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SLAG Survey Results

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The NELAC Institute (TNI) Small Laboratory Advocacy Group (SLAG) conducted a survey of its members and other environmental laboratories to:

- Gain a better understanding of the demographics of our community;
- Gain a better understanding of the resources used by laboratories; and
- Gain a better understanding of the challenges faced by laboratories of different sizes (does size matter?)

A lab did not need to be a NELAP-accredited laboratory or a small laboratory to participate in the survey. There were 120 respondents to the survey representing 24 states and Puerto Rico. Approximately 60% of the respondents were water or wastewater utilities and 35% were commercial laboratories. The remaining 5% were from universities, government laboratories such as state health laboratories, mobile and industrial laboratories. The laboratories ranged in size from 1 to 27 full time employees with the majority of respondents having less than 10 full time employees. Labs with less than 10 people were generally the utility labs (72%) while the larger labs were predominately commercial laboratories (65%).

The majority (80%) of responding laboratories are either certified or accredited. Of those labs that are accredited/certified, 65% of the labs are not accredited/certified for all parameters for which they analyze. For these labs, either accreditation is not required for those parameters or accreditation is not available.

A number of non-accredited laboratories responded to the survey. The majority of non-accredited laboratories were utility labs who primarily analyzed non-potable water samples and had a staff size of < 5 individuals. The primary reasons for not obtaining accreditation were

1) accreditation was not required,
2) cost of accreditation and
3) the requirements to obtain/maintain accreditation were excessive including the number of proficiency test studies required per year.

A limited number of drinking water utilities indicated that they were not interested in obtaining NELAP accreditation due to

1) cost,
2) amount of documentation and
3) required number of proficiency study samples.

The accredited laboratories that responded to the survey estimate that approximately 30% of the laboratory workload is associated with quality control compared to the 20% estimated by the non-accredited labs.

The survey asked respondents about resources such as personnel, equipment and methods of training. The resources of a laboratory were impacted by the size of the laboratory. Smaller labs (< 10 people) had a greater percentage of personnel serving multiple roles in the laboratory such as one individual serving as laboratory director and QC officer. Many of the smaller utility labs had individuals performing laboratory and utility functions. Examples include a wastewater operator also serving as the laboratory analyst or the water plant manager also serving as the lab manager. Individuals in these labs also cited the challenge of keeping up with all of the regulations associated with their dual roles.

A laboratory information management system (LIMS) was utilized in only 38% of the small laboratories while it was utilized in 92% of the larger laboratories. *Is this important?* Yes. While a LIMS is not necessary for accreditation, it is a very useful tool for traceability. It significantly assists with assigning a unique identification to samples as required by the TNI Standard. It is invaluable in documenting reagent preparation and associating

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reagents and standards with analytical batches. Without a LIMS, the amount of paperwork associated with meeting the documentation and traceability requirements of the TNI standard increases.

Another area of difference between the large and small labs was the level of staff education. A college degree was required for all positions by 92% of the large laboratories while only 78% of the small laboratories required a college degree for any position. More of the large laboratories (70%) would send individuals to national conferences while less than 50% of the small laboratories had anyone attend a national conference. Webcasts and local training events were well attended by staff from large and small laboratories.

The use of TNI resources did not appear to be influenced by the size of the laboratory. The TNI Educational Delivery System was utilized by 33% of the small laboratories and 34% of the large laboratories. Small and large laboratories are equally using the TNI Quality Manual Template (61% and 66% respectively) and the TNI Small Lab Handbook (27% and 24% respectively.) Laboratories, regardless of size, are visiting the TNI website approximately once a month.

The survey included questions related to the greatest challenges and rewards associated with accreditation. The top challenges cited by survey respondents were 1) keeping up with the required documentation, and 2) the costs associated with accreditation. The challenges with accreditation were voiced by all labs. As many large labs as small labs were concerned with keeping up with documentation and costs. The challenges were experienced by all laboratories regardless of size.

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The benefits cited by the labs were universal. Regardless of the size of the laboratory the top cited benefits of accreditation were

1) increased confidence in the data,
2) the increase usability of the data and
3) recognition of meeting high quality standards.

SLAG is extremely happy that so many laboratories participated in the study. It has provided us a better understanding of:

- the demographics of the small laboratory community,
- the accreditation challenges faced by all laboratories, and
- the TNI resources utilized by laboratories.

A copy of the study results was provided to each participant. There is so much more information that can be mined from the results than can be presented in this article. A big ***THANK YOU*** to all the participating laboratories!