OPCW **Technical Secretariat**

S/2282/2024
10 May 2024
ENGLISH only

NOTE BY THE TECHNICAL SECRETARIAT

REPORT OF THE FIFTY-SEVENTH MEETING OF THE VALIDATION GROUP FOR THE UPDATING OF THE OPCW CENTRAL ANALYTICAL DATABASE 10 AND 11 APRIL 2024

1. The Validation Group met on 10 and 11 April 2024 to discuss the evaluation of analytical data for possible inclusion in the OPCW Central Analytical Database (OCAD) and to consider matters related to this database. Mr Brian Mayer (United States of America) served as the Chairperson of the meeting. The meeting was held in a hybrid format, with some members attending in person and others joining via videoconference. Meetings addressing data review were held in accordance with the subgroup coordinators' preferences.

2. The evaluators for the analytical techniques evaluated new data and reported to the coordinators for each analytical technique. The names of the coordinators, along with the technique for which each was responsible, are listed below.

Mr Ethan Alex Jested (United States of America) (Acting)	Gas chromatography (retention index) (GC(RI))
Ms Hanna Hakulinen (Finland) (Acting)	Mass spectrometry (MS)
Mr Armando Alcaraz (United States of America)	Infrared (IR) spectroscopy
Mr Damian Magiera (Germany)	Nuclear magnetic resonance (NMR) spectroscopy

3. Mr Marc-Michael Blum (Germany) joined the Validation Group and was acknowledged and welcomed by the existing members. Ms Jina Wu (China), Mr Matthias Berger (Germany), and Mr Matti Kjellberg (Finland) acted as observers for this Validation Group meeting.

4. The Validation Group is actively recruiting new members. Nominations for membership are welcomed by any member of the chemical sciences community with recognised expertise in the field of analytical chemistry, and prospective members are not required to work for an OPCW designated laboratory. Nominations are provided to the OPCW Technical Secretariat by the nominee's National Authority and must include a curriculum vitae confirming their expertise.

5. The Validation Group recommended that submitting laboratories provide supplemental analytical data, preferably from orthogonal techniques, as needed, to aid the review of data submitted for approval in the OCAD. While these supplemental data need not also be submitted for approval in the OCAD, such submission is nevertheless encouraged by the Validation Group.

6. The Validation Group recommended that designated laboratories acting as sample preparation laboratories for Official OPCW Proficiency Tests provide data associated with spiking chemicals for evaluation for inclusion in the OCAD.

7. The Validation Group recommend that the chemical listed in the OCAD with CAS 1511-67-7 be renamed from methylphosphonic fluoride to methylphosphonofluoridic acid, to be consistent with accepted chemical naming rules. Furthermore, there was a discussion on editing the "Rules for Naming Compounds in the OCAD" to add relevant examples related to recommended changes. This update will be included in the release of the new version, OCAD v.26_2024.

8. The MS Subgroup recommended changing the resolution criteria to be more practical. It also reached a decision to remove the isotope ratio criteria from the submission requirements for gas chromatography-high resolution mass spectrometry (GC-HRMS) data. As a result of this action, seven data entries previously designated as "P" (postponed) from the fifty-sixth Validation Group meeting were approved. These compounds have been added to the summary in Table 5 in Annex 1 hereto and to Table 3 in Annex 3 hereto.

9. The NMR Subgroup discussed making changes to the information required when submitting NMR data and recommended that the "Procedures for the Evaluation of Data to Be Included in the OPCW Central Analytical Database" (Annex to S/2189/2023, dated 12 July 2023) be modified to better define how the spectral resolution should be calculated. It also recommended that the procedures be amended to require DX files to accompany submitted data. The Subgroup also discussed peak integrations and reference line width as requirements, but decided not to add those measurements at this time.

10. The NMR Subgroup has re-evaluated data entries 05-3-0183 to 05-3-0193 and 05-3-0098r and has decided to change their status to "N" (not accepted), owing to a lack of peak labelling in these spectra.

11. The IR Subgroup decided to recommend to the Executive Council (the Council) the removal of 55 IR data entries currently designated as "S" (suspended), since they are duplicates of other data entries. Additionally, the MS Subgroup has changed the evaluation of 04-2-0617ar (duplicative of 04-2-0617a, previously accepted into the OCAD) to "S", and recommended to the Council its removal from the OCAD. The MS and GC(RI) Subgroups have re-evaluated 24-2-0047 and 24-4-0024r as "S" and recommended to the Council their removal from the OCAD owing to an incorrect name and structure. These recommendations have been summarised in Annex 4 hereto.

12. The MS Subgroup has changed the status of 15-2-0122 and 15-2-0124 to "N" since resubmitted data were accepted in lieu of.

13. The coordinators provided an evaluation summary of the data submitted to the Validation Group for discussion at the meeting. The evaluators finalised their evaluation of the analytical data and confirmed that the approved data were technically valid.

14. This document presents the sets of validated analytical data on scheduled chemicals recommended for inclusion in the OCAD (Annex 1). Validated analytical data on non-scheduled chemicals relevant to the Chemical Weapons Convention are found in Annex 2 to this Note. Validated analytical data on relevant derivatives are found in Annex 3. Data recommended to the Council for removal are found in Annex 4 to this Note. Annex 5 lists the members and evaluators from the Validation Group.

15. The available data from all analytical techniques will be sent to the Validation Group at least six weeks before its next scheduled meeting, which is proposed to take place on 18 and 19 September 2024 at the OPCW Centre for Chemistry and Technology (ChemTech Centre). The evaluators agreed to send their evaluation reports to the appointed coordinators no later than 2 September 2024. The evaluators agreed to provide their individual data evaluations prior to the meeting and to come to the meeting prepared to finalise the evaluation of the analytical data provided to the Group. If travel to the ChemTech Centre is not possible, the evaluators may meet virtually.

Annexes:

Annex 1: Lists of Approved Data on Scheduled Chemicals Recommended for Inclusion in the OPCW Central Analytical Database

Annex 2: Lists of Approved Data on Non-scheduled Chemicals Relevant to the Chemical Weapons Convention and Recommended for Inclusion in the OPCW Central Analytical Database

Annex 3: Lists of Approved Data on Derivatives Relevant to the Chemical Weapons Convention

Annex 4: Lists of Chemicals Recommended for Removal by the Executive Council from the OPCW Central Analytical Database

Annex 5: List of Members of the Validation Group

Annex 1

LISTS OF APPROVED DATA ON SCHEDULED CHEMICALS RECOMMENDED FOR INCLUSION IN THE OPCW CENTRAL ANALYTICAL DATABASE

Note: In the "Decision" column of the tables that follow, "A" means "accepted" and "B" means "accepted subject to minor corrections".

TABLE 1: LIST OF APPROVED IR DATA ON SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision
04-1-0454v	2-Methylbutyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	A
04-1-0455v	1-Methylpentyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	A
04-1-0457v	Heptyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	A
04-1-0462v	1-Methyloctyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	A

TABLE 2: LIST OF APPROVED MS DATA ON SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision
04-2-0642	2-Methylbutyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0645	Heptyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0646a	1-Methylhexyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0646b	1-Methylhexyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0647a	1-Methylheptyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0647b	1-Methylheptyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0648	2-Ethylhexyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0649	Nonyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0650a	1-Methyloctyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0650b	1-Methyloctyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
04-2-0651	Decyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	B
36-2-0003	Diphenyl methylphosphonate	2.B.04	B

TABLE 3: LIST OF APPROVED NMR DATA ON SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision
23-3-0005	N-(1-(Diethylamino)ethylidene)-P-methylphosphonamidic fluoride	1.A.13	B
23-3-0006	N-(1-(Diethylamino)ethylidene)-P-methylphosphonamidic fluoride	1.A.13	B
23-3-0007	N-(1-(Diethylamino)ethylidene)-P-methylphosphonamidic fluoride	1.A.13	A
23-3-0008	N-(1-(Diethylamino)ethylidene)-P-methylphosphonamidic fluoride	1.A.13	A
23-3-0009	N-(1-(Diethylamino)ethylidene)-P-methylphosphonamidic fluoride	1.A.13	A
23-3-0010	Methyl N-(1-(diethylamino)ethylidene)phosphoramidofluoridate	1.A.14	B
23-3-0013	Methyl N-(1-(diethylamino)ethylidene)phosphoramidofluoridate	1.A.14	A
23-3-0014	Ethyl N-(1-(diethylamino)ethylidene)phosphoramidofluoridate	1.A.14	B
23-3-0017	Ethyl N-(1-(diethylamino)ethylidene)phosphoramidofluoridate	1.A.14	A

TABLE 4: LIST OF APPROVED GC(RI) DATA ON SCHEDULED CHEMICALS

Note: Under the "Column" heading for GC(RI) data, a "1" means an HP5 or an SE54 column, and a "2" means a DB-5MS column.

OPCW Code	Chemical Name	Schedule	Column	RI(a)	RI(b)	Decision
04-4-0451	2-Methylbutyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	1587		A
04-4-0452	1-Methylpentyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	1634	1647	A
04-4-0453	2-Methylpentyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	1672		A
04-4-0454	Heptyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	1824		A
04-4-0455	1-Methylhexyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	1725	1733	A
04-4-0456	1-Methylheptyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	1828	1836	A
04-4-0457	2-Ethylhexyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	1836		A
04-4-0458	Nonyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	2028		A
04-4-0459	1-Methyloctyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	1920	1930	A
04-4-0460	Decyl N-ethyl-N-propylphosphoramidocyanidate	1.A.02	1	2132		A
36-4-0001	Diisopropyl methylphosphonate	2.B.04	1	1074		A
36-4-0003	Diphenyl methylphosphonate	2.B.04	1	1895		A
28-4-0053[1]	Phenyl N,N-dimethyl-P-methylphosphonamidate	2.B.04	1	1530		A

[1] Data submission previously evaluated during the thirty-seventh meeting of the Validation Group.

TABLE 5: LIST OF APPROVED GC–HRMS DATA ON SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision
02-7-0003	Bis(trimethylsilyl) methylphosphonate	2.B.04	B
02-7-0004	Ethyl trimethylsilyl methylphosphonate	2.B.04	B
02-7-0005	Isopropyl trimethylsilyl methylphosphonate	2.B.04	B
14-7-0001	Bis(trimethylsilyl) methylphosphonate	2.B.04	A
14-7-0002	Ethyl trimethylsilyl methylphosphonate	2.B.04	A
14-7-0003	Isopropyl trimethylsilyl methylphosphonate	2.B.04	A

Annex 2

LISTS OF APPROVED DATA ON NON-SCHEDULED CHEMICALS RELEVANT TO THE CHEMICAL WEAPONS CONVENTION AND RECOMMENDED FOR INCLUSION IN THE OPCW CENTRAL ANALYTICAL DATABASE

Note: In the "Decision" column of the tables that follow, an "A" means "accepted," and a "B" means "accepted subject to minor corrections".

TABLE: LIST OF APPROVED MS DATA ON NON-SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision	Justification	Classification
32-2-0003	1,3-Bis(vinylthio)propane	NS	A	Reaction by-product or degradation product of 1.A.04	NDP(1A04)[2]
36-2-0002	4,4-Dioxo-1,4-oxathiane	NS	B		

[2] Non-scheduled precursors, degradation products, or known synthesis impurities or by-products related to schedule 1.A.04.

Annex 3

LISTS OF APPROVED DATA ON DERIVATIVES RELEVANT TO THE CHEMICAL WEAPONS CONVENTION

Note: In the "Decision" column of the tables that follow, an "A" means "accepted," and a "B" means "accepted subject to minor corrections".

TABLE 1: LIST OF APPROVED MS DATA ON DERIVATIVES[3]

OPCW Code	Chemical Name	Schedule	Decision
07-2-3023	N,N-Dimethyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3024	N-Ethyl-N-methyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3025	N-Methyl-N-propyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3026	N-Isopropyl-N-methyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3027	N,N-Diethyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3028	N-Ethyl-N-propyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3029	N-Ethyl-N-isopropyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3030	N,N-Dipropyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3031	N-Isopropyl-N-propyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3032	N,N-Diisopropyl-N-(2-trimethylsilylthioethyl)amine	DS	A
07-2-3034	N-Ethyl-N-methyl-N-(2-trimethylsilyloxyethyl)amine	DS	A
07-2-3035	N-Methyl-N-propyl-N-(2-trimethylsilyloxyethyl)amine	DS	A
07-2-3036	N-Isopropyl-N-methyl-N-(2-trimethylsilyloxyethyl)amine	DS	A
07-2-3038	N-Ethyl-N-propyl-N-(2-trimethylsilyloxyethyl)amine	DS	A
07-2-3039	N-Ethyl-N-isopropyl-N-(2-trimethylsilyloxyethyl)amine	DS	A
07-2-3040	N,N-Dipropyl-N-(2-trimethylsilyloxyethyl)amine	DS	A
07-2-3041	N-Isopropyl-N-propyl-N-(2-trimethylsilyloxyethyl)amine	DS	A
07-2-3042	N,N-Diisopropyl-N-(2-trimethylsilyloxyethyl)amine	DS	A

[3] These data submissions were previously evaluated during the Thirty-Fourth Meeting of the Validation Group.

TABLE 2: LIST OF APPROVED GC(RI) DATA ON DERIVATIVES[3]

Note: Under the "Column" heading for GC(RI) data, a "1" means an HP5 or an SE54 column, and a "2" means a DB-5MS column.

OPCW Code	Chemical Name	Schedule	Column	RI(a)	Decision
07-4-2786	N,N-Dimethyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1116	A
07-4-2787	N-Ethyl-N-methyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1191	A
07-4-2788	N-Methyl-N-propyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1265	A
07-4-2789	N-Isopropyl-N-methyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1266	A
07-4-2790	N,N-Diethyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1252	A
07-4-2791	N-Ethyl-N-propyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1324	A
07-4-2792	N-Ethyl-N-isopropyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1310	A
07-4-2793	N,N-Dipropyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1396	A
07-4-2794	N-Isopropyl-N-propyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1382	A
07-4-2795	N,N-Diisopropyl-N-(2-trimethylsilylthioethyl)amine	DS	2	1369	B
07-4-2797	N-Ethyl-N-methyl-N-(2-trimethylsilyloxyethyl)amine	DS	2	1003	A
07-4-2798	N-Methyl-N-propyl-N-(2-trimethylsilyloxyethyl)amine	DS	2	1063	A
07-4-2799	N-Isopropyl-N-methyl-N-(2-trimethylsilyloxyethyl)amine	DS	2	1063	A
07-4-2801	N-Ethyl-N-propyl-N-(2-trimethylsilyloxyethyl)amine	DS	2	1117	A
07-4-2802	N-Ethyl-N-isopropyl-N-(2-trimethylsilyloxyethyl)amine	DS	2	1106	A
07-4-2803	N,N-Dipropyl-N-(2-trimethylsilyloxyethyl)amine	DS	2	1185	A
07-4-2804	N-Isopropyl-N-propyl-N-(2-trimethylsilyloxyethyl)amine	DS	2	1174	A
07-4-2805	N,N-Diisopropyl-N-(2-trimethylsilyloxyethyl)amine	DS	2	1164	A

TABLE 3: LIST OF APPROVED GC-HRMS DATA ON DERIVATIVES

OPCW Code	Chemical Name	Schedule	Decision
14-7-0005	Bis(2-trimethylsilyloxyethyl)sulfide	DS	A

Annex 4

LISTS OF CHEMICALS RECOMMENDED FOR REMOVAL BY THE EXECUTIVE COUNCIL FROM THE OPCW CENTRAL ANALYTICAL DATABASE

TABLE 1: LIST OF IR DATA RECOMMENDED FOR REMOVAL FROM THE OCAD[4]

OPCW Code	Chemical Name	Schedule
04-1-0046	Decyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0045	Nonyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0044	Octyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0043	Heptyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0042	Hexyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0041	Pentyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0040	Butyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0039	Propyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0038	Ethyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0037	Methyl N-methyl-N-propylphosphoramidocyanidate	1.A.02
04-1-0036	Decyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0035	Nonyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0034	Octyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0033	Heptyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0032	Hexyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0031	Pentyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0030	Butyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0029	Propyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0028	Ethyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0027	Methyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02
04-1-0026	Pentyl N,N-diisopropylphosphoramidocyanidate	1.A.02
04-1-0025	Butyl N,N-diisopropylphosphoramidocyanidate	1.A.02
04-1-0024	Propyl N,N-diisopropylphosphoramidocyanidate	1.A.02
04-1-0023	Ethyl N,N-diisopropylphosphoramidocyanidate	1.A.02
04-1-0022	Methyl N,N-diisopropylphosphoramidocyanidate	1.A.02

[4] These data entries are recommended for removal by the Council since they are duplicates of existing data entries in the OCAD.

OPCW Code	Chemical Name	Schedule
04-1-0021	Pentyl N,N-dipropylphosphoramidocyanidate	1.A.02
04-1-0020	Butyl N,N-dipropylphosphoramidocyanidate	1.A.02
04-1-0017	Methyl N,N-dipropylphosphoramidocyanidate	1.A.02
13-1-0011	Bis(2-chloroethylthioethyl)ether	1.A.04
13-1-0010	1,2-Bis(2-chloroethylthio)ethane	1.A.04
13-1-0008	Bis(2-chloroethyl)sulfide	1.A.04
04-1-0003	Isopropylphosphonic difluoride	1.B.09
04-1-0002	Ethylphosphonic difluoride	1.B.09
13-1-0006	Methyl pinacolyl methylphosphonate	2.B.04
13-1-0005	Diisopropyl methylphosphonate	2.B.04
13-1-0004	Bis(trimethylsilyl) methylphosphonate	2.B.04
13-1-0003	Dimethyl methylphosphonate	2.B.04
10-1-0115	Ethyl methylphosphinate	2.B.04
04-1-0012	Dibutyl propylphosphonate	2.B.04
04-1-0011	Dimethyl propylphosphonate	2.B.04
04-1-0010	Ethyl methyl ethylphosphonate	2.B.04
04-1-0005	N,N-Diethylphosphoramidic dichloride	2.B.05
04-1-0009	Diethyl N,N-diethylphosphoramidate	2.B.06
04-1-0008	Ethyl methyl N,N-diethylphosphoramidate	2.B.06
04-1-0007	Dimethyl N,N-diethylphosphoramidate	2.B.06
13-1-0019	3-Quinuclidinol	2.B.09
13-1-0018	2-(N,N-Diisopropylamino)ethanol	2.B.11
03-1-0008	Bis(2-hydroxyethyl)sulfide	2.B.13
13-1-0017	3,3-Dimethylbutan-2-ol	2.B.14
06-1-0040	Carbonyl dichloride	3.A.01
08-1-0035	Cyanogen chloride	3.A.02
08-1-0037	Hydrogen cyanide	3.A.03
03-1-0006	Triethyl phosphite	3.B.09
13-1-0007	Dimethyl phosphite	3.B.10
03-1-0009	Dimethyl phosphite	3.B.10

TABLE 2: LIST OF MS DATA RECOMMENDED FOR REMOVAL FROM THE OCAD

OPCW Code	Chemical Name	Schedule	Justification
24-2-0047	2-Hydroxyethyl vinyl sulfone	NS	Incorrect name and structure
04-2-0617ar	1,4-Dimethylpentyl N-ethyl-N-methylphosphoramidocyanidate	1.A.02	Duplicative; 04-2-0617a previously accepted into the OCAD

TABLE 3: LIST OF GC(RI) DATA RECOMMENDED FOR REMOVAL FROM THE OCAD

OPCW Code	Chemical Name	Schedule	Justification
24-4-0024r	2-Hydroxyethyl vinyl sulfone	NS	Incorrect name and structure

Annex 5

LIST OF MEMBERS OF THE VALIDATION GROUP

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* The evaluator was present at this meeting of the Group and provided a written evaluation.

** The evaluator attended the meeting virtually and provided a written evaluation.

† The evaluator provided a written evaluation but did not attend the meeting.

The evaluator was present at the meeting but did not provide a written evaluation.

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