



## How to Select an Analytical Laboratory for Dairy Compliance Patricia Price<sup>1</sup>, Dirk Holstege<sup>2</sup>, and Deanne Meyer<sup>1</sup>

In January, 2012, the North Coast Regional Water Quality Control Board adopted three General Orders for dairy facilities. Order No. R1-2012-0003 is a Conditional Waiver of Waste Discharge Requirements, Order No. R1-2012-0002 is a General Waste Discharge Requirement, and Order No. R1-2012-0001 is a General National Pollutant Discharge Elimination System (NPDES; No. CAG011001) Waste Discharge Requirements for concentrated animal feeding operations within the North Coast Region<sup>3</sup>. All three General Orders require monitoring of surface and ground waters as part of their Monitoring and Reporting Programs. These General Orders define the minimum sampling requirements and in some cases established methods for analyses of samples for ground and surface waters, off site discharges, and nutrient management. Deviations from the established methods must go through a review process and be accepted by the Regional Board.

### What laboratories should I use?

Laboratory requirements vary by sample material submitted.

**Surface and Ground water** samples must be analyzed in laboratories accredited for wastewater analyses in the Environmental Laboratory Accreditation Program (ELAP) by the California Department of Public Health (formerly by the Department of Health Services). These laboratory analyses shall be conducted in accordance with the Title 40 Code of Federal Regulations Part 136 (*Guidelines Establishing Test Procedures for the Analysis of Pollutants*) or other test methods approved by the Executive Officer.

**Process wastewater** UC recommends that process wastewater samples be analyzed in laboratories accredited for wastewater analyses in the Environmental Laboratory Accreditation Program (ELAP) by the California Department of Public Health (formerly by the Department of Health Services) OR participating in the Manure Analysis Proficiency testing program (MAP) OR using the laboratory analysis methods described in the California Analytical Methods Manual for Dairy General Order Compliance (available for download at: [http://anlab.ucdavis.edu/docs/uc\\_analytical\\_methods.pdf](http://anlab.ucdavis.edu/docs/uc_analytical_methods.pdf)).

**Manure** UC recommends that samples be analyzed by methods utilized by the Manure Analyses Proficiency (MAP) Testing Program or accepted by the University of California and by laboratories participating in the MAP Testing Program or other programs whose test are accepted by the University of California, OR using the laboratory analysis methods described in the California Analytical Methods Manual for Dairy General Order Compliance (available for download at: [http://anlab.ucdavis.edu/docs/uc\\_analytical\\_methods.pdf](http://anlab.ucdavis.edu/docs/uc_analytical_methods.pdf)).

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<sup>3</sup> Dairy Permits and associated information available at [http://www.waterboards.ca.gov/northcoast/water\\_issues/programs/dairies/#permit](http://www.waterboards.ca.gov/northcoast/water_issues/programs/dairies/#permit) accessed September 5, 2012.

**Plant tissue and soil** UC recommends that samples be analyzed by methods utilized by the North American Proficiency Testing (NAPT) Program or accepted by the University of California and by laboratories participating in the NAPT Program or other programs whose tests are accepted by the University of California, OR using the laboratory analysis methods described in the California Analytical Methods Manual for Dairy General Order Compliance (available for download at: [http://anlab.ucdavis.edu/docs/uc\\_analytical\\_methods.pdf](http://anlab.ucdavis.edu/docs/uc_analytical_methods.pdf)).

## How do I find labs that meet these requirements?

The following websites list labs participating in each of the programs listed above (there are also links to these websites at the CDQAP website [www.cdqa.org](http://www.cdqa.org)):

**ELAP Program** (surface and ground water):  
<http://ww2.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx> (scroll down to “Information, Lists, and Forms”).

**MAP Program** (manure and process wastewater, participating laboratories):  
<http://www.mda.state.mn.us/licensing/pestfert/mapprogram.htm>

**NAPT Program** (plant and soil):  
<http://www.naptprogram.org/pap/> (link to “view PAP labs”).

NOTE: You or your consultant should check these lists at least twice a year as your lab may elect to stop participating in a program, or new labs may be added to a program. The lab you use must meet the requirements at the time you submit your samples for analyses!

## How do I choose a laboratory from those that meet these requirements?

You will weigh the answers to many questions prior to selecting your laboratory.

**Is the lab familiar with the Dairy General Waste Discharge Requirement or Waiver analytical requirements?** Laboratories analyze samples for many reasons. You want to be sure the lab is up-to-date on analytical methods and types of analyses needed for dairy compliance. Do not assume that a lab that does regulatory compliance work is knowledgeable about Region 1 compliance requirements.

**When does the lab accept samples?** It is possible that a lab may establish a cut off time for samples during the day, or not accept samples on certain days for materials that require quick handling within the laboratory. Always check before sampling so you know: the hours of operation, hours of receiving samples, holiday schedule.

**How much does testing cost?** Test costs can vary significantly from lab to lab. While low test cost is important, verify that the lower-cost lab is also meeting your other needs, such as quality, turn-around time, or service.

**Does the lab have a Quality Assurance program?** Quality assurance is a set of procedures the lab follows to ensure that work performed is of high quality. These quality procedures are described in a Quality Assurance Manual which should be available for your review. The ELAP program requires a quality manual, but the lab should also have a quality assurance manual for plant, soil, and manure testing.

**Does the lab supply containers?** Labs require a certain amount of each material for testing. Some labs provide containers upon request. These containers (bottles or bags) are selected to provide sufficient sample size and for convenient handling and storage.

**Does the lab perform sampling?** You might want the lab to collect your samples for you. Check to see if this service is available.

**Is the Testing Report easy to understand?** Reporting formats vary from lab to lab. Make sure the report you will be receiving is easy to understand, with clear test names and reporting units.

**Does the lab supply chain of custody forms?** For reporting purposes, a chain-of-custody form should be completed for all samples. Most labs provide a form for you to complete when collecting samples. Some labs will also provide identification labels for the sample containers. Make sure that you understand the form, the labels, and the sample submission process.

**How does the lab handle expired samples?** You should be able to request that the samples not be run if they expire prior to initiation of analysis. That way you don't pay for test results that have questionable value. For compliance purposes you need test results from samples that have not expired. Samples may expire for different reasons, such as: improper storage (ice cooled or refrigerated samples are usually required; warm samples are usually expired), or if analysis does not begin within the hold time specified in the protocols.

**How quickly will the results be available?** Some labs might take longer than others; however, all tests must be completed within the regulatory time frame (hold time). Some labs provide rush testing services, if requested (and paid for). In general, your results should be available within a few days or a few weeks depending on the method. Check with your lab to see what options you have for result delivery.

**Are there lab personnel available if I have questions about my results?** You will want to contact the laboratory and discuss the results if one or more of your samples have results that seem unusual. For detailed information about using the results, you should contact your certified nutrient management specialist.

**Are my samples analyzed on-site or sent to another lab for analysis?** Some labs specialize in certain tests and contract out other tests to a different lab. When this occurs it is important to know the lab ensures that all the samples are tested in the mandatory time-frame, and how they verify the quality of the second lab (how they sub-contract work should be described in their quality manual). Samples need to be analyzed within the hold time, so lab to lab transportation may not be an option for some tests with short hold times.

Contact your analytical laboratory for additional information on sample collection, handling, preservation, and delivery. Contact the North Coast Regional Water Quality Control Board for any other information requests:

[http://www.waterboards.ca.gov/northcoast/water\\_issues/programs/dairies/#permit](http://www.waterboards.ca.gov/northcoast/water_issues/programs/dairies/#permit).

*Information in this document was compiled by UCCE and CDQAP to assist dairy producers in understanding and complying with the three General Orders adopted by the North Coast Regional Water Quality Control Board on January 19, 2012. Each order is available at [http://www.waterboards.ca.gov/northcoast/water\\_issues/programs/dairies/](http://www.waterboards.ca.gov/northcoast/water_issues/programs/dairies/). Effort has been made to ensure accuracy, but these summaries are not official regulatory guidance and are not legal advice. Producers are advised that these summaries are not intended to be a substitute for producers reading the complete order and consulting their own legal counsel to ensure compliance with the waste discharge requirements. Should any information here conflict with the General Orders and/or official information provided by the Regional Board, Board-provided information takes precedence.*

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