Kenner, B.A. and H.P. Clark, *Detection and Enumeration of Salmonella and Pseudomonas aeruginosa*, J. Water Pollution Control Federation, 46(9) :2163-2171, 1974.

4.4. Questions To Ask When Choosing a Laboratory.

The following questions may be useful in determining which lab is right for you. They are only some of the potential questions that could be asked; this list should not be considered absolute. Site-specific concerns may alter the direction of your questions. The following questions are broken down into five major sections.

General Feasibility

- **$** Does the lab routinely perform the required analyses? Are the individuals qualified and do they have written qualifications available?
- **$** Is the lab's turn-around time compatible with your schedule?
- **$** Will the geographical location of the lab cause additional expenses (phone and shipping) and potential difficulty in communication?

Concerns Prior to Sample Collection and Shipment

- **$** Will the lab provide coolers and sample containers?
- **$** What type of sample chain-of-custody is commonly used and will the lab provide chain-of-custody forms prior to shipment?
- **$** What form of shipment is commonly used (Federal Express, UPS, etc.)? Will the lab pay the shipping costs?
- **$** On what days will someone be available to receive sample shipments (Saturday)?
- **$** What type of sample container should be used and does the lab have any specific packaging requirements?

Costs

- **$** How will I be billed (invoice, prepay, etc.)? - Never prepay for analyses.
- **$** Are sample containers provided for free or is an additional cost involved?
- **$** Are the costs per analysis within the ranges provided in this document? If they are above the ranges, why?
- **$** What are the sample preparation costs and when and how are they incurred (i.e., per sample, per analysis, etc.)?
- **$** Are there any additional costs involved which I may not be aware of at this time?
- **$** Can a written estimate be provided and what factors might cause the actual price to differ from the estimate?
- **$** Will QA/QC of my samples involve additional costs?

QA/QC Procedures

The July/August 1989 edition of *The Bench Sheet*, published by the Water Pollution Control Federation, lists several protocols which are the basic tools of a good QA/QC program. When determining whether the lab has acceptable QA/QC protocols, you should ask the following questions:

- **$** Does the lab have and use the following protocols:

  - QA manual
  - Standard operating procedures

- Sample custody
- Traceability to reference materials
- QC checks
- Data validation
- Quality assessment (spikes, duplicates, etc.)
- Control charts
- Documentation
- Periodic QA audits

If the lab does not have and/or use one of the above protocols, you should inquire as to the reasons. Keep in mind that some of these protocols may be contained within another.

Data Presentation

After the analyses have been conducted, the lab will provide you with a data package summarizing the analyses. The data package can differ greatly from lab to lab so the following questions should be asked prior to sample shipment:

$ What type of report will I receive? Will narrative description be provided for help in evaluating the data package?

$ Will the data be presented on a dry weight basis? If not, require it.

$ Will I receive a QA/QC report along with the data package?

$ If data qualifiers are present, will a key be presented?

$ Will the detection limits for each analysis be provided?

$ Will the dates and times of all analyses be reported?

$ Will the analytical methods used be included?

If any of the above items are not included with the data package, ask the lab to provide them.

The table above presents appropriate questions when choosing a lab or attempting to distinguish between two or more labs. The questions on this table should not be considered all-inclusive, but may provide some direction for individualized questions. There is no grading policy associated with these questions. If your questions are not answered to your satisfaction, you may wish to deal with another lab.