

# LaRosa Analytical Services Partnership Program

## Guidelines for Laboratory Use and Sample Submission

The Watershed Management Division (WsMD) and the Vermont Agriculture and Environmental Laboratory (VAEL) are pleased to provide assistance to your citizen-based monitoring program. The following guidelines provide information for your use and access to VAEL housed at the University of Vermont at the Hills Building. We request that you review and adhere to these guidelines for laboratory use and sample submission. These guidelines are to be used in conjunction with other material provided including the newly prepared Training Curriculum, but are in no means a substitute for the personal contact provided by Jim, Guy, Dan, Alison, Megan and your individual Watershed Coordinators. However, these guidelines are intended to streamline your collection and delivery of samples and the laboratory's processing of the tests.

The LaRosa Partnership Program is administered jointly by the WsMD and VAEL. The primary contacts are:

### WsMD

Jim Kellogg, Scientist/Biologist  
490-6146  
[jim.kellogg@vermont.gov](mailto:jim.kellogg@vermont.gov)

### VAEL

Guy Roberts, Director  
585-9808  
[guy.roberts@vermont.gov](mailto:guy.roberts@vermont.gov)

Dan Needham, Supervisor  
585-9808  
[daniel.needham@vermont.gov](mailto:daniel.needham@vermont.gov)

Megan Phillips, Chemist  
[megan.phillips@vermont.gov](mailto:megan.phillips@vermont.gov)

Alison Farnsworth, Administrative  
585-9680  
[Alison.farnsworth@vermont.gov](mailto:Alison.farnsworth@vermont.gov)

## Use of Laboratory

You are approved to submit samples to the laboratory as described by your 2016 LaRosa Partnership Program QAPP and approval. We will accept most samples from 8:00 am to 3:00 pm, Monday through Friday's. Projects that submit *E. coli* or turbidity tests cannot deliver their samples on Fridays due to short holding/processing times. **Please note:** the laboratory will not be open to accept samples during the following holidays: Memorial Day (Monday 5/30); Independence Day (Monday 7/4); Bennington Battle Day (Tuesday 8/16); Labor Day (Monday 9/5) and Veteran's Day (Friday 11/11).

VAEL is located at UVM in the Hills Building. The LaRosa Partnership participants will bring their coolers and samples into the Hill Building and leave in Room 015. **Please make sure that all coolers are identified with the project name.** New bottles, coolers and deionized water can be picked up in Room 013.

## Project Identification Code - 137

As in prior years, each participating project will have a unique project identification code. The following list provides the 2016 codes for each participating group. All samples will be tracked by this number, so please include it in any correspondence with the laboratory.

Activity Code	Project Name	Project Contact(s)
1	Addison County River Watch Collaborative (ACRWC)	Matt Whitten/Heidi Willis/Kristen Underwood/
4	Huntington River Conservation Commission	Aaron Worthley
6	South Chittenden River Watch (SCRW)	Bill Hoadley/Ray Mainer/Susan Moegenburg
7	Poultney-Mettowee WQ Monitoring Program	Hilary Solomon
9	Southeastern Vermont Watershed Alliance (SeVWA)	Ryan O'Donnell/Laurie Callahan
13	Upper Otter Creek Watershed Association	Nanci McGuire
17	Missisquoi River Basin Association (MRBA)	Lindsey Wight/Jimmy Young
22	Friends of the Mad River (FMR)	Corrie Miller
25	White River Partnership (WRP)	Mary Russ/Dan Rudell
28	Williston Conservation Commission - Allen Brook	Melinda Scott/Daniel Kelly
29	Headwaters Winooski Partnership	Shawn White/Ann Smith
31	Lake Carmi Tributary Monitoring Program	Peter Benevento/Chelsea Roston/Jessica Draper
33	Memphremagog Watershed Association.	Fritz Gerhardt
38	Ottawaquechee River Group (ORG)	Chris Yurek/Todd Menees
40	Four Rivers Winooski Partnership	Shawn White/Ann Smith
46	Wolcott Farm Milkhouse Waste	Paul Madden/Ben Gabos
49	Chittenden County Stream Team	Shawn White/Ann Smith
50	Black River Action Team (BRAT)	Bill Manner/Kelly Stettner
55	Connecticut River Watershed Council (CRWC)	Andrea Donlon
58	Burke Conservation Commission	Ben Copans
60	Friends of Northern Lake Champlain (FNLC)	Joseph Bondi/Denise Smith

## Scheduling your sample submissions

We require that all sampling events be pre-scheduled, unless specifically discussed in advance. A few projects are submitting samples following a flexible schedule such as high flow or base flow sampling. Projects will be submitting samples on a specified day of the week, pre-arranged through Dan Needham. In order to facilitate sample submissions, we are offering pre-log packets for sampling events.

## Pre-log packets

Pre-log packets are essentially packets that pre-enter your samples into the laboratory data management system. They are essentially pre-orders, and when you pre-log samples, the lab system has all the information needed to have the samples analyzed, once the samples arrive at the lab. A “pre-log packet” consists of a record of the analysis order, and all the bottle labels needed for the pre-logged sampling run. We strongly encourage the use of pre-log packets, since they save the lab and yourself considerable time. ***However, they only work when the samples collected match the samples ordered.***

When you request a pre-log packet, all information will be entered into the Laboratory Information Management System (LIMS) based on information you provide. We can provide pre-log packets up to six weeks in advance of a sampling run, which will include all sample labels and all the information provided to the lab by you. Please do not request more than two consecutive packets in any request.

Please refer to the “Pre-log Packet Request Form” to assemble a sample order. Each pre-log packet must address a single sampling run. As such, if you collect all sites on Wednesdays, your pre-log packet will be set up such that all samples are identified as collected Wednesday. If you sample across two days, then the pre-log packet will contain each sample, coded to the expected day of sampling. We are happy to mail pre-log packets to groups. ***Please send pre-log request forms at least two weeks in advance to Dan Needham and Alison Farnsworth.***

When using pre-log packets, there are a few important considerations. First, each label provided is marked with a particular test. These labels must go on the correct bottles (see below). Second, each label is barcoded to facilitate electronic data management. As such, please do not modify the labels in any way. Please have samplers be careful to fill the correct bottles at the correct sites. Finally, when the samples come in, each sample must have the time of collection identified. Just write the time on the Laboratory Sample Login Sheet, which is part of the pre-log packet. Please remember to record the time of collection each sample was collected on the Laboratory Sample Login Sheet.

If a site that is part of a pre-log order is NOT sampled, simply cross the sample off from the Laboratory Sample Login Record, *and discard the unused labels*. If a site is ADDED to a sampling run for which a pre-log packet has been established, write the necessary information at the bottom of the Laboratory Sample Login Record, *and use some generic labels*. The lab will make up supplemental labels for those particular added samples.

Please note that field duplicates and field blanks are considered separate samples. Please accord a line for your duplicate or blank samples, as noted on the “Pre-log Packet Request Form” or “Sample Submission Form.”

## Bottle and deionized water orders

We can typically distribute bottles for up to two sampling runs at a time. Please use the “Request for Bottles” form to assemble your bottle order. Bottle orders should be sent to Dan Needham and Alison Farnsworth and **MUST be received at least two weeks in advance**. The following table describes the bottles used by VAEL and the sample holding times:

Test	Bottle Type	Hold Time
Biological Oxygen Demand (BOD)	2-liter polyethylene	48 hrs
E. coli	125 ml polycarbonate round, sealed	6 hrs
Total Phosphorus (TP)/Dissolved Phosphorus (DP)	Glass white-capped test tubes	28 days
Total Nitrogen (TN)	Blue-topped 50ml "centrifuge" test tube	28 days
NO <sub>2</sub> - NO <sub>3</sub> (“NO <sub>x</sub> ”) Nitrogen	Blue-topped 50ml "centrifuge" test tube	28 days
Turbidity	250 ml square polyethylene bottle	48 hrs
Total Suspended Sediments (TSS)	1 liter round polyethylene bottle	7 days
Metals	250 ml polyethylene bottle	6 months
Chloride (Cl)	Purple-topped 50ml "centrifuge" test tube	28 days
Deionized water for blank samples	Either 2-liter polyethylene bottles or 1-liter round polyethylene bottles with DI water	28 days

## Quality Assurance Project Planning

All projects will be required to develop a Quality Assurance Project Plan (QAPP) prior to initiating sampling. These documents describe who will sample, the where, how, when and for what tests each project collects samples. We make this process relatively painless by providing a “generic” form-based QAPP document that can be filled out specific to each project. While it may seem at times burdensome, the development of a QAPP document is an excellent means to ensure that your project is well-designed and captures all critical elements. The QAPP form will be provided to groups in a Microsoft Word template. The QAPP is an extremely useful document at the end of the project when it comes time to write the report.

## Particularities for certain samples

Certain samples coming into the laboratory require preservation with strong acids, or filtration.

*For projects sampling total nitrogen (TN)*, these samples must be preserved using sulfuric acid. For safety reasons, this is done after samples arrive in the lab, by program staff. TN samples must be acidified within 48 hours of collection, and therefore, we must have those samples in the lab within this time window.

*For projects sampling NO<sub>2</sub> - NO<sub>3</sub> nitrogen*, these samples must also be preserved using sulfuric acid. For safety reasons, this is done after samples arrive in the lab, by program staff. NO<sub>2</sub> - NO<sub>3</sub> nitrogen samples must be acidified within 48 hours of collection, and therefore, we must have those samples in the lab within this time window.

*For projects sampling for metals*, these samples must also be preserved using nitric acid. For safety reasons, this is done after samples arrive in the lab, by program staff. Metal samples must be acidified within 48 hours of collection, and therefore, we must have those samples in the lab within this time window.

*For projects sampling for chloride (Cl), dissolved phosphorus (DP), or dissolved nitrogen*, these samples must be filtered using 0.45 $\mu$  filter membranes. Only a short list of programs were previously approved to sample for these parameters. Please plan to discuss filtration of these samples with Jim Kellogg and Dan Needham. The laboratory does not generally provide filter membranes for dissolved parameters.

## Sample delivery to the laboratory

The following checklist is provided to ensure that all samples are properly entered into the system.

- ✓ Deliver samples and all paper work in coolers in Ziploc™ plastic bags to Room 015 of the Hills Building. **New for 2016** - Beginning in early June, an intern will be stationed in Room 015 to facilitate the sample drop off to include the paperwork review and the sorting of samples.
- ✓ Cross-reference the samples in your cooler against the Laboratory Sample Login record, or the sample submission sheet.
- ✓ If samples are missing, note this on the Laboratory Sample Login Record or submission sheet.
- ✓ If samples were added to a pre-log order, write these at the bottom of the Laboratory Sample Login Record.
- ✓ Make certain that the correct times are written in on each line of the Laboratory Sample Login Record or sample submission sheet.
- ✓ We request that you align all samples in order of ascending laboratory ID number. These numbers are found in bold at the bottom of the sample bottle label.
- ✓ For projects sampling *E. coli*, please notify someone in Rooms 102, 103 or 128 (2<sup>nd</sup> floor) that the samples have arrived.
- ✓ Retrieve your coolers from prior sampling rounds. The coolers will be in Room 013
- ✓ Pick up any sample bottle orders and fresh deionized water from Room 013. It is imperative that the partners give two weeks' notice for bottle request and sample submission forms. This ensures that the coolers, bottles and labels are ready for your next sampling event.

## Accessing your data results

Please be aware that there is a four-week turnaround for all samples processed at the LaRosa laboratory. This turnaround time applies to all lab users equally. As such, it is commonly six to eight weeks before an appreciable volume of data are available for review.

However, as a convenience, data results are provided by an online service maintained by VTDEC. Included in this are pre-validation results for *E. coli* tests to facilitate swimming hole postings for groups that do this. See <https://anrweb.vermont.gov/dec/dec/VolunteerMonitoring.aspx>. Typically, the preliminary results for *E. coli* tests are posted two to three days after collection. As pre-validated results, they have not been screened by either your own projects screening or MAPP's internal QC process. While this data is accessible, VTDEC does not recommend it be shared widely or used in written publications until it can go through the thorough review process that is part of the LaRosa Review Process prior to saving in the VTDEC WQX and US EPA STORET databases.

## Annual Reporting and Data Submissions

Each group participating in the LaRosa Partnership for 2016 is required to report on their efforts in two ways.

1) Written report. A written report should be drafted summarizing the results of each initiative. These “mini” reports need not be overly long, technical, or complex. They should at minimum present the roster and GPS location of sites, count of sampling events per site, tests monitored, and results of quality assurance analyses. The reports can also contain any results the group wishes to share. These reports are more for the project participants, town offices and boards, associations and the neighboring community than for VT DEC. For those with ongoing project (i.e. year to year), a new year of sampling cannot begin until the prior year's report has been written with recommendation for the following year. These reports will be posted on the Watershed Management Division's web site for further opportunities and outreach at:

<http://dec.vermont.gov/watershed/map/monitor/larosa>

2) Electronic data resubmission. All project data must be resubmitted to Jim Kellogg after it has been reviewed for quality assurance. Specifically, each group will be reporting via the web-based application recently revised over the winter of 2016, into which your “screened” project data needs to be placed. This was designed to permit VTDEC to easily add the data to the LaRosa Partnerships data archive, WQX and STORET. We will now be asking that volunteers provide us with qualitative flow information that can now be stored in WQX. Directions to obtain this have been prepared and shared and will be posted on our webpage. ***Groups that do not fulfill these requirements will be ineligible for future LaRosa Partnership support.***