OPCW **Conference of the States Parties**

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DECISION

SAMPLING AND ANALYSIS DURING INVESTIGATIONS OF ALLEGED USE OF CHEMICAL WEAPONS

The Conference

Recalling that the Commission, in its PC-XII/17, subparagraph 8.6 (b), adopted a document on "sampling and analysis during investigations of alleged use of chemical weapons",

Recalling that the Commission, when adopting the above document, took note of an understanding recorded in subparagraph 6.1 of PC-XII/B/WP.6,

Bearing in mind that the Commission recommended in paragraph 52.3 of its Final Report that the Conference adopt the above mentioned document,

Hereby:

1. **Adopts** the document on "sampling and analysis during investigations of alleged use of chemical weapons".

Annex

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Annex

SAMPLING AND ANALYSIS DURING INVESTIGATIONS OF ALLEGED USE OF CHEMICAL WEAPONS[1,2]

I. The time factor

1. Investigation teams would rarely if ever be expected to arrive at a site earlier than three to five days after the alleged use. This will be of importance for the sample-taking as well as for the analyses:

- evidence of original chemical weapon component(s) is of importance;
- absorbing substrates will be of special importance;
- low concentrations might be expected due to evaporation and degradation;
- only involatile degradation products might remain in environmental samples;
- degradation products might depend on the nature of the substrate;
- only metabolic degradation products might remain in biological samples;
- stable by-products may be an important factor in the identification process of the origin of any chemical weapons used.

II. Selection of samples

2. Initial chemical agent monitoring of the area under investigation will be necessary in order to establish the safety precautions required for the sampling operation. Such monitoring can at the same time be used to assist in the selection of promising sampling positions. Nevertheless, due to the anticipated levels of chemicals (trace levels) present in the samples, this may be a rather difficult task.

3. A number of features related specifically to cases of alleged use will also need to be taken into consideration. Some examples are:

(a) on-site analysis, where considered safe, possible and advisable, can support off-site analysis, due to possible decomposition of agents during transportation to designated laboratories;

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[1] As contained in Annex 6 of PC-XII/B/WP.6 in conjunction with subparagraph 6.1 of PC-XII/B/WP.6

[2] Nothing in this document shall be considered as constituting any interpretation of provisions of the Convention. It is therefore understood that this document cannot be used to justify measures other than provided for, or permitted under, the Convention. In this context, it is understood that no sampling on humans in accordance with the provisions of the Convention may be performed without the explicit consent of the individual(s) involved, following the provision of exhaustive information on all related aspects and potential consequences of such sampling. This agreement from the individual(s) shall be recorded taking due care that no external pressure has been exerted on the individual(s) to comply with the sampling request. The sample shall be taken solely for the purpose identified under the Convention, and no other use shall be authorised. In the case of an unconscious or dead person, the explicit consent, if possible, should be obtained from the family in accordance with the above procedures.

(b) analysis for the presence of trace chemicals may be required;

(c) the possible use of unscheduled chemicals must be considered;

(d) non-standard or special analytical procedures may need to be developed; and

(e) there will need to be high confidence that any positive detections are genuine, which might be difficult to accomplish if the chemical is unknown as stated in (c), and/or if different results are obtained by designated laboratories, which performed the analysis.

4. Sample-taking of biological/medical samples from persons allegedly exposed to chemical weapons requires special attention:

- informed consent from the persons is required;
- sample-taking only by the investigation team's own medical personnel;
- the person's name and medical history should be recorded and confidentiality of that data guaranteed.

5. Blank samples are essential, both for baseline determinations and for the preparation of spiked control samples. Blank samples should:

- as closely as possible resemble the actual samples taken;
- be taken in several areas close to the site of the alleged use but still not contaminated (it is essential for the designated laboratory performing the analysis, to ascertain that this has been achieved);
- be taken with extreme care in order to avoid cross-contamination, especially if the team just visited contaminated areas;
- in case of biological/medical samples (blood, urine, etc.), blank samples should be requested from unexposed local individuals forming an appropriate control group as uniform as possible under the circumstances.

III. Sample preservation and transportation

6. The preservation of a chain of custody is essential. This includes eliminating the risk for any cross-contamination during the continued handling. Such cross-contamination could arise, e.g. :

- during packaging of samples;
- during transportation through contaminated areas, including contamination present in the vapour phase;
- through contact with insufficiently decontaminated personal protective equipment;
- during the opening of the sample packages in a laboratory.

7. Samples and blanks must be kept under conditions to minimise the continued degradation of any chemicals present. This might involve, e.g.:

- preservation at low temperature;
- preservation under inert atmosphere, nitrogen only, under normal pressure;
- preservation in darkness.

8. Samples will usually have to be shipped via a commercial air carrier, using an approved transportation system. This means that very strict regulations will apply to packaging, and thus the investigation team will have to bring suitable packaging material and an approved transportation system.

IV. Sample preparation and sample splitting

9. Generally, it would be expected that the OPCW would handle the initial sample preparation and splitting. This might involve:

- preparation of split samples;
- preparation of blanks;
- preparation of blanks, spiked with known chemicals and/or their degradation products;
- labelling of samples, blanks and spiked blanks in such a way as to preclude laboratories which will perform the analysis from knowing which labels correspond to what.

10. If the sample size permits, a reference sample should be preserved in the OPCW custody until the investigation has been completed and the results have been studied by the States Parties.

V. Detailed chemical analysis off-site

11. Only designated laboratories will be used for the detailed chemical analysis off-site. Up to three laboratories should analyse each set of samples simultaneously. In the case of discrepancy in the results of their analyses further analyses should be performed.

12. The decision on what to analyse a sample for is a critical one. The investigation team should suggest groups of chemicals, if they are sure. In addition, if available, information related to the battlefield should be included. The OPCW Laboratory could add to this list on the basis of, e.g., observations during the sample preparations. The designated laboratories should be given sufficient background information on the samples, to include results of on-site analysis, if any, to allow also them to add to the list of groups of chemicals. The number of groups of chemicals to analyse for may be restricted by, e.g.:

- sample size;

- timing requirements for the final report.

13. The designated laboratories should report their results only to the Director-General. They should not be informed of which labels corresponded to which samples, blanks or spiked blanks until the investigation has been completed and the results have been studied by the States Parties.

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