



Quality Analyses for Informed Decisions®

NEWS REPORT

A&L GREAT LAKES LABORATORIES, INC. FALL 2009

Preparing for Tomorrow

The A & L Great Lakes team is constantly evaluating where we are, and where we will need to be in the future. When we moved to our current location in 1988 our long term vision was to be able to handle 2500 soil samples a day. We couldn't imagine that 20 years later we would be dealing with more than 10,000 samples a day.

As the sample volume has grown we have made many adaptations to our building in order to accommodate the additional lab equipment and personnel. Redundancy in instruments and cross-training of our staff are extremely important, and standardized processes are critical in achieving our quality assurance requirements. The addition of automation to our laboratory has increased sample through-put and improved our quality control.

This fall we are taking the next step in our robotic automation adventure with the addition of an automatic pH system for soil analyses. The system will stir samples, read the pH, and rinse following analysis in preparation for the next sample. There will still be technicians assigned to monitor the system and check all quality control samples. Our primary goal is to improve throughput as well as quality control on our soil pH analyses.

We are also modifying our soil waste removal system prior to this fall's busy season. We currently have a belt conveyor system to discard waste soil from the grinding room into a roll-off dumpster, and the volume of soil that we handle has pushed our current system to its breaking point (literally). We are adopting a more robust conveyor for our soil removal process, which will help with efficiency in the sample grinding laboratory.

Our environmental division is putting together their final touches on our NELAC certification. This is a national certification for laboratories, and the process has helped us identify areas where we can improve our data quality. We hope to have our certification by the end of 2009.

As our lab team has grown, so has our parking lot. After several years of parking in the grass, we have finally black-topped the "Back 40", giving us much needed parking spaces for our full-time and seasonal technicians. We have expanded our outdoor picnic area and added landscaping, which has been met with great approval from our team. We've made a commitment to our staff and our clients that we will be staying at our current location for many years to come.

New Schedule of Fees

We are releasing a new Schedule of Fees effective October 1, 2009. Our list of services continues to grow and evolve with changing customer needs. Please contact us for a copy if you do not receive one soon.

Soil Drying Capacity Increased

Long past are the days when analyzing several hundred soil samples was a busy day for us at the lab. With growth there are always new challenges to continue to properly and efficiently process samples.

Our soil drying capacity has needed to increase nearly each year recently. In response we have expanded and added soil drying systems in the building. Our capacity now is over 9,000 soils per day that can be dried in a sixteen hour period, a 50% increase compared to last fall.

This will help us provide good turnaround time even during what is shaping up to be a short fall soil sampling window.

Importance of AgLime

Delivering More Information

You can now e-mail e-Docs data to a 3rd party. If you have a grower or individual you would like to send data or a report to, simply:

1. Query out the data or report you want.
2. Under the "Retrieve Query Results" section, select the format of the data to send by checking the appropriate check box.
3. Beneath the "E-mail the query results", type in the e-mail address of the recipient.
4. Click the "Send Email" button to send the queried data to the specified e-mail address.
5. Finally, if you are querying out a large number of files, you can choose the "Download Files" button which will create a .zip file containing all of your selected files, which can be saved or emailed.

If you need login information or have any questions, please contact Greg Neyman.

What makes the fall season a great time to test soils and the right time to apply ag-lime?

Soil Conditions - Soils are generally more manageable during the fall. They tend to be dryer and give us more consistent readings for potassium as opposed to late winter results which may be elevated due to excessive hydration or by release of K^+ due to soils expanding when they freeze.

Labor - Labor issues in the fall are not as intense compared to spring, when all hands need to be on deck to get the crop planted. More resources can be devoted to soil sampling and lime spreading in the fall.

Reaction - Finely ground limestone takes 6 months or more to react and start raising the soil pH. Fall application provides more reaction time before the next crop is planted.

Why is pH so important?

Nutrient Availability - Soil pH has a profound effect on the availability of nutrients for plant growth. Some nutrient elements are more available at low pH while others are more available at high pH (See Figure).

Phosphorus - At high pH calcium and magnesium are more soluble and will tie-up P. Iron and aluminum will also tie-up P at low pH.

Micronutrients - Micronutrients are strongly affected by soil pH. If the soil pH is very low, less than 4.5, aluminum and manganese can be soluble enough that the levels may be toxic to plants.

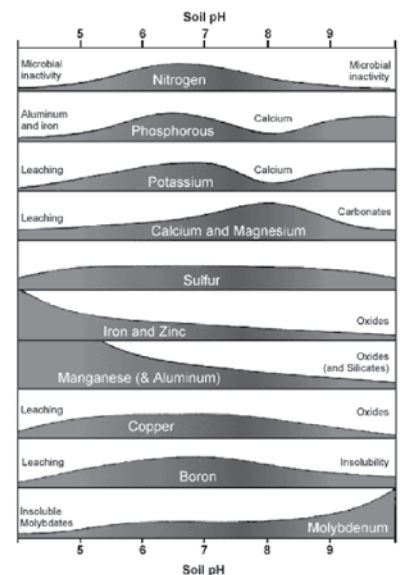
Our goal as agronomists and stewards of the land is to be as

efficient as possible in the use of fertilizer. The first goal should be to adjust the soil to the proper pH. It is important to know and understand what fits best for your particular crop. Since pH adjustment with ag-lime is usually addressed on an average of every 3 to 4 years, it is wise to coordinate that with your crop rotation. Different crops prefer certain pH ranges. For example, a rotation of corn, soybeans, and wheat prefer a pH around 6.5. Alfalfa likes pH at 6.8 to 7.0. Blueberries like a pH range between 5.0 and 5.5.

There are several tools available at www.algreatlakes.com to help understand lime quality and calculate the proper amount. Click the Factsheet icon on the home page and then access Factsheets 6, 7, 28 and 30 for information on different aspects of ag-lime.

Under the agricultural tab on our home page is a complete section on fertilizer/lime analysis. You will also find our Lime Quality Comparison Worksheet with information for many states throughout the eastern U.S.

If you have other questions about ag-lime, please contact one of our Certified Professional Agronomists.





Shipping Your Sample Investment

Each sample we receive represents a significant investment by a customer. There is often considerable time and effort involved in the sampling process. Collection of another sample would be an inconvenience at the least, and may not even be possible. Following are tips to help assure your samples arrive safely and can be processed efficiently.

- Containers - Use boxes and containers that are rated for the weight being shipped. Large and overweight packages are at greater risk of damage on the automated handling systems of shipping companies. Soil samples are relatively heavy for their size.

- We recently updated our medium and large “white” shipping boxes with a printed checklist on the box lid where you can indicate the type of samples contained within the box. This allows us to more efficiently route the box for processing. There is also an area on the box lid to indicate if the box is part of a set (ex. 1 of 3, 2 of 3, 3 of 3), which helps us determine if all samples are present.

- Include a submittal form or other paperwork in the package that lists each sample on a separate line. Your account number, complete address and customer/sample/test information should be on the

submittal form.

- Sample containers should be appropriate for the sample type. For example, do not send liquid samples in a zip-lock bag! We have the right bags and bottles available for different sample types. Check our website or contact us for information.

- Make sure all sample containers are securely fastened. Liquid samples (fertilizer, manure, etc.) are of particular concern as they might leak and contaminate other samples. Spend a few moments confirming that all containers are securely closed.

- Minimize empty space in packages. This reduces possible opening or breaking of sample containers. Use packing peanuts, newspaper, etc. to completely fill boxes.

- Include your return address on the package label. This gives a shipping company two contacts should there be a problem.

Please help us by properly packaging and shipping samples as well as including paperwork with complete information and instructions. This helps assure that we are able to process samples efficiently and provide the data and information you need.



Custom Submittal Forms Available

Did you know that sample submittal and chain-of-custody forms are available with your account number, business name and address already printed? For customers that fill out forms by hand this can be a real time-saver (still not as efficient as SoilTrak), and it also helps us clearly understand who is submitting samples. Contact us indicating what type of samples you submit and we will produce customized pdf submittal forms that you can print as needed.



Rules Changes Being Discussed for Land Application of Biosolids

The Indiana Department of Environmental Management is considering possible changes to 327 IAC 6.1, Land Application of Biosolid, Industrial Waste Product and Pollutant-Bearing Water. The Rule was instituted in 1998 and revised in 2003. Significant changes now being considered include enabling the use of updated analytical methods, new field sampling procedures, consideration of use of alum sludge, updating standards for processing facilities that market and distribute industrial waste products, standards for gypsum application, and establishing phosphorus application limits.

The topic being watched with most interest is P application limits. The current 40 CFR Part 503 EPA Standard for Biosolid Reuse and Disposal does not have P application limits. However, many states are considering or have already adopted P limits for biosolids. Regulation is being considered because movement of P in runoff from agricultural land to surface water can accelerate nutrient enrichment (eutrophication).

One option being discussed by IDEM is the adoption of a P index like the one used by NRCS (Natural Resources Conservation Service) for manure application. The P index uses parameters that can be used to assess the influence of phosphorus availability and its soil retention and movement. The index identifies erosion rates, runoff, soil test P levels, application rates, and application techniques. Soil analysis is considered an essential tool for using this assessment.

Following are the current Indiana NRCS guidelines:

Soil Test Phosphorus (Bray P1/Mehlich 3)	Basis for Nutrient Application
≤ 50 ppm	Application is nitrogen based
51-100 ppm	Application not to exceed 1.5 times crop P ₂ O ₅ removal*
101-200 ppm	Application not to exceed P ₂ O ₅ crop removal*
> 200 ppm	No Application

* Typical corn (grain) removal of P₂O₅ is 0.37 pounds/acre, or on 150 bushel/acre yield, 56 pounds per acre removal. For soybeans, removal of P₂O₅ is 0.8 pounds/acre, or on 50 bushel/acre yield, 40 pounds/acre removal.

IDEM is still in the process of determining how P application rates might be implemented in the rule update. All facts and information are being carefully reviewed and the goal of any new P regulation would be to provide a balance between science, environment, and beneficial biosolids management.

Environmental Report Format Changes

If you recently received a report of analysis for environmental testing, you may have noticed a change. In particular, we changed how detection limits are reported. Instead of referencing the “method detection limit” (MDL), we now reference the “method reporting limit” (MRL).

The MDL is the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by that specific method.

However, the MRL is the lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions.

Therefore, to take into account day-to-day fluctuations in instrument sensitivity, analyst performance, sample dilutions and sample interferences, the MRL is established above the MDL. Put another way, the MRL more accurately represents the sample(s) analyzed.

Our objective is to provide our customers with information that meets required discharge or project reporting limits. Let us know your reporting requirements, for we offer multiple formats. Contact us for more information on report format options or if you would like to know more on reporting limits.

Soil Fertility Workshops

Our Basic Soil Fertility Workshops continue to be a popular part of industry agronomists’ continuing education. This program is updated yearly to include new information pertinent to customer needs. CCA credits are available.

Following are dates and locations schedules for the upcoming season. A registration form is available on our website and clients will also receive reminders later this year.

2009	December 8	Fort Wayne, IN
	December 10	Birch Run, MI
2010	January 19	Grand Rapids, MI
	January 21	Findlay, OH
	February 9	Indianapolis, IN
	February 11	West Lafayette, IN
	February 23	Birch Run, MI
	March 3	Fort Wayne, IN

Meet Don Burgess



A & L Great Lakes Labs is proud to introduce our new agronomist, Don Burgess. Don joins the A & L Team from the USDA NRCS in Findlay, Ohio, where he worked for five years on various soil survey projects as a soil scientist and project leader. Don identified deficiencies in the existing soil survey information, and then collected and analyzed additional soils to add data to the survey maps. He was involved in managing project staff and worked closely with other agencies.

Although Don didn’t grow up on a farm, he became interested in agriculture early in his life, and was active in both 4-H and FFA. As an undergraduate and graduate student, Don was involved in field research plots, and spent time evaluating herbicides and scouting crops. Don received both his bachelors (BS - Horticulture and Crop Science) and masters (MS – Soil Science) degrees from The Ohio State University, and is the current president of the Association of Ohio Pedologists (which has nothing to do with feet, we discovered). Don is a Certified Crop Advisor and Certified Professional Soil Scientist and Soil Classifier.

Don received more than a BS and MS from OSU – he met his wife while studying in Columbus. Don and Megan married in May of 2002 and had a hurried honeymoon, as Don had to return for his geology mid-term. They live near Rawson, Ohio, and are the proud parents of Callie, who was born in April 2009. Don used to have free time prior to the addition of Callie, and he used to enjoy puttering around the house and working on his old pick-up truck. He hopes to have some free time again in 18 years (give or take).

Don Burgess joins Tim Bailey as our technical agronomists, and with two OSU graduates on our team, we know we have a couple of nuts to deal with.

Soil Sampling Partnerships

Our list of soil sampling partners continues to grow as the demand for soil analysis increases. If you are not able to get all of your scheduled acreage sampled this fall, contact us for a listing of independent soil sampling providers that service your area. Or, if you are in the business of collecting soil samples and would like to become part of our working relationship, give us a call.



Soil pH Automation

One of the most basic soil tests performed by an agricultural laboratory is the determination of soil pH. Even though it is a basic test, pH is one of the most important aspects of soil chemistry, strongly influencing soil nutrient availability.

With proper instrument calibration and consistent technique by analysts, we produce high quality soil pH results. However, when the laboratory runs thousands of soil samples daily, our current manual process is very tedious and also results in underutilization of experienced staff.

We have invested in new equipment, and this fall will start using robotic soil pH analysis systems. This will help us maintain (and hopefully improve) quality while increasing our capacity.

NELAC Process Update

NELAC (National Environmental Laboratory Accreditation Conference) accreditation is a big milestone for an analytical laboratory of any size. A&L Great Lakes Laboratories has committed much time and many resources into pursuing NELAC accreditation. We can finally see the "light at the end of the tunnel". Our primary accrediting authority has already been on site and conducted an audit. We are required to develop an action plan to address the findings. We look forward to completing our action plan and having our accreditation by the end of the year.



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