The Impact of Professional Judgment to Final Data Usability

Eric Strout
Consulting Environmental Chemist





Typical language from a QAPP:

Laboratory analytical data packages will be validated in accordance with the EPA National Functional Guidelines (NFG) for Inorganic Superfund Data Review (EPA540-R-10/011, January 2010) and the EPA NFG for Superfund Organic Methods Data Review (EPA540/R-07/003, June 2008).







For Organics:

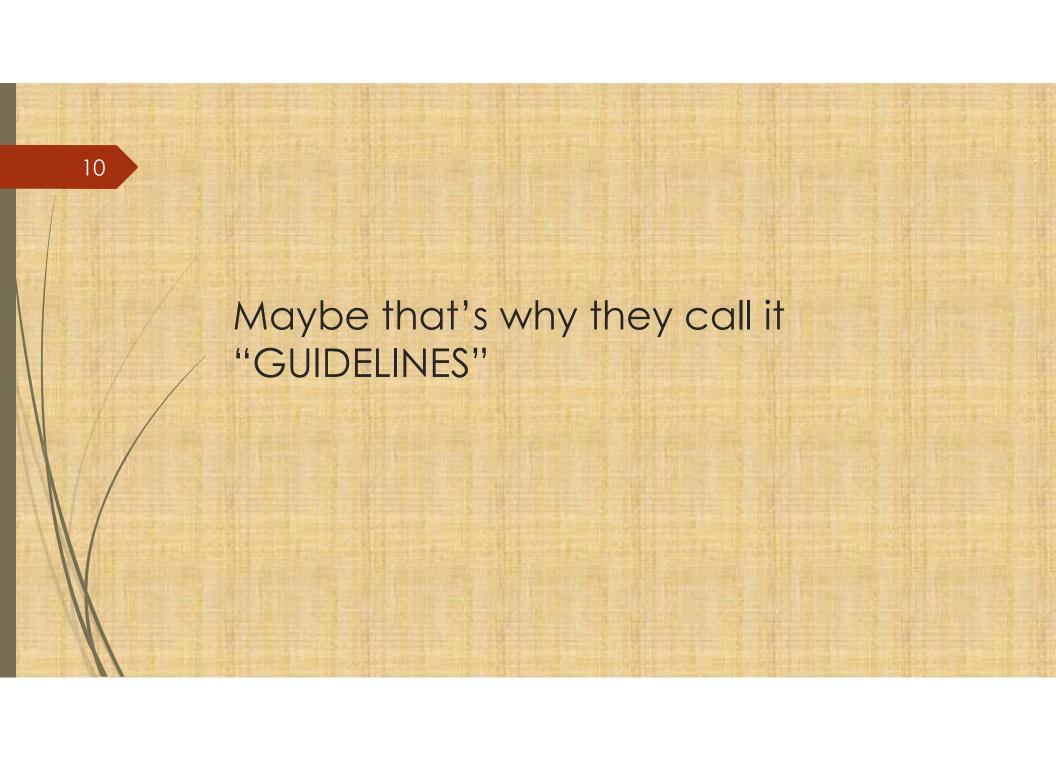
1994 108 citations

1999 104 citations

2005 203 citations

2008 266 citations

2014 361 citations



Language from 2014 NFG introduction:

Limitations of Use:

"This guidance is specific to the review of analytical data generated using CLP SOW SOM02.2."

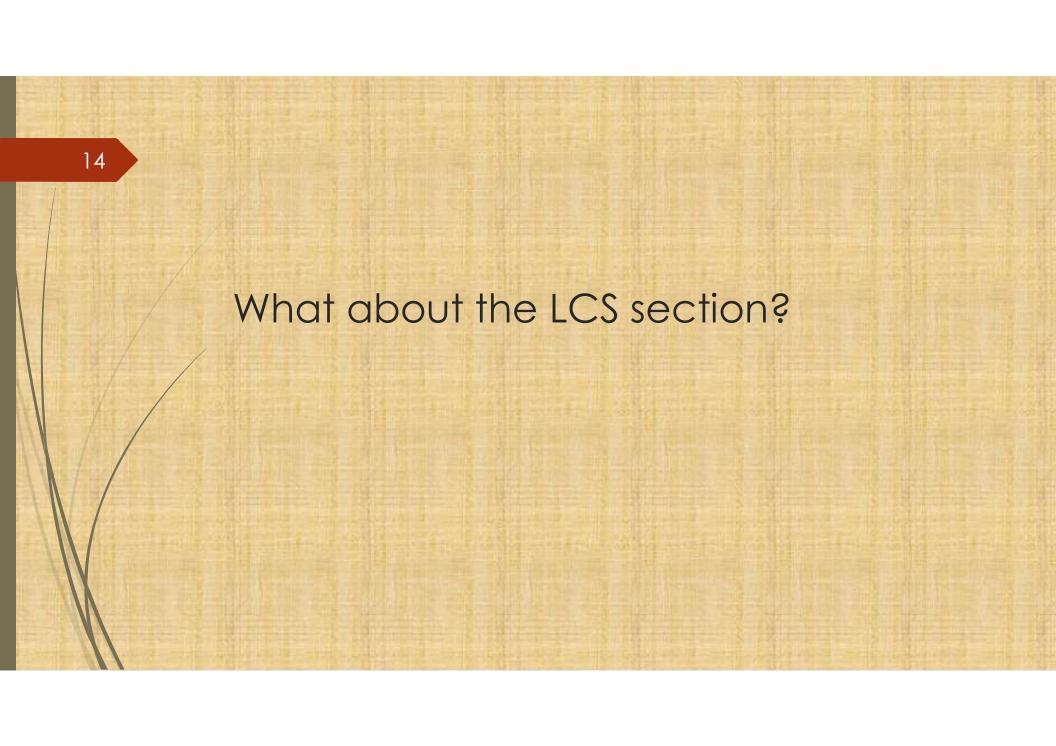
Language from 2014 NFG introduction:

Limitations of Use:

"While this document is a valuable aid in the formal data review process, other sources of guidance and information, along with professional judgment, are useful in determining the ultimate usability of the data. This is particularly critical in those cases where all data do not meet SOW-specific technical and QC criteria."

Sections of NFG with Significant PJ Calls

- Sample Handing
- Instrument Tuning
- Calibrations
- Method Blanks
- Surrogates
- MS/MSD
- Compound Identification
- System Performance



Sample Handling (Preservation and Holding Times)

- If samples are received with shipping container temperatures > 6°C, use professional judgment to qualify detects and non-detects.
- If samples are received with shipping container temperatures > 10°C, use professional judgment to determine the reliability of the data

Initial Calibration

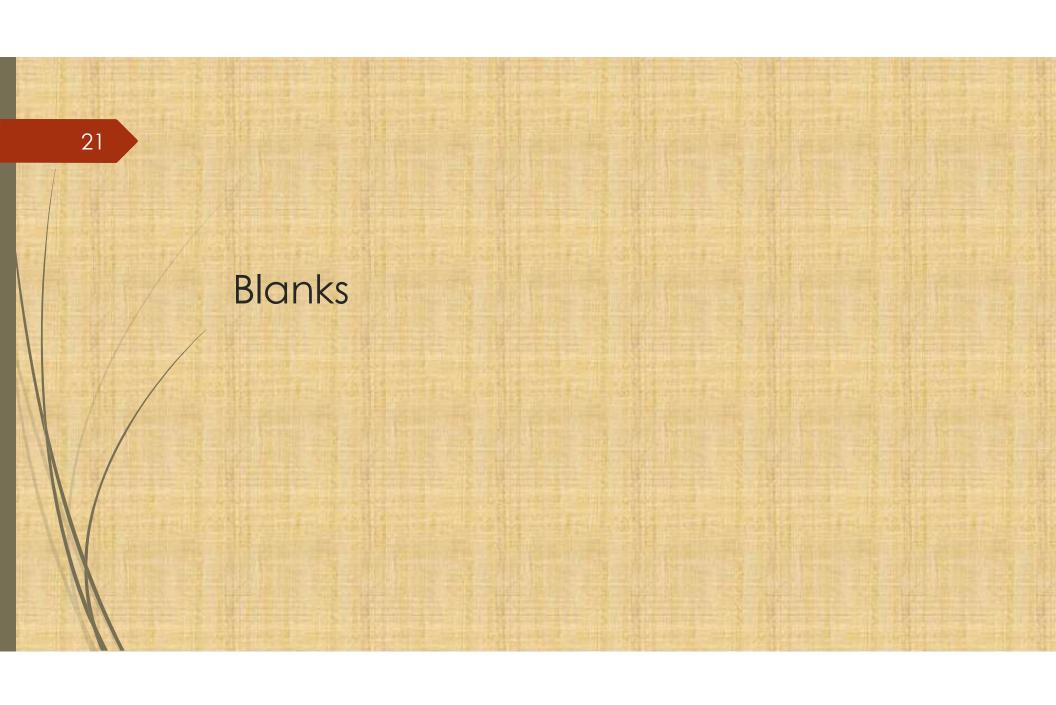
Use PJ to:

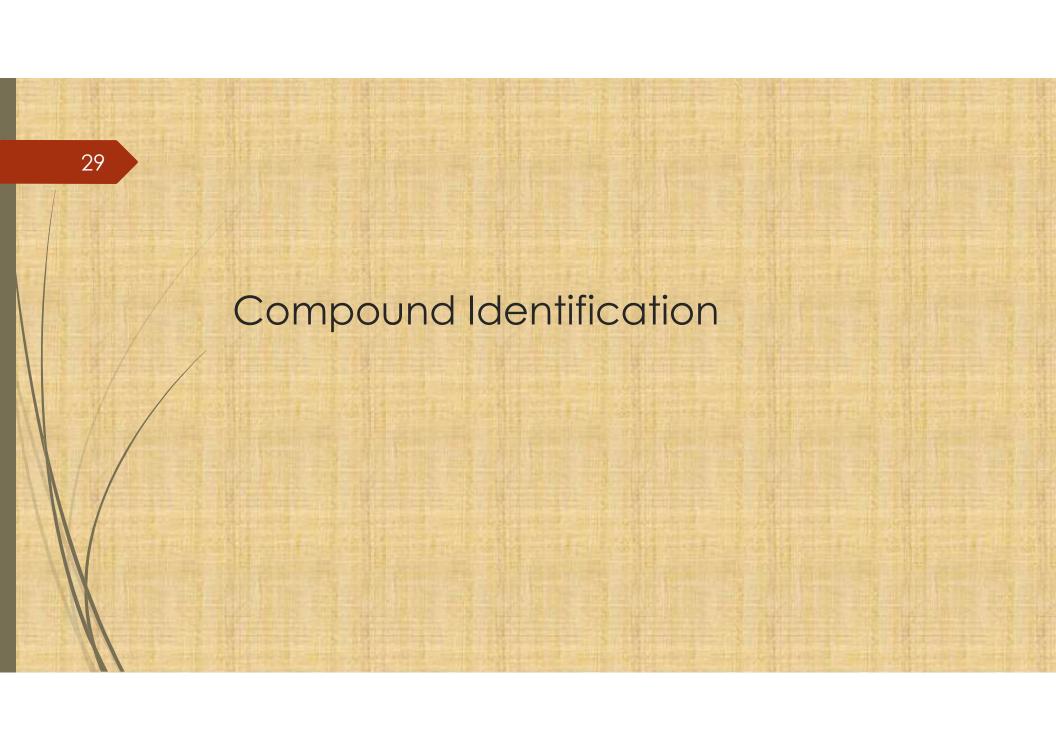
- Potentially reject all data if frequency requirements are not met
- Potentially reject detected results associated with a low RRF value
- Decide whether to qualify non-detects associated with a %RSD outlier
- Decide whether an outlier is 'ok' if you throw out the high or low point

Continuing Calibration

Use PJ to:

- Potentially reject all data if frequency requirements are not met
- Potentially reject detected results associated with a low RRF value
- Potentially qualify all data if an inappropriate concentration is used
- But no discussion of NOT estimating non-detects if a high bias is noted!





Take Away

- National Functional Guidelines are...guidelines
- NFG applies only loosely to SW846 and/or other programs
- PJ calls should be based on experience and expertise, because
- PJ calls can have a major impact on your reported results!
- PJ calls should be documented by the validation firm to ensure consistency and defensibility



A Fond Farewell

Thank you for attending my presentation...Questions??

My attendance at this conference is, in a way, my personal retrospective of 30+ years in the Environmental Quality industry. Thanks to all of my colleagues, friends and competitors for a interesting and challenging career.

Next up...a career in wine and food.

