

General Approach to Report Writing in General Chemistry

1 Scope

Reports issued by General Chemistry examiners summarize analytical findings. Due to the wide variety of requests and evidence received, this standard operating procedure is only a general guideline for report writing. It will not always be possible to write a report using only the examples provided here. It is acceptable to use other wording as long as the results of the examinations are accurately communicated, a summary of the methodology used to reach the results is included, any known limitations are addressed, and the wording is approved by a second examiner who is authorized in the discipline/sub-discipline during the technical review process. Additionally, any wording must comply with the *FBI Approved Standards for Scientific Testimony and Report Language for the General Chemistry Discipline* (GenChem ASSTR) and the *Department of Justice Uniform Language for Testimony and Reports for General Forensic Chemistry and Seized Drug Examinations* document (GenChem ULTR) documents.

This procedure applies to Chemistry Unit (CU) personnel that are qualified and authorized to generate *Laboratory Reports* in General Chemistry.

2 Equipment/Materials/Reagents

Not applicable.

3 Standards and Controls

Not applicable.

4 Sampling

Not applicable.

5 Procedure

- a. Prepare and format the *Laboratory Report* in accordance with requirements set forth in the *FBI Laboratory Operations Manual*. Prepare a **Results of Examinations** section, an **Interpretations/Limitations** section when applicable, and a **Remarks** section.

- b. The **Results of Examinations** section will be used to communicate the results of the General Chemistry examinations and a summary of the methodology used, and will include the requirements set forth in the *FBI Laboratory Operations Manual*. This section may also include a description of the items received or other information to assist in communicating the results. The below list contains guidance for the **Results of Examinations** section for General Chemistry reports. Examples of appropriate wording for the **Results of Examinations** section are included in Appendix A.
 - Include the units of quantitative results. When using an abbreviation for the units for the first time in a report, define the abbreviation for clarity.
 - Include the estimated measurement uncertainty value and the confidence level when reporting a quantitative value that was measured in the laboratory.
 - Report measurement uncertainty values to no more than two significant figures. When measurement uncertainty values are rounded, always round up.
 - Report the measurand to the same level of significance as the measurement uncertainty. Always truncate the measurand (e.g., 125.7 ± 25.2 will be reported as 125 ± 26).
 - Tables may be used to summarize results as long as all applicable elements above are included in the **Results of Examinations** section.

- c. The **Interpretations/Limitations** section will be used to communicate any known limitations of the results, or of the testing based on the evidence received. This section will also include any interpretations that may aid the reader in understanding the significance of the **Results of Examinations**. The below list contains guidance for the **Interpretations/Limitations** section for General Chemistry reports. Examples of appropriate wording for the **Interpretations/Limitations** section are included in Appendix A.
 - Where applicable, include a statement regarding the statistical sampling plan used, any inferences that were made, and the confidence level of the inferences.
 - Where applicable, include a statement regarding the limitations when non-statistical sampling was used on a heterogeneous item. Any results shall be limited to the sample(s) that was examined.
 - If relevant isomeric forms of a compound are not differentiated, this will be clearly stated.

- If examinations were limited based on the nature of the evidence (e.g., packaging, quantity, volume, degradation), this will be clearly stated.
 - Define any terminology relevant to the interpretation of a result (e.g., the phrase “consistent with”).
 - i. The terminology "consistent with" does not imply an identification of a specific chemical or product. A substance is termed "consistent with" when the analytical data does not support an identification of a specific chemical or product, but does provide reliable information to include the substance within a class of materials. The phrase "consistent with" is also used when an appropriate reference material could not be obtained (or was not analyzed).
- d. The **Remarks** section will include the requirements set forth in the *FBI Laboratory Operations Manual*. The below list contains additional guidance for the **Remarks** section for General Chemistry reports. Examples of appropriate wording for the **Remarks** section are included in Appendix A.
- May include any pertinent chemical or product information.
 - May include relevant controlled substance information (e.g., scheduling, brand names). However, the controlled status of delta-9-tetrahydrocannabinol will not be included for most scenarios unless it is specifically requested by the contributor.
 - May include commentary on potential for future examinations if additional items and/or intelligence is gathered.

6 Calculations

Not applicable.

7 Measurement Uncertainty

Not applicable.

8 Limitations

Every scenario cannot be anticipated. This standard operating procedure only serves as a general guideline.

9 Safety

Not applicable.

10 References

FBI Approved Standards for Scientific Testimony and Report Language for the General Chemistry Discipline (GenChem ASSTR)

Department of Justice Uniform Language for Testimony and Reports for General Forensic Chemistry and Seized Drug Examinations document (GenChem ULTR)

Rev. #	Issue Date	History
2	12/02/19	Removed 'subunit' throughout. Changed section 1 to 'Scope' and included applicable personnel. Added reference to 'GenChem ASSTR' and 'GenChem ULTR' in sections 1 and 10. Changed 'Limitations/Interpretations' to 'Interpretations/Limitations' throughout for consistency. Moved 'sampling/inferences' from 'Results of Examinations' to 'Interpretations/Limitations' section (also moved in Appendix). Moved 'product/chemical information' from 'Interpretations/Limitations' section to 'Remarks' (also moved in Appendix). Made edits throughout section 5 for clarity. Added "consistent with" definition to section 5c. Minor edits to section 8 for clarity. Appendices merged into one appendix and renamed as 'A'. Edited previous Appendix content throughout for clarity and consistency, and added additional examples.
3	04/01/21	Section 1- added "and authorized", added "sub-discipline". Section 5 (c)- minor grammatical change; 2 nd bullet- added "on a heterogeneous item"; 5 th bullet (i)- changed last sentence from "reference standard" to "reference material" and added "(or was not analyzed)". Section 5 (d), 2 nd bullet- added last sentence. <u>Appendix A- General Unknown and Synthetic Human Growth Hormone Analysis</u> - removed last sentence from "Interpretations/Limitations" sections; <u>Oleoresin Capsicum (OC) Sprays</u> - slight edits to last 2 sentences in "Interpretations/Limitations" section; <u>Drug Residue Analysis</u> - replaced IMS with DART in techniques listing.

Approval

Redacted - Signatures on File

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