REPORT BY THE CHAIRPERSON OF THE EXECUTIVE COUNCIL

VISIT BY THE CHAIRPERSON OF THE EXECUTIVE COUNCIL, THE DIRECTOR-GENERAL, AND REPRESENTATIVES OF THE EXECUTIVE COUNCIL TO THE PUEBLO CHEMICAL AGENT-DESTRUCTION PILOT PLANT COLORADO, UNITED STATES OF AMERICA
6 – 11 APRIL 2019

Introduction

1. In its decision entitled the “Final Extended Deadline of 29 April 2012” (C-16/DEC.11, dated 1 December 2011), the Conference of the State Parties (hereinafter “the Conference”) decided that Libya, the Russian Federation, and the United States of America should invite the Chairperson of the Executive Council (hereinafter “the Council”), the Director-General of the OPCW Technical Secretariat (hereinafter “the Secretariat”), and a delegation representing the Council to visit and obtain an overview of the destruction programmes being undertaken in those countries. The Conference further decided that these visits were to include visits to destruction facilities as well as meetings with parliamentarians, if possible, and government officials in capitals, as a formal part of the visits. Invitations were also to be extended to observers to participate in the Council delegation.

2. In pursuance of decision C-16/DEC.11, the United States of America invited the Council to visit the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) in Colorado from 6 to 11 April 2019. To facilitate the visit, the United States provided a general outline of logistical, operational, and safety considerations (see Annex 1) and initiated consultations with the Chairperson of the Council to develop the specific details of the visit, including timing, schedule, itinerary, and composition of the visiting group.

3. Subsequent to consultations within the various regional groups and in line with the aforementioned decision of the Conference, the Council delegation that visited the Pueblo facility comprised the Chairperson of the Council, Ambassador Jana Reinišová of the Czech Republic, the Director-General, Mr Fernando Arias, representatives of State Parties, and Secretariat staff members.

4. The Secretariat made the necessary funds available to the Chairperson of the Council. All other participants bore their own expenses incurred for the visit.

5. This report is presented by the Chairperson of the Council after consultations with the representatives of the Council in the delegation.
6. In preparation for the visit, the members of the Council delegation were briefed by the Permanent Representation of the United States of America to the OPCW on administrative and logistical arrangements, as well as on the programme of the visit.

7. The visit took place from 6 to 11 April 2019. Over this time the delegation was informed about technical and background matters, was taken on a site tour, met representatives of the local community, and had discussions with senior officials and representatives of the United States (the itinerary of the visit can be found in Annex 2 to this report). The list of the members of the delegation can be found in Annex 3 to this report, and the list of the representatives of the United States who hosted the visit in Annex 4. The delegation was escorted by representatives of the Host State Party.

Presentations by representatives of the United States of America

8. Upon arrival to Colorado Springs, Colorado and completion of the safety procedures, Dr Charles Ball, United States Deputy Assistant Secretary of Defense for Threat Reduction and Arms Control, welcomed the delegation. Dr Ball noted the challenging times faced by the Director-General and the OPCW and further expressed appreciation to the Council Chairperson for her leadership over the past year. Dr Ball emphasised the ongoing commitment of the United States to meet or exceed the established timelines for the destruction of its remaining chemical weapons stockpile.

9. Ambassador Kenneth Ward, Permanent Representative of the United States of America to the OPCW, in his opening remarks recalled the history and purpose of Council visits and reaffirmed the commitment of the United States to its obligations under the Chemical Weapons Convention (hereinafter “the Convention”), and that the destruction of chemical weapons in a safe and environmentally friendly manner was a policy imperative of this State Party.

10. The Chairperson of the Council, on behalf of the Council delegation, noted that the Council representatives were prepared to witness the progress achieved and view the plans to meet the destruction timelines. She thanked the United States delegation for its invitation, underlined the importance of the visit for the other States Parties expecting the United States to successfully meet its destruction timelines, and urged the United States not to exceed them. The Chairperson of the Council expressed her gratitude for the United States’ hospitality and underlined her appreciation for all the efforts that had been made in organising the visit. She further indicated that the Council delegation was looking forward to learning more about the destruction facility.

11. The Director-General thanked the representatives of the United States for facilitating the visit to see the progress of destruction operations of its declared chemical weapons stockpiles. He acknowledged the time that it has taken to destroy 97% of the world’s declared stockpiles and the need to work in full transparency. The Director-General recalled the success of the United States in reaching beyond its boundaries by assisting with the destruction of chemical weapons in Albania, the Russian Federation, Libya, and the Syrian Arab Republic. He further recognised the contributions towards advancing technical expertise and knowledge to allow for greater capacity building. The Director-General noted that the commitment of the
United States to fulfill its obligations had been widely acknowledged, and that its cooperation, openness, and transparency were highly appreciated.

12. A number of detailed presentations were provided to the visiting delegation in Colorado Springs prior to arrival in Pueblo, Colorado. The briefings were an opportunity for the delegation to become familiar with the Assembled Chemical Weapons Alternatives (ACWA) programme, current destruction technologies, as well as future planned destruction methods.

13. Mr Craig Campbell, Principal Director for Threat Reduction and Arms Control, provided an overview of the conduct of the visit.

14. Mr Michael Abaie, Programme Executive Officer (PEO) for ACWA, provided an overview of ACWA, which had been established in 1996 under a mandate from the United States Congress in order to identify alternatives to incineration for the destruction of assembled chemical weapons located at the storage sites in Pueblo, Colorado and Blue Grass, Kentucky. Following a comprehensive process of research into various technologies that involved numerous governmental agencies, the chemical industry, and the public, alternative technologies were officially selected, in late 2002 for Pueblo (consisting of neutralisation followed by bio-treatment), and in early 2003 for Blue Grass (consisting of neutralisation followed by supercritical water oxidation).

15. In reviewing the history of the destruction programme, Mr Abaie pointed out that in 2013 explosive destruction technologies had been selected to augment the main plants both at PCAPP and Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP). For Pueblo, the destruction technology selected was the Explosive Destruction System (EDS), which would destroy overpacked problematic or leaking munitions. For BCAAP, the Static Detonation Chamber (SDC) was selected following an X-ray assessment indicating that solidified mustard would be difficult to drain in the main plant. Further to this end, Mr Abaie informed the delegation that although the EDS had completed operations at Pueblo, three SDCs would be procured and installed at PCAPP to assist with destruction deadlines.

16. Mr Abaie, who had begun as PEO for ACWA in 2018, explained his four principles: safety, unity of effort, solid programme management principles, and people. He noted that Pueblo had 780,000 mustard agent projectiles and that, as of 15 March 2019, 107,530 had been destroyed. Mr Abaie further noted that 114,641 rounds had been destroyed as of 7 April 2019. Blue Grass had a combination of 101,764 rockets and projectiles containing mustard and nerve agent. Following a financial analysis and comprehensive assessment of safety considerations, technical requirements, and contracting requirements, Mr Abaie informed the group that his objective was to complete destruction operations one year earlier than mandated by United States law, thereby setting 31 December 2022 as the goal for completion.

17. The PEO further noted that the BCAPP would begin operations involving agents in summer 2019, using the SDC to destroy the entire stockpile of mustard agent projectiles. Reviews similar to those completed at Pueblo resulted in decisions to begin destruction at the BGCAPP main plant with nerve agent projectiles, rather than the
more complicated rockets. An evaluation of the use of an SDC to destroy the rockets filled with nerve agent was underway.

18. Mr Abaie underscored further in his presentation the fact that the ACWA programme was committed to stakeholder outreach by working closely with the Colorado and Kentucky Chemical Demilitarisation Citizens Advisory Commissions, state regulators, and congressional delegations. Mr Abaie concluded his presentation by underscoring that meeting the planned destruction deadlines was his full focus.

19. Mr Jeff Brubaker, BGCAPP Site Project Manager, welcomed the opportunity to address the delegation regarding the ongoing work at Blue Grass. The BGCAPP would safely destroy 475 metric tonnes of chemical agent stored in rockets and artillery projectiles at the Blue Grass Chemical Activity in Richmond, Kentucky. Neutralisation followed by supercritical water oxidation was selected as the technology for destroying the chemical weapons stockpiles filled with nerve agents (GB and VX) contained in rockets and projectiles. A 2011 X-ray assessment of the Blue Grass chemical weapons stockpiles confirmed the solidification of mustard agent in a significant number of 155-mm mustard projectiles, rendering them unsuitable for automated processing in the main plant. These problematic munitions, together with some projectiles that had leaked in the past, required a different technological approach for their destruction. Therefore, the SDC technology had been selected to destroy all these munitions.

20. The SDC at the BGCAPP was scheduled to begin destruction operations in summer 2019, with the main plant scheduled to begin destruction operations in the fall of the same year. Mr Brubaker provided an informative explanation of the process used by the SDC. First, munitions are placed into a feed tray that is moved remotely to the top of the SDC where it is pushed into the loading chamber. The loading chamber is then remotely rotated dropping the feed tray into the detonation chamber. The detonation chamber is electrically heated, causing destruction of the munitions energetics and thermal decomposition and oxidation of the agent. The exhaust gases are heated in a thermal oxidizer and treated in an off-gas system and carbon filtration system. The resulting scrap metal is cooled and sent for recycling.

21. The Council delegation was made aware that munitions at the BGCAPP main plant would be disassembled by modified reverse assembly; the chemical agent and energetics would also be separated in the process. The chemical agent and energetics would be mixed with caustic solution or water, and the resulting hydrolysates would be tested to ensure agent destruction before proceeding to secondary treatment. The agent and energetic hydrolysates would then be fed to the supercritical water oxidation units to destroy the organic materials. Supercritical water oxidation subjects the hydrolysate to very high temperatures and pressures, breaking them down into carbon dioxide, water, and salts. Metal parts would be decontaminated by heating to 1,000 degrees Fahrenheit with electrical inductive heaters for a minimum of 15 minutes. The metal parts could then be safely recycled. Gas effluents would be filtered through a series of high-efficiency particulate air and carbon filters before being released into the atmosphere. Water would be recycled into the pilot plant facility and reused as part of the destruction process.
22. The SDC at Blue Grass was currently being put through a series of tests to ensure functionality prior to operations. The OPCW conducted a final engineering review of the SDC in April 2019, with operations scheduled to begin in summer 2019 and taking approximately nine months to complete. The final engineering review for the main plant was scheduled for July 2019 with operations beginning in the autumn of 2019.

23. Mr Mike Strong, PCAPP Deputy Site Project Manager, presented the status of PCAPP operations. The delegation was given a video presentation of the accomplishments of PCAPP through 2018. Mr Strong reminded the delegation that, as pointed out by Mr Abaie, the EDS had completed the destruction of 925 problematic munitions, including 11 Department of Transportation bottles that had held small amounts of sample agent. Mr Strong noted that as of 15 March 2019, the PCAPP main plant had destroyed 107,530 HD-filled projectiles.

24. As the safety of the workforce and surrounding community was the priority for ACWA, Mr Strong pointed out that PCAPP strived to achieve zero accidents. A programme known as “Employees Leading Improvement and Excellence”, or ELITE, met weekly to facilitate improvement and teamwork on all elements of activities.

25. Mr Strong presented an overview of the layout of the facility and the tour that the delegation would be taking. He noted that in order to facilitate destruction, PCAPP had initiated efforts to remove propelling charges from over 125,000 boxed munitions and reconfigured them into a palletised configuration, thus streamlining processing. Once removed, the energetics were boxed for shipment to Anniston Alabama, where they were destroyed in an SDC under verification by the OPCW.

26. Munitions processing began with robotic removal of the energetics in the Enhanced Reconfiguration Building, followed by removal of the mustard agent at the Munitions Washout System in the Agent Processing Building. The agent was transferred through piping to the Toxic Room, where it was subjected to neutralisation using caustic solution and hot water. Following confirmation of neutralisation through analysis, the hydrolysate was transferred to the biotreatment area where microbes broke down the hydrolysate to brine. The munition bodies were heated to 1,000 degrees Fahrenheit for 15 minutes to ensure decontamination of the metal. Approximately 80% of the water from the process was recycled and reused in the plant.

27. Mr Strong noted that PCAPP would install and operate three SDCs to supplement chemical weapons destruction at the main plant. The SDCs were currently being fabricated while PCAPP continued site preparations for the installation. The first SDC would begin destruction operations with the 4.2 inch mortar rounds in 2020.

28. Colonel Kelso Horne, Director of the U.S. Army Chemical Materials Activity (CMA), briefed the delegation of the role of the CMA in managing the stockpile of chemical weapons. Specifically, CMA was responsible for maintaining the safe and secure storage of the remaining chemical munitions at Pueblo and Blue Grass until their transfer to ACWA for destruction. CMA was responsible for the implementation of treaty obligations. Additionally, CMA’s responsibilities included assessing and destroying any recovered chemical weapons material and disposing of it in a safe, and
compliant, manner. CMA maintained destruction technology and expertise to enable that mission. Finally, the CMA’s Chemical Stockpile Emergency Preparedness Program (CSEPP) worked with communities around the remaining stockpiles to deal with natural and man-made disasters (tornados, floods, hazardous spills, industrial accidents, etc.) that could threaten the stockpiles.

29. Colonel Horne also provided information about the distribution of the chemical weapons stockpile by location and the percentage of chemical agent remaining to be destroyed. It was highlighted that CMA had been responsible for the destruction of the chemical weapons stockpiles at seven out of nine original storage locations, namely Johnston Atoll, Aberdeen, Anniston, Newport, Pine Bluff, Tooele, and Umatilla. The destruction of the remaining stockpiles at the Blue Grass and Pueblo facilities remained under the responsibility of ACWA.

30. Colonel Christopher Grice, Commander of the Pueblo Chemical Depot (PCD), provided an overview of the depot, whose mission was to safely secure and store the chemical weapons stockpile, while protecting the workforce, the public, and the environment, and to set the conditions for the successful destruction of the chemical weapons stockpiles. Colonel Grice noted that while the installation had overall command responsibilities, ensuring the success of the PCAPP and ACWA was essential and meeting treaty obligations was a team effort at Pueblo.

31. As indicated by Colonel Grice, the PCD encompassed 23,500 acres (approximately 9,308 hectares) containing 1,136 structures. The PCD provided all water through wells run and maintained by the depot. PCAPP alone averaged between 50,000 and 80,000 gallons of water per day, depending on production rates at the destruction facility.

32. The Chemical Limited Area (CLA) was comprised of 102 storage igloos, of which 78 contained mustard rounds. All 102 igloos had been declared under the Convention and were subject to systematic inspections. Pueblo had had 24 inspections since 1997, with the latest being conducted in September 2018.

33. In addition to responsibilities directly related to maintaining the safe and secure storage of the chemical weapons stockpile, the PCD worked closely with the local community and state emergency agencies to develop emergency plans and to provide chemical accident response equipment and warning systems. Through its partnership with the local community, the Colorado Citizens Advisory Commission (CAC), and the Federal Emergency Management Agency, the PCD conducted quarterly and annual exercises as part of its emergency preparedness programme, with the goal of protecting the public.

34. Following the chemical mission, the installation would be transferred to the local redevelopment authority, currently known as PuebloPlex. The PCD was working closely with the State of Colorado and PuebloPlex to transition parcels of land as appropriate. It was anticipated that the first parcel could be transitioned as early as 2020.

35. The Council delegation was given the opportunity for questions, which covered a variety of general topics as well as very specific technical areas. Discussions were conducted in an open and transparent manner.
36. To answer a question regarding the timing of the installation and operations of the SDCs and the increase in destruction rates, the representatives of the United States responded that PCAPP had originally been processing at approximately 125 munitions per day, and that that rate had been increased to around 300 rounds per day in the last few months. Several steps, both engineering and administrative, had been put in place to catch potential problems before they occurred, thus increasing efficiency with less work stoppage. As for the SDCs, the first would be installed in August 2019, with the other two following in September and October 2019. Each SDC would require approximately nine months of systemisation prior to beginning operations. The first SDC would begin destruction operations in the summer of 2020.

37. In response to the question as to whether the same efficiency could be achieved at Blue Grass, the United States representatives noted that work was ongoing to determine the ability of SDCs to destroy nerve agents. Preliminary tests were indicating good results and testing would continue, including on the ability of an SDC to destroy an entire rocket. Dynasafe, the designer of the SDC, was evaluating the SDC for nerve agents and risk mitigation. It was noted that operational rates for an SDC were approximately six rounds per hour per SDC with a 24/7 destruction schedule.

38. A question was asked about the difference between the SDC at Haerbaling and the one planned for PCAPP. It was pointed out that there were several SDCs in use, in Belgium, China, Germany, and Alabama. While they may be different model numbers that allow for varying quantities of explosives, the same basic technology was applied.

39. The United States representatives made a point of informing the Council that no chemical weapons-specific delivery systems existed for the deployment of the chemical weapons in the United States stockpile.

40. In response to the query regarding how much influence the CAC had, Dr Ball pointed out the CAC played an important role in choosing the technologies. It should be noted that it could influence state regulators and the intent was for all stakeholders to work together to ensure that the focus was on the goal of destruction of chemical weapons.

41. Regarding the differences between the BGCAPP and PCAPP, the United States representatives pointed out that several differences existed. Pueblo had a large footprint due to the available land, whereas Blue Grass had a much smaller footprint and needed to work within a confined area. Based on evaluations of the mustard projectiles, the mustard agent at Blue Grass had been produced by a different method that had resulted in higher levels of solids in the projectiles, thus dictating the need for the SDC.

42. In reply to a question regarding the total cost of the chemical weapons demilitarisation programme and related funding, the United States representatives indicated that already USD 24 billion had been spent for the United States chemical weapons stockpile destruction programme at the seven already completed destruction facilities. To date, the ACWA programme had spent approximately USD 2.8 billion at Blue Grass, with a final total of around USD 6.5 billion. PCAPP had cost approximately USD 3 billion, with an anticipated final cost of USD 5 billion. Total
cost of chemical weapons destruction was anticipated to be around USD 36 billion. This amount included operational costs and the costs for dismantling these plants. However, it did not include the costs associated with maintaining the storage or the emergency preparedness programme. Current operating costs for one plant were USD 1 million per day.

43. With respect to recycling of some parts of destroyed munitions, the United States representatives explained that some metallic components of the munitions might be recycled through steel companies. Additionally, as a result of a request from the local community, the United States representatives stated that water used for destruction of the chemical agent at PCAPP was being recycled and reused during the destruction process.

44. In response to a question on what would occur when the destruction programme was fully accomplished, the United States representatives explained that the structures built at the PCAPP and BGCAPP would be dismantled; some workers employed at those plants would retire while others would be provided with training to facilitate future career opportunities. However, there would still be some chemical-related destruction activities, mainly in regard to the destruction of recovered chemical weapons.

45. Regarding a question related to transferring and sharing the destruction-related technology, the United States representative stated that the State Party was committed to assisting with the destruction of chemical weapons anywhere, and gave examples of its assistance provided to Libya for the destruction of its declared chemical weapons stockpiles, of which the equipment was still being used for the destruction of conventional items, as well as its assistance provided for the destruction of the chemical weapons declared by the Syrian Arab Republic, through the provision of the vessel Cape Ray, which had been equipped with neutralisation technology.

46. In response to the question concerning the number of workers at the PCAPP site, the visiting delegation was informed that the total was 1,527. Not included in that figure was the PCD workforce supporting the stockpile mission, which numbered 428 workers.

47. During the discussions that followed, the United States representatives indicated that the United States remained fully committed to completing the destruction of its chemical weapons stockpiles as soon as possible, with due regard to ensuring the safety of the workforce, surrounding communities, and the environment.

48. In concluding its visit to Pueblo, the Council delegation expressed its appreciation for the hospitality shown to its members throughout the visit, and for the transparency and openness that governed all discussions. The members of the Council delegation concluded that the visit to Pueblo allowed for better understanding of the challenges involved in the process of destruction of chemical weapons, of the path forward, and of the emphasis placed by the United States on safety and environmental protection.
Meeting with the Citizens’ Advisory Commission and Chemical Destruction Community Advisory Board

49. The Council delegation continued its visit on 9 April 2019 with a meeting with the Colorado Citizens’ Advisory Commission (CAC), which served as a bridge between the community and the government by providing a forum for exchanging information on chemical weapons, offering opportunities for public involvement, and representing the communities’ and the state’s interests before the United States Army and other organisations involved in the chemical weapons destruction programme. CAC members are appointed by the governors of each state with a chemical weapons destruction facility and come from diverse backgrounds, such as health care, construction, hazardous waste management, and engineering.

50. Mr Terry Hart, Vice Chair of the CAC, welcomed the visiting delegation and provided a summary of the work and interactions to which the CAC had contributed. The Colorado CAC holds public meetings on a quarterly basis, providing a forum for PCAPP staff, government officials, ACWA leadership, and members of the CAC and the public to exchange information regarding chemical weapons destruction in Colorado.

51. The meeting with the members of the CAC was carried out in an open and transparent manner. The Council delegation exchanged views with respect to the role of the CAC and the involvement of local communities in decisions related to the chemical demilitarisation programme. Discussions emphasised that public input and involvement had represented a cornerstone of the ACWA programme and allowed the Council delegation to better recognise how safety and environmental protection represented important features of the United States chemical destruction programme.

52. The delegation thanked the CAC for its presentation as well as its commitment to the destruction of chemical weapons in Colorado. It was noted that the CAC played a significant role in promoting citizen involvement to support the goals of the Convention. The visiting delegation noted that civil society must remain committed to educational awareness of chemical weapons to prevent re-emergence in the future. It further noted that the OPCW would strengthen its efforts to listen to groups such as the CAC through the work of the Advisory Board on Education and Outreach.

Visit to the Pueblo Chemical Agent-Destruction Pilot Plant

53. The Council delegation continued its visit with a tour of the PCAPP training facility, during which the delegation received additional comprehensive details regarding the process and destruction technology, and was able to observe the actual equipment in use in a clean environment. During the site tour, the Council delegation was provided with extensive briefings by the facility representatives, which allowed the members of the Council delegation to familiarise themselves with the layout of the facilities and the destruction process. The Council delegation had the opportunity to access the PCAPP main plant, including the Enhanced Reconfiguration Building where the energetic components were removed, and the Agent Processing Building where the chemical agent was removed and processed through the agent collection and neutralisation system. The delegation was afforded an opportunity to see the
hydrolysate storage area, the bio-remediation area, the treaty office, and the area under construction for the future SDCs.

54. Throughout the site visit, the members of the Council delegation had the opportunity to seek clarification on further questions it had with respect to the United States chemical destruction programme. Discussions were conducted in an open and transparent manner.

55. In concluding its visit to PCAPP, the Council delegation expressed its appreciation for the hospitality shown to its members throughout the visit and the transparency and openness which governed all discussions. The delegation concluded that the visit was useful and allowed for better understanding of the United States destruction programme, current and future challenges, as well as the path forward.

Meetings in Washington, D.C.

56. On the last day of the visit the Council delegation participated in discussions in Washington, D.C. with Ms Andrea Thompson, Under Secretary of State for Arms Control and International Security, Dr Yleem Poblete, Assistant Secretary of State, Bureau of Arms Control, Verification, and Compliance; Mr Tim Morrison, Senior Director for Weapons of Mass Destruction and Counterproliferation, National Security Council; Mr Matthew Borman, Deputy Assistant Secretary, Department of Commerce; and Dr Charles Ball, Deputy Assistant Secretary of Defense for Threat Reduction and Arms Control.

57. All of these officials called the attention of the Council delegation to the fact that the United States values the Convention as an important instrument for peace and security and is committed to achieving the complete destruction of the remaining chemical weapons stockpile, in a safe manner for the workers, the local communities, and the environment, in line with the obligations the State Party had undertaken. The officials underscored that the destruction of the remaining chemical weapons represented a priority for the United States and, to this end, appropriate resources continued to be allocated to meet the timelines.

58. The important role of local communities and their continuous involvement in the decisions taken with respect to the destruction of chemical weapons at Pueblo were reiterated by the members of the Council delegation and confirmed by the United States representatives throughout the discussions.

59. United States representatives underscored their resolve for attaining or surpassing the timeline for completion of destruction. While continuing to do its utmost to expedite the schedule of destruction, the United States would continue the practice of providing accurate and timely details with respect to the overall progress of its chemical weapons destruction programme in a fully transparent manner.

60. The United States officials touched upon the need to exchange views on chemical weapons and the need to continue to work to restore the international norm against the use of chemical weapons. The United States officials noted the importance of highlighting non-compliance when States Parties fail to meet their obligations and of maintaining the ability of the OPCW to respond quickly when called upon. United States representatives touched on the desire to return to consensus. In conclusion, the
United States representatives expressed the importance of ensuring the relevance of the OPCW beyond 2023.

61. The representative of the White House noted the importance of the work of the Convention and the commitment of the United States to ensuring that the use of chemical weapons was not acceptable anywhere. He further noted that the United States had placed the issue of all weapons of mass destruction as a top priority in recent meetings with the Democratic People’s Republic of Korea.

62. The representative of the Department of Commerce noted the 300 industry inspections that had been carried out in the United States, noting that the rigorous industry inspection programme lends integrity and credibility to the process and helps to prevent re-emergence.

63. The Chairperson of the Council expressed the gratitude of the Council delegation for the hospitality shown by the United States and the quality and value of the visit to Pueblo. She stated that the Council delegation appreciated the United States’ commitment to allocating budgetary resources to the destruction programme and all the efforts made so far in this regard. She expressed confidence that the United States could complete the destruction of its remaining stockpile within the current timelines, while maintaining the safety of the personnel and surrounding communities as the highest priority. The Council Chairperson noted the polarity in the Council and vowed to continue to work towards consensus.

64. The Director-General thanked the representatives of the United States for facilitating the visit to witness the progress and efforts being made towards achieving complete destruction of the remaining chemical weapons stockpiles. The Director-General noted the complaints received regarding the length of time the United States was taking to complete its destruction, while noting that the Council should have complete confidence given the collaborative nature of the relationship between the Department of Defense, the Environmental Protection Agency, and the CAC. He expressed his positive impression of this methodology and noted that this should be seen as a model across the globe in dealing with challenges. The Director-General further expressed his concerns regarding the troubling reality of facing new challenges and the criticality of ensuring that the OPCW had the knowledge, skills, and equipment to face the future and of ensuring that it remained vigilant against the re-emergence of chemical weapons.

65. At the invitation of the Chairperson of the Council, members of the Council delegation took the floor and expressed their appreciation for the efforts being undertaken by the United States to complete the destruction of the remaining chemical weapons within the established timelines. Some members of Council delegation provided additional comments regarding the fight against terrorist acts, the importance of continued support for the project to upgrade the current OPCW Laboratory and Equipment Store, and the continued work to achieve universality.
General observations by the Council delegation and conclusions

66. The Council delegation completed its visit to PCAPP satisfied that the United States attached great importance to meeting its obligations under the Convention, and remained fully committed to completing the destruction of its remaining chemical weapons stockpile in a safe and environmentally sound manner in the shortest time practicable. In this respect, the Council delegation was confident that the United States could complete the destruction of its remaining stockpile within the current timelines.

67. The Council delegation noted that the United States had to date destroyed more than 91% of its declared chemical weapons stockpile. The delegation also noted that the PCAPP EDS had made significant progress in destroying the problematic munitions, and had completed its mission. The delegation recognised that measures had been put in place to shorten the operational schedule at PCAPP, specifically the intent of the United States to build three SDCs at Pueblo to ensure that the remaining munitions could be destroyed in a timely fashion, while ensuring the safety of the workers, the community, and the environment.

68. The visit to Pueblo, and in particular the meetings with the members of the Colorado CAC, enabled the Council delegation to better understand the emphasis placed by the United States on safe and environmentally friendly operations. Moreover, the Council delegation noted that, as reported by the United States representatives, domestic legislation, including state environmental regulations, as well as the recommendations put forward by local citizens, had had a major impact on selecting technologies and setting schedules with regard to completing the destruction of remaining chemical weapons stockpile. It was noted that the United States was promoting full transparency and openness in its relations with the local communities and that stakeholder input and involvement remained a cornerstone of the ACWA programme and had been crucial in selecting technologies and setting schedules.

69. The meetings with officials held in Washington, D.C. also highlighted the United States’ firm commitment to continue exploring options to accelerate the current schedule for the destruction of the remaining chemical weapons stockpiles. The Council delegation was reassured that, to this end, the United States had allocated the necessary financial resources for the implementation of its chemical weapons destruction programme.

70. The members of the delegation were impressed by the professionalism and dedication of the people, at all levels, involved in the chemical weapons destruction programme in the United States.

71. The delegation was very appreciative of the spirit of cooperation, openness, and transparency that marked the visit at Pueblo, as well as the detailed discussions with the United States representatives, including during the high-level meetings in Washington, D.C.

72. The Council delegation confirms the relevance of visits to chemical weapons destruction facilities by delegations representing the Council, and recommends that such visits continue, as required by the “Decision on the Final Extended Deadline of 29 April 2012” taken by the Conference at its Sixteenth Session (C-16/DEC.11).
Annexes (English only):


Annex 5: The United States of America – Briefing Materials.

Annex 1

THE UNITED STATES OF AMERICA

PROGRAM FOR THE CONDUCT OF THE 2019 OPCW EXECUTIVE COUNCIL VISIT TO UNITED STATES CHEMICAL WEAPONS DESTRUCTION FACILITY

The United States of America invites the Executive Council (EC) to conduct its 2019 visit to the Pueblo Chemical Agent-Destruction Pilot Plant, Pueblo, Colorado. The United States (U.S.) has begun consultations with the Chairperson of the Executive Council to develop the details of the visit. In order to provide transparency to the consultations, the U.S. presents this paper to explain the plan for the visit and to list actions that must take place prior to and during the visit.

Pre-arrival to the United States

A. The maximum number of participants in the Executive Council delegation, to include the Director-General, EC Chair and delegates, invited observers, and Technical Secretariat (TS) staff is limited to 15 persons. Changes to the participant list must be kept to a minimum. Visitors who cancel within 30 days of the visit cannot be replaced.
B. Visas to enter the U.S., if required, must be acquired through customary diplomatic channels.
C. To facilitate logistical arrangements, request the TS Point of Contact (POC) provide the completed spreadsheet (Attachment 1) to the U.S. OPCW Delegation no later than March 5.
D. All briefings will be in English, with no interpretation provided.
E. Each visitor will be responsible for all costs incurred for hotel accommodations and air transport expenses.

II. International and In-Country Air Travel

A. Visitors will coordinate individual travel arrangements directly with Ms. Lynn Hoggins, the designated TS POC.
B. International travel to and from the United States is the responsibility of each visitor.
C. Arrival into Washington-Dulles International Airport must occur no later than – 4:00 PM, April 6 for transportation to the Hotel.
D. Domestic U.S. air travel on April 7 and April 10 will be arranged individually or through the TS travel office based on the flight information provided below.
E. Deviations from this timeframe must be coordinated no later than 30 days in advance of the visit.
F. Visitors will be greeted at the Washington Dulles and Denver International Airports and conducted to a convenient hotel. See section III. Lodging for further information.
G. Consultations in Washington will end early in the afternoon Thursday April 11. Return flight arrangements must be communicated to the TS POC.
### III. Lodging

The U.S. has set aside a number of hotel rooms in Colorado as well as in the Washington, D.C. area. Each participant must inform the TS POC of their confirmed lodging reservations for each hotel no later than **March 5**. The rooms will be listed under “**OPCW Executive Council Visit**”. Each visitor will be responsible for paying his or her hotel bill and any change or cancelation fees. Reservations must be guaranteed with a credit card.

<table>
<thead>
<tr>
<th>Date</th>
<th>Flight</th>
<th>Departing</th>
<th>Arriving</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 7</td>
<td>United (UA 542)</td>
<td>Washington –Dulles International Airport (IAD) 1555</td>
<td>Denver International Airport (DEN) 1755</td>
</tr>
<tr>
<td>April 10</td>
<td>United (UA 495)</td>
<td>Denver International Airport (DEN) 1110</td>
<td>Washington –Dulles International Airport (IAD) 1625</td>
</tr>
</tbody>
</table>

#### III. Lodging

- **Hyatt Regency Tysons Corner Center**
  - 7901 Tysons One Place, Tysons Corner, VA 22102
  - **Cost**: $129.00
  - **Phone Number**: 1-877-803-7534

- **The Westin Denver International Airport**
  - 8300 Pena Blvd, Denver, CO 80249
  - **Cost**: $209.00
  - **Phone Number**: 1-303-317-1822 or 1-303-317-1800
  - Website: [https://www.marriott.com/event-reservations/reservation-link.mi?id=1550090356736&key=GRP&app=resvlink](https://www.marriott.com/event-reservations/reservation-link.mi?id=1550090356736&key=GRP&app=resvlink)

- **The Lodge at Flying Horse**
  - 1880 Weiskopf Point, Colorado Springs, CO 80921
  - **Cost**: $249.40
  - **Phone Number**: For reservations call: 1-844-768-2684 or email: Lodgestaff@flyinghorseclub.com
  - Website: EC visit rooms are not available on-line

- **The Westin Denver International Airport**
  - 8300 Pena Blvd, Denver, CO 80249
  - **Cost**: $219.00
  - **Phone Number**: 1-303-317-1822 or 1-303-317-1800
  - Website: [https://www.marriott.com/event-reservations/reservation-link.mi?id=1550171688691&key=GRP&app=resvlink](https://www.marriott.com/event-reservations/reservation-link.mi?id=1550171688691&key=GRP&app=resvlink)

- **Crystal City Marriott at Reagan National Airport**
  - 1999 Jefferson Davis Highway, Arlington VA 22202
  - **Cost**: $249.00
  - **Phone Number**: 1-703-413-5500 or 1-800-228-9290
  - Website: [https://www.marriott.com/event-reservations/reservation-link.mi?id=1549896570551&key=GRP&app=resvlink](https://www.marriott.com/event-reservations/reservation-link.mi?id=1549896570551&key=GRP&app=resvlink)

*Room cost is subject to change. Taxes not included.*
IV. Ground Transportation

A. Ground transportation will be provided by the U.S. for travel between airports, local accommodations, the destruction site, and sponsored official functions.

B. Ground transportation will be provided to Dulles International Airport for delegates to depart the country on April 11. Shuttle service will depart from the final meeting in Washington D.C. at 2:00PM. One additional shuttle will be available from the hotel on April 12.

V. Dining

A. Visitors with special dietary needs must inform the TS POC no later than March 5.

B. Meal selections (menu will be provided separately) must be completed and returned no later than March 5.

C. Upon arrival to the hotel on April 6, the TS POC will collect a service fee from each visitor to be paid in U.S. dollars. This fee will cover the cost of select meals and snacks for the visit. The amount will be communicated to the TS POC no later than March 22.

D. Meals not provided under the service fee are noted on the attached Itinerary.

VI. Dress/Safety

A. Visitors should be prepared to wear casual clothing for parts of the Colorado portion of the visit. Activities will include the site tour and a cultural event that may be partially outdoors.

B. Springtime weather in Colorado can be quite cold. Visitors should be prepared to dress accordingly.

C. Portions of the visit will be at elevations over 6000 feet (1800 meters). There is a risk of altitude sickness. Drinking plenty of water before and during the visit may help visitors adjust to the altitude.

D. Per U.S. safety regulations, visitors must wear long pants/slacks. Shirt sleeves must be at least four-inches (10.2 cm) long. Dresses, skirts, and robes may not be worn.

E. Visitors are required to wear substantial footwear. Shoes must completely cover the foot from toe to heel, have a sole with a thickness (height) of no more than one inch (2.5 cm) and have a heel that is at least two inches wide at the point where the sole touches the ground.

F. Visitors are asked to advise as early as possible if ethnic or religious clothing considerations must be considered (e.g., head covering).

G. Visitors are asked to refrain from using perfume, aftershave, or cologne on the plant tour day to avoid interference with monitoring equipment.

H. All visitors going on the tour will be issued an escape mask to carry for use in the event of an emergency. This mask accommodates facial hair. All visitors must submit the related forms (Attachments 3 and 4) to the TS POC no later than March 5.

I. Visitors must bring any required medications with them.
VII. Public Affairs

A. The U.S. will not include members of the delegation in public affairs activities or put members of the delegation in a position where they are expected to conduct media interviews during the course of the visit.

B. Photographs will be taken to commemorate the visit. Public affairs personnel will take photographs during the plant tour and training facility event.

C. Delegates are not permitted to carry cameras or cell phones during the plant tour.
Annex 2

THE UNITED STATES OF AMERICA

ITINERARY OF THE OPCW EXECUTIVE COUNCIL VISIT TO THE PUEBLO CHEMICAL AGENT-DESTRUCTION PILOT PLANT
6 - 11 APRIL 2019

Saturday, April 6
Eastern Time Zone (-5 hours GMT)

Arrive Washington - Dulles International Airport (IAD)

~1600 Transportation to the Hyatt Regency Tysons Corner Center 7901 Tysons One Place, Tysons Corner, VA 22102

~1645 Transportation to the Hyatt Regency Tysons Corner Center 7901 Tysons One Place, Tysons Corner, VA 22102

Check-In Hotel (evening and dinner on own)

1800 U.S. Visit POC Meet EC Visitors in Hotel Lobby to Deliver Welcome Packets.

Sunday, April 7
Eastern Time Zone (-5 hours GMT)

Breakfast and Lunch on own

1300 Meet in Lobby after Hotel Check-Out

1330 Transportation to Washington - Dulles International Airport (IAD)

1555 United Departure

Mountain Time Zone (-7 hours GMT)

1755 Arrive Denver, Colorado from Washington D.C.

Walk to Hotel: The Westin Denver International Airport (8300 Pena Blvd, Denver, CO 80249)

Check-In Hotel (evening and dinner on own)

Monday, April 8, (Dress Business Casual)
Mountain Time Zone (-7 hours GMT)

0730 Breakfast on own (hotel or airport restaurant)
0900  Check-Out of Hotel
0915  Depart Hotel (View Safety Briefing on Bus)
1045  Arrive Air Force Academy for Mission Brief, Short Walking Tour (be aware of elevation), View Cadet Noon Meal Formation
1155  Lunch and Group Photo with Cadets
1315  Depart Air Force Academy
1335  Arrive Colorado Springs and Check-In to The Lodge at Flying Horse
1400  Hotel Meeting Room

Welcome – Dr. Charles Ball, Deputy Assistant Secretary of Defense for Threat Reduction and Arms Control

Remarks – H.E. Ken Ward, United States Permanent Representative to the OPCW

Introductions of EC Visit Delegation and Remarks – H.E. Jana Reinišová, EC Chairperson

Remarks – H.E. Fernando Arias, Director-General OPCW

1430  Visit Overview – Mr. Craig Campbell, Principal Director for Threat Reduction and Arms Control

1445  Assembled Chemical Weapons Alternatives (ACWA) Program Overview – Mr. Michael S. Abaie, Program Executive Officer, ACWA

Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) Orientation – Mr. Jeff Brubaker, BGCAPP Site Project Manager

Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) Orientation – Mr. Mike Strong, PCAPP Deputy Site Project Manager

1600  Break

1630  Pueblo Chemical Depot (PCD) Overview – Colonel Christopher A. Grice, Commander, U.S. Army PCD

1645  Personal Protective Equipment (PPE) Instruction
Tuesday, April 9, (Dress is CASUAL – see information paper for requirements)

Mountain Time Zone (-7 hours GMT)

0600 Check-Out of Hotel
0615 Depart Hotel
0730 Meet with the Colorado Citizens Advisory Commission (CAC) at the PCAPP Training Facility (Informal Continental Breakfast)
0745 Group Photo
0820 Break and Separate into Tour Groups (by color) for PCAPP Training Facility Tour. Mobile devices secured

<table>
<thead>
<tr>
<th>Red, Yellow, Green Tour Groups</th>
<th>Purple, Blue Tour Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>0825 Begin Tour/Demonstrations</td>
<td>0850 Begin Tour/Demonstrations</td>
</tr>
<tr>
<td>1100 – 1145 Lunch at Copper Mountain</td>
<td>1115 - 1200 Lunch at Copper Mountain</td>
</tr>
<tr>
<td>Mobile devices available / collected after lunch</td>
<td>Mobile devices available / collected after lunch</td>
</tr>
<tr>
<td>1200 PCAPP Main Plant Tour</td>
<td>1215 PCAPP Main Plant Tour</td>
</tr>
</tbody>
</table>

1500 PCAPP Tour Complete, PPE collected, Walk to Copper Mountain Conference Room
1510 Question and Answer Session
Closing Remarks
1600 Load Bus to Depart for Denver via PCAPP SDC construction site
1800 Check-In to The Westin Denver International Airport (8300 Pena Blvd, Denver, CO 80249)
1830 Evening and dinner on own
Optional Transportation to No-Host Colorado Rockies Baseball Game

2200 Transportation from Baseball Game to Hotel

**Wednesday, April 10**  
*Mountain Time Zone (-7 hours GMT)*

Breakfast at Hotel on own

0845 Check-Out of Hotel, Depart for Denver Airport  
1110 Depart Denver Airport (DEN)

*Eastern Time Zone (-5 hours GMT)*

1625 Arrive Washington – Dulles International Airport (IAD), Transportation to Hotel

1800 Check-In to Hotel, Crystal City Marriott at Reagan National Airport (1999 Jefferson Davis Highway, Arlington VA 22202) Evening Free

**Thursday, April 11**  
*Eastern Time Zone (-5 hours GMT)*

Breakfast on own

0830 Check-Out of Hotel (as applicable, luggage held by concierge)  
Depart for Department of State

0900 Check-in/Security Department of State – Diplomatic Entrance, C Street

0920 Diplomatic Reception Room Tour

1030 Interagency Roundtable U.S. Priorities and Objectives Related to Chemical Weapons

Welcome – Yleem Poblete, Assistant Secretary of State, Bureau of Arms Control, Verification and Compliance, Department of State

Key Remarks – Andrea Thompson, Under Secretary for Arms Control and International Security, Department of State

Department of Commerce Perspective – Matthew Bormann, Deputy Assistant Secretary Department of Commerce

Department of Defense - Charles J. Ball, Ph.D., Deputy Assistant Secretary of Defense for Threat Reduction and Arms Control
1130-1230  Lunch 8th Floor Executive Dining Room

1300  Conclusion of Official Schedule/Visit and Return to Hotel

1345  Shuttle departs for Washington Dulles International Airport (IAD)
### Annex 3

**LIST OF MEMBERS OF THE OPCW EXECUTIVE COUNCIL DELEGATION WHO TOOK PART IN THE VISIT TO THE PUEBLO CHEMICAL AGENT-DESTRUCTION PILOT PLANT**

6 - 11 APRIL 2019

<table>
<thead>
<tr>
<th>Name</th>
<th>Representing</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.E. Mrs Jana Reinišová, Permanent Representative of the Czech Republic to the OPCW</td>
<td>Executive Council Chairperson and Eastern European Regional Group</td>
</tr>
<tr>
<td>H.E. Mr Fernando Arias, Director-General of the OPCW Technical Secretariat</td>
<td>OPCW</td>
</tr>
<tr>
<td>H.E. Mr Yun-young Lee, Permanent Representative of the Republic of Korea to the OPCW</td>
<td>Asia Regional Group</td>
</tr>
<tr>
<td>H.E. Mr Paul van den Ijssel, Permanent Representative of the Kingdom of the Netherlands to the OPCW</td>
<td>Western European and Other States Regional Group</td>
</tr>
<tr>
<td>H.E. Mr Markus Leinonen, European Union Representative to the OPCW</td>
<td>Observer, European Union</td>
</tr>
<tr>
<td>Mr Arata Mizukami, Alternate Permanent Representative of Japan to the OPCW, Embassy of Japan in the Netherlands</td>
<td>Observer, Asia Group</td>
</tr>
<tr>
<td>Mr Sébastien Braha, Chief of Cabinet</td>
<td>OPCW</td>
</tr>
<tr>
<td>Dr Carolyn Browne, Director of Verification</td>
<td>OPCW</td>
</tr>
<tr>
<td>Mr Evandro De Souza Nogueira, Director, Inspectorate</td>
<td>OPCW</td>
</tr>
<tr>
<td>Ms Lynn Hoggins, Senior Chemical Demilitarisation Officer</td>
<td>OPCW</td>
</tr>
</tbody>
</table>
**Annex 4**

**LIST OF REPRESENTATIVES OF THE UNITED STATES OF AMERICA HOSTING THE VISIT OF THE OPCW EXECUTIVE COUNCIL DELEGATION TO THE PUEBLO CHEMICAL AGENT-DESTRUCTION PILOT PLANT**

6 - 11 APRIL 2019

<table>
<thead>
<tr>
<th>Name</th>
<th>Representing</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.E. Mr Kenneth Ward</td>
<td>U.S. Delegation</td>
</tr>
<tr>
<td>United States Permanent Representative to the OPCW</td>
<td></td>
</tr>
<tr>
<td>Dr Charles Ball</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Deputy Assistant Secretary of Defense, Threat Reduction and Arms Control</td>
<td></td>
</tr>
<tr>
<td>Mr Michael Abaie</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Program Executive Officer ACWA</td>
<td></td>
</tr>
<tr>
<td>Mrs Laura Gross</td>
<td>Department of State</td>
</tr>
<tr>
<td>Executive Director, U.S. National Authority for the CWC</td>
<td></td>
</tr>
<tr>
<td>Mr. David Musgrave</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Director, On Site Inspection &amp; Building Capacity Directorate, Defense Threat Reduction Agency</td>
<td></td>
</tr>
<tr>
<td>Mr Craig Campbell</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Principal Director, Threat Reduction and Arms Control</td>
<td></td>
</tr>
<tr>
<td>Mr Nicholas Stamatakis</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Deputy Program Executive Officer, ACWA</td>
<td></td>
</tr>
<tr>
<td>Colonel Kelso Horne III</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Director, U.S. Army Chemical Materials Activity</td>
<td></td>
</tr>
<tr>
<td>Colonel Christopher Grice</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Commander, U.S. Army Pueblo Chemical Depot</td>
<td></td>
</tr>
<tr>
<td>Mr Jeff Brubaker</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>BGAPP Site Project Manager</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Representing</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Mr Mike Strong</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>PCAPP Deputy Site Project Manager</td>
<td></td>
</tr>
<tr>
<td>Mr Thaddeus Ryba</td>
<td>U.S. Delegation</td>
</tr>
<tr>
<td>Department of Defense Representative</td>
<td></td>
</tr>
<tr>
<td>Ms Amy Borman, Office of the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health U.S. Army</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Mrs. Crystal Legaluppi</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Chief, Center for Treaty Implementation and Compliance, U.S. Army Chemical Materials Activity</td>
<td></td>
</tr>
<tr>
<td>Mr Gregg Allen</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Center for Treaty Implementation and Compliance, U.S. Army Chemical Materials Activity</td>
<td></td>
</tr>
<tr>
<td>Ms Felicia Eversole</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Advisor (contractor), Office of the Deputy Assistant Secretary of Defense, Threat Reduction and Arms Control</td>
<td></td>
</tr>
<tr>
<td>Ms April Arnold</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>Advisor (contractor), Office of the Deputy Assistant Secretary of Defense, Threat Reduction and Arms Control</td>
<td></td>
</tr>
</tbody>
</table>
Annex 5

THE UNITED STATES OF AMERICA

BRIEFING MATERIALS

Background information provided during the visit is available on the external server.
COMMENTS FROM THE UNITED STATES OF AMERICA
ON THE REPORT OF THE VISIT BY THE CHAIRPERSON OF THE EXECUTIVE COUNCIL AND REPRESENTATIVES OF THE EXECUTIVE COUNCIL TO THE PUEBLO CHEMICAL AGENT-DESTRUCTION PILOT PLANT

6 – 11 APRIL 2019

The United States of America informed the Secretariat that it had no comments on the report.