

## **Are you looking for an accredited parameter that does not appear to be on the scope of testing for a particular laboratory?**

Clients and regulators need to be aware that the results of some parameters may be an addition or subtraction of two or more test results, and that these calculated results do not appear on accredited scopes of testing. The main reason for this is that the standard used to assess laboratories, CAN-P-4D (ISO/IEC 17025), specifies general requirements for the competence of environmental testing laboratories to carry out tests – not do calculations.

### **Common Parameters that are the Result of a Calculation**

There are some common tests that are typically done by calculation. Listed below are some examples of what you might find on a scope of accreditation, and which parameters that laboratory may be doing by calculation.

- 1) Using a colourimetric method, a laboratory is typically accredited for:  
Nitrate plus nitrite (NO<sub>3</sub> + NO<sub>2</sub>)  
Nitrite (NO<sub>2</sub>)

In this case, nitrate will not show up on the scope because nitrate is calculated as follows:

$$\text{Nitrate (NO}_3\text{)} = (\text{NO}_3 + \text{NO}_2) - \text{NO}_2$$

- 2) Using ion chromatography (IC), a laboratory's scope will be as follows:  
Nitrate (NO<sub>3</sub>)  
Nitrite (NO<sub>2</sub>)

In this case, Nitrate plus nitrite (NO<sub>3</sub> + NO<sub>2</sub>) will not appear on the scope because this result is obtained by summing the two individual results; i.e.,

$$\text{NO}_3 + \text{NO}_2 = \text{Nitrate (NO}_3\text{)} + \text{Nitrite (NO}_2\text{)}$$

- 3) Hardness

A laboratory may be accredited to determine hardness by titration. Alternatively, hardness is calculated as follows:

$$\text{Hardness} = \text{Calcium x meq for Ca} + \text{Magnesium x meq for Mg}$$

Other examples:

Total Chlordane = gamma-Chlordane + alpha-Chlordane

Total Nitrogen = Total Kjeldahl Nitrogen + Nitrate + Nitrite

Organic Nitrogen = Total Kjeldahl Nitrogen – (Ammonia+Ammonium)

Aldrin + Dieldrin (this aggregate will not appear on the scope but each individual component will appear)

Atrazine + N-dealkylated metabolites (this aggregate will not appear on the scope but each individual component will appear)

DDT + metabolites = o,p'-DDT + p,p'-DDT + p,p'-DDD + p,p'DDE

Total Trihalomethanes = Bromodichloromethane + Bromoform + Chlorodibromomethane + Chloroform

Total Haloacetic acids

Total Xylenes = m/p-xylene + o-xylene

Heptachlor + Heptachlor Epoxide

This list is not exhaustive, and it is recommended that clients or regulators contact the laboratory if in doubt as to why a parameter is not appearing on the scope. If you require further information, please contact:

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