



Classification of errors Corrective Actions

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Different kind of errors

- Constant systematic errors, due to
 - increased blank values
 - incomplete recovery
- Proportional systematic errors, due to
 - wrong calibration
 - dilution errors
 - wrong calculation / wrong unit
- Gross and indefinable errors, due to
 - anything



How to identify the kind of error?

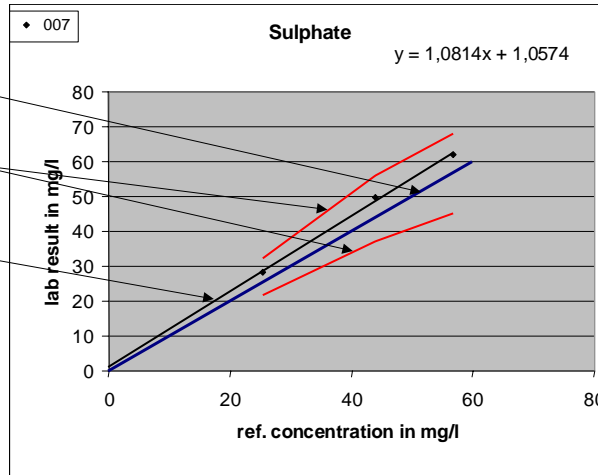
- Graphical display of analytical result vs. assigned value

100 % recovery

tolerance limits

linear regression line

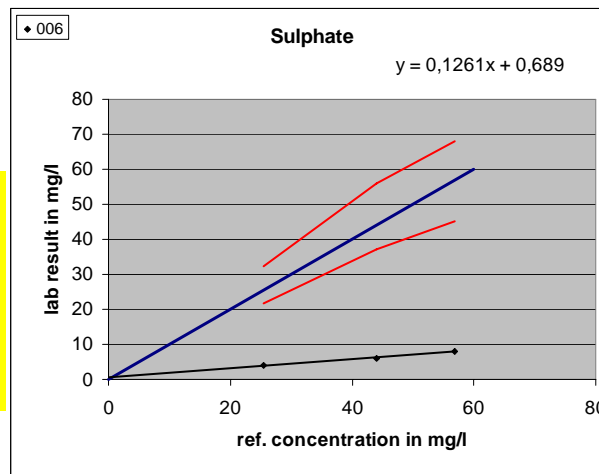
good analysis!
No serious error



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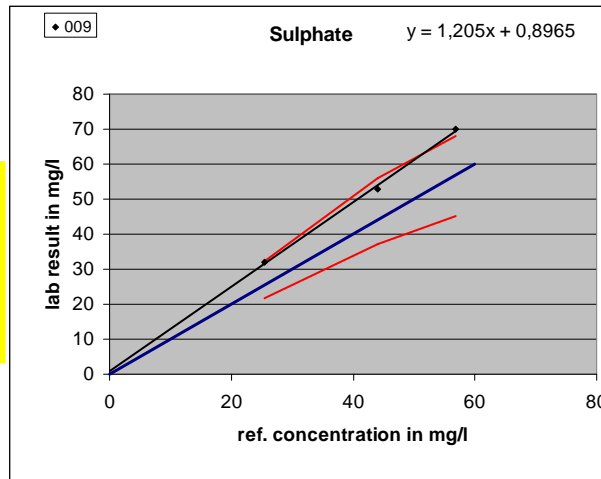
proportional systematic error!
Dilution error,
calibration error
or gross calibration error



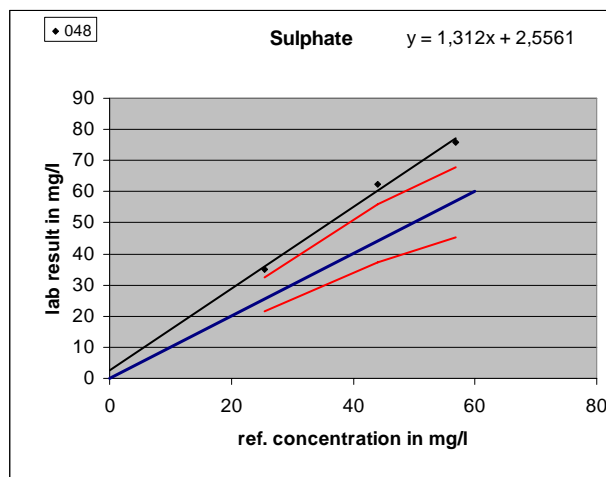
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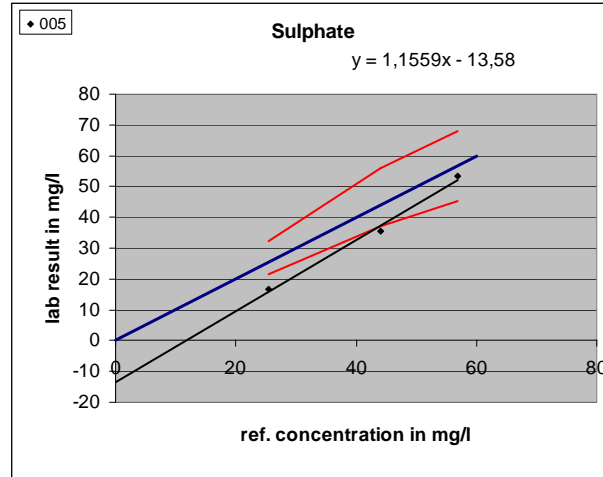
proportional systematic error!
calibration error,
leading to results
just at the limit



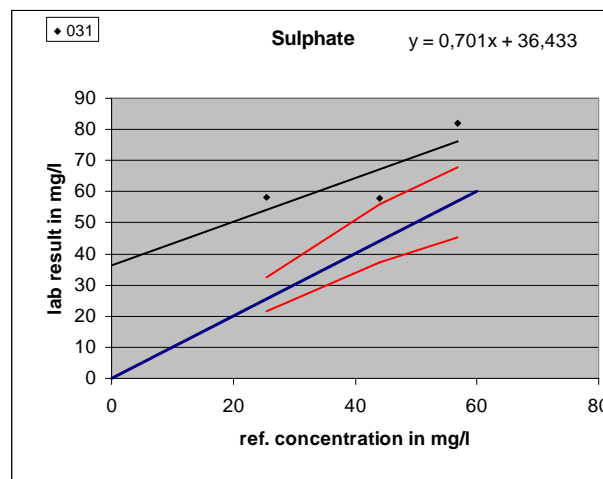
proportional systematic error!
calibration error,
leading to results
beyond the limit



constant systematic error? recovery too low?



indefinable, gross error





What corrective actions to apply?

- If you found a proportional systematic error:
 - Check calibration
- Check for precision using internal quality control data (Control Charts)
- Check for bias using a certified or in-house reference material
- If you can't find the problem, carry out full method validation