NATO STANDARD

AJEPP-6

NATO ENVIRONMENTAL FILE DURING NATO-LED ACTIVITIES

Edition C Version 1

AUGUST 2019

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED JOINT ENVIRONMENTAL PROTECTION PUBLICATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

7 August 2019

1. The enclosed Allied Joint Environmental Protection Publication, AJEPP-6, Edition C, Version 1, NATO ENVIRONMENTAL FILE DURING NATO-LED ACTIVITIES, which has been approved by the nations in the Military Committee Joint Standardization Board, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 6500.

2. AJEPP-6, Edition C, Version 1, is effective upon receipt and supersedes AJEPP-6, Edition B, Version 1, which shall be destroyed in accordance with the local procedure for the destruction of documents.

3. No part of this publication may be reproduced, stored in a retrieval system, used commercially, adapted, or transmitted in any form or by any means, electronic, mechanical, photo-copying, recording or otherwise, without the prior permission of the publisher. With the exception of commercial sales, this does not apply to member or partner nations, or NATO commands and bodies.

4. This publication shall be handled in accordance with C-M(2002)60.

Dieter Schmaglowski
Deputy Director NSO
Branch Head P&C

for

Zoltán GULYÁS
Brigadier General, HUNAF
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
BGR	1. Due to the lack of necessary equipment the Bulgarian Armed Forces (BAF) will not apply the analysis of pesticides and TPH during Environmental Baseline Study (EBS) and Environmental Health Site Assessment (EHSA). 2. During NATO operations the BAF will not deploy analytical laboratory on place.
USA	a. The U.S. does not agree with the use of the term “remediation” in this AJEPP. The U.S. DoD has explicit policy regarding remediation of environmental contamination outside the United States. This same reservation was expressed in the previous ratification of 2015. Several instances of the term “remediation” were replaced with the accepted terms “corrective action” and “spill response.” This reservation will be removed when the appropriate correction is made in three locations: Chapter 1 section 1.4.2; Annex A section A.2.6; and Appendix C3 (NATO Spill Report Format) section 2.17. b. The U.S. is in general agreement that an Environmental Impact Assessment (EIA) may be used for purposes discussed in Section 1.5, however, the U.S. uses different terminology and will implement equivalent requirements pursuant to Section 32 of the US Code of Federal Regulations Part 187, and Executive Order 12144, as they apply to Environmental Studies and Environmental Reviews. This reservation will be removed when the term EIA is replaced with a more acceptable term.
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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CHAPTER 1 GENERAL

1.1. PURPOSE AND SCOPE

The purpose of this Allied Joint Environmental Protection Publication (AJEPP) is to provide a framework document of best practices for the creation of an Environmental File for the military use of area. NATO activities may have significant environmental impacts. The Environmental File will incorporate all essential environmental protection (EP) documentation associated with the various stages of development of a NATO camp, infrastructure, or other relevant use of area. The Environmental File will serve as a historical record of the significant environmental documentation captured during the lifetime of a NATO use of area. The ability to incorporate the EP documents into one file will facilitate the handover process from an environmental perspective.

1.2. OVERVIEW

Military activities are normally characterized by stages of varying duration, depending on their nature, intensity and complexity. NATO doctrine[1] identifies the stages of a typical joint operation as planning and preparation (this entails intelligence preparation of the operational environment, operations planning and preparation of the force, including logistic build-up), deployment of the force, execution of operations, mission termination and transition, and redeployment (including lessons learned and doctrine review). The stages and attendant level of development of a NATO Camp, infrastructure, or other types of land-use will determine and direct the production of various documents for the Environmental File, as depicted in Figure 1.1.

Planning and Preparation
- **Environmental Intelligence**

Deployment
- **Environmental Baseline Study**
- **Handover / Takeover Declaration**

Execution
- **Environmental Baseline Study (if not completed during deployment)**
- **Environmental Impact Assessment**
- **Environmental Condition Report**

Termination and Transition
- **Environmental Condition Report**
- **Handover / Takeover Declaration**
- **Environmental Closeout Study**

Redeployment
- **Environmental Condition Report**
- **Lessons Learned**

Figure 1.1. Environmental File Components by Stage of a NATO activity

[1] AJP-3(B), Allied Joint Doctrine for the Conduct of Operations.

1.3. ENVIRONMENTAL PROTECTION CRITERIA FOR SITE SELECTION

The selection of a suitable site for a NATO camp, infrastructure, or other use of an area depends upon many factors, including EP considerations. Figure 1.2 illustrates some of the criteria and considerations that will enable commanders to select a site that will reduce the impact on the local environment. One of the important duties of the Environmental Protection Officer (EPO) is to translate EP criteria into operational and tactical criteria. This will ensure that commanders clearly understand the linkages between EP and its positive impacts on operational and tactical planning.

Environmental Protection Criteria for Military Site Selection

- Mission-specific criteria and operational/tactical priorities are key
- Important to translate environmental protection criteria to operational/tactical criteria
- Impact on local resources/cultural resources / socioeconomic concerns
- Infrastructure
    - Waste water
    - Water
    - Power
- Impact on sensitive ecosystems
    - Availability of host nation standards/information
- Pre-existing environmental conditions
    - Pre-existing contamination
    - Flooding potential

Figure 1.2. EP Criteria for Military Site Selection

1.4. ENVIRONMENTAL BASELINE STUDY AND ENVIRONMENTAL HEALTH SITE ASSESSMENT

1. In general, environmental data will be collected for two types of assessments: an Environmental Baseline Study (EBS) and an Environmental Health Site Assessment (EHSA). An EBS serves to document existing environmental conditions and the potential impacts that NATO may have on the environment. Conversely, the EHSA process is concerned with the identification of potential human health effects as a result of possible pathway exposures. The information gathered in an EHSA is used to develop an Environmental Health Risk Assessment. Although the EHSA is not discussed in this document, the EBS and EHSA employ similar procedures, and environmental data collected for the purposes of an EHSA may be of use in the conduct of an EBS (and vice versa). Both the EBS and EHSA may conduct soil, water and air sampling and analysis; however, the interpretation of the analytical results will differ due to the dissimilar focuses of the two assessments. Annex F illustrates the interrelationship between an EBS and an EHSA.

2. An EBS for the military use of an area may be conducted any time that information regarding the environmental condition of the used area is desired. At a minimum, there are two times that an EBS should occur for any NATO military use of area: upon occupation (the Environmental Baseline Study or EBS) and upon closeout (the Environmental Closeout Study or ECS). The EBS is conducted prior to occupying an area, or early in the deployment stage, with the goal of determining the baseline conditions of the environment. The ECS is conducted at handover/transition or before closure of an area. The goal of the ECS is to determine the impact that NATO activities have had on the environment as well as to develop a remediation strategy. Guidance and procedures for conducting an EBS are contained in Annex A.

3. Environmental sampling (soil, water, air) can be an important part of both the EBS and ECS. Detailed guidelines for environmental sampling are contained in a Standard-Related Document (SRD) related to AJEPP 6.

1.5. ENVIRONMENTAL IMPACT ASSESSMENT

In conjunction with the EBS, one of the key documents which may be used to demonstrate the application of due diligence during a NATO deployment is the Environmental Impact Assessment (EIA). An EIA is generally completed for any project or activity undertaken by a NATO force, including construction projects, military activities, and manoeuvres. The primary goal of the EIA is to determine whether the project or activity will have a negative impact on the environment and the measures which will be taken to mitigate those impacts. Further details on how to complete an EIA and a report template are found in Annex B.

1.6. ENVIRONMENTAL CONDITION REPORT AND SPILL REPORT

1. The purpose of the Environmental Condition Report (ECR) is to document any changes or incidents which have occurred in an area used by NATO forces, specifically between the completion of the EBS and the ECS. NATO may be using an area for several years and the ECR will serve as a historical record of environmental events or major changes to the area during this period. It is meant to complement the work conducted during the EBS, ECS and the EIA. Further details and a report template can be found in Annex C.

2. A Spill Report is complementary to the ECR and should be raised by anyone discovering a spill within an area used by NATO. Its format is provided in Appendix 3 to Annex C. In a later phase of the spill response, the Spill Report will be added to the ECR.

1.7. ENVIRONMENTAL PROTECTION SOP

1. For any NATO activity, an Environmental Protection SOP should be created by the responsible EPO at the appropriate level. This SOP should contain all measures that have to be taken in order to minimize or mitigate negative environmental impacts and environmental risks during the NATO activity. Topics include waste management, waste water management, efficient use of energy and water, protection of local flora and fauna. The EP SOP should also include the measures to be taken in case of an environmental incident, including the spill report format and the relevant POCs (among others, the EPO and fire brigade).

2. Typically, in a multinational NATO Camp, this EP SOP will be drafted by the LN EPO (in close coordination with the HN) but TCNs could also develop subordinate EP SOPs for their own troops. In this case, the TCN EP SOP cannot be less stringent than the LN EP SOP.

1.8. HAZARDOUS MATERIAL RECORD MANAGEMENT

The purpose of this portion of the Environmental File is the accurate and timely maintenance of records concerning hazardous material and substances which are of particular concern for the environment. Within an area used by NATO, the management of hazardous material is essential in understanding the risk associated with their storage, handling and disposal. Annex D provides further details on the requirements for Hazardous Material Record Management during the lifecycle of an area used by NATO. STANAG 2582 (AJEPP-2), Environmental Protection Best Practices and Standards for Military Camps in NATO-led Military Operations, also provides guidance on the management of hazardous material.

1.9. ENVIRONMENTAL HANDOVER/TAKEOVER DECLARATION

The purpose of the Environmental Handover/Takeover Declaration is to provide documentation on the transition of an area used by NATO from one nation (troop-contributing nation (TCN) or Host Nation (HN)) on a NATO activity to another. The format for the Environmental Handover/Takeover Declaration can be found in Annex E.

1.10. LESSONS LEARNED

The strategic-level forum for documenting lessons learned during NATO operations is the Joint Analysis and Lessons Learned Centre (JALLC). The process of integrating lessons learned into all stages of an activity should also incorporate the topic of EP. This would enable EP activities throughout the lifecycle of an area used by NATO to be assessed and improved. Realistically, in order for the process of identifying, analyzing and sharing EP lessons to be effective, it must happen at a lower level. Hence, the preferred forum is the Military Engineering Centre of Excellence (MILENG COE). In accordance with NATO policy[2], MILENG support to operations incorporates the EP specialist area of expertise. One of the core tasks of the MILENG COE is lessons learned, and through its Knowledge Management Portal, it offers a platform for collaboration and information exchange on EP matters, among others.

1.11. FILE MAINTENANCE

1. The creation of the Environmental File also encompasses the maintenance and custodianship of the File within the area used by NATO. The Environmental File will be the most important part of the EMS documentation[3]. Therefore, depending on the size of the activity, the Environmental Management Board (EMB) or the EPO is responsible for custodianship of the Environmental File of a Camp in a Joint Operations Area (JOA).

2. The proper maintenance and organization of the Environmental File will ensure a complete and transparent environmental condition disclosure, whether to another TCN or to the HN, during the conduct of mission closure. The Environmental File will become the NATO camp's EP historical record in the event of any questions concerning the camp's EP performance and management. Therefore, an accurate and organized File will assist with such processes.

3. Annexes A-F provide a recommended structure with key components of the Environmental File. Based on the level of development of a camp, infrastructure, or other use of an area, additional documentation may be required to complement the proposed structure in this AJEPP. The primary goal of the Environmental File is to provide commanders with an accurate, documented report of the environmental condition of an area throughout its lifecycle.

[2] MC 0560/1, MC Policy for Military Engineering
[3] STANAG 2583 - AJEPP 3, Environmental Management System in NATO Operations (paragraph 3.4, p. 3-2)

4. In a multinational setting, each nation is responsible to establish and maintain its own Environmental Files for locations made available for their use. It is also important, in a multinational setting, where a NATO EPO is responsible for the management of environmental issues at the NATO headquarters level in a JOA, that the TCNs' Environmental Files be provided to the NATO EPO. In some cases in a multinational setting, this may be the Lead Nation (LN) EPO. This process will promote transparency during any handover or closeout procedures.

5. Due to the restrictions placed on releasing documents with a NATO classification, it is recommended that the Environmental File contain no classification, unless there is sensitive information requiring a specific classification. An Environmental File with no classification is more easily released to other nations or to the HN.

ANNEX A ENVIRONMENTAL STUDIES

A.1. INTRODUCTION

Effective planning for EP measures begins with an understanding of the existing condition of the environment. The next consideration is whether NATO or TCN activities have had an impact—positive or negative—on that environment. This is achieved by completing an Environmental Baseline Study (EBS) at the beginning of a NATO activity and an Environmental Closeout Study (ECS) at handover or mission transition. Appendix 1 to this Annex provides the template to be used for both the EBS and the ECS. The level of detail of a given study will depend upon the characteristics of the mission and activities.

A.2. ENVIRONMENTAL STUDIES – GENERAL

1. During an environmental study, the EPO coordinates site investigations with the aim of delineating the extent of any existing contamination. It is important to identify the types—chemical, radiological, biological—and amounts (concentrations) of any such contamination. Depending on the number of unknowns from the initial assessment or reconnaissance, an EBS may consist of sampling soil around a camp perimeter by hand, or of a more detailed evaluation of soils, sediments, surface waters and groundwater. More environmental-quality data in space and time may be obtained by digging test pits, characterizing surface soils in depth, drilling boreholes, and installing monitoring wells. However, these latter activities may require support from environmental engineering specialists. An EBS of even a modest scope may be supplemented with additional studies when more resources become available.

2. Environmental Baseline Study (EBS). Once a site is selected for occupation, an EBS is conducted to confirm the results obtained in the initial assessment or reconnaissance, and to evaluate and document the current environmental conditions of the land, property, and infrastructure. If a camp design or plan already exists, the density of sampling for an EBS should be increased to account for higher-risk areas, e.g. areas intended for POL storage. This information will also assist in determining what precautionary measures should be taken to prevent personnel from being exposed to environmental contaminants of concern, and will ensure that NATO is not held liable in the future for contamination or damage caused by others. The results of the EBS are documented in a report (Appendix 1 of Annex A provides a template) that clearly identifies to the Commander areas of contamination, contaminant concentrations, and the associated media affected (water, soil, or air). The report shall also make recommendations regarding appropriate mitigation measures to prevent exposure.

3. Environmental Closeout Study (ECS). The ECS is conducted at the conclusion of occupation of a piece of property with the aim of determining if contamination has been caused by military activities. The ECS should, at the very least, investigate any contamination identified by the EBS and follow-on environmental reports. Investigations shall be focused on HAZMAT and POL storage areas, refuelling points, vehicle maintenance areas, ammunition storage, training or detonation areas, and the like: in short, where contaminants are more likely to have been left behind. If ongoing monitoring activities have been conducted properly during the period of occupation, there should be relatively few 'new' contaminated sites identified during the camp draw-down or decommissioning phase. Information from any Environmental Condition Reports and Spill Reports (see Annex C) should be included in the ECS. If new contamination is found, it should be delineated, documented, and where possible, corrected or mitigated before the force departs. If these actions cannot be taken before departure, the contamination must be disclosed to the HN or property owner, and negotiations should take place to determine appropriate future actions.

4. Initial Reporting. The information gathered during any environmental study is to be consolidated and circulated to the LEGAD, POLAD, and other Advisors before being forwarded to the HN or property owner or agent for review. Where possible, initial reports should be signed, and agreement should be sought, that NATO is not responsible for existing damage at the site and that NATO forces will not be held liable for rehabilitating this damage, or any future damage caused by outside influences.

5. Final Reporting. Upon returning a site to the HN, a final disclosure report should be produced, and this information circulated to the LEGAD, POLAD, and other Advisors before being forwarded to the HN for review. The purpose of the final disclosure report is manifold: to make the HN aware of any changes to the environmental condition of the site during the period of occupation, demonstrate NATO's commitment to EP, and provide a record in the event of future claims.

6. Monitoring. The EPO is to ensure that any changes to or events affecting the environmental baseline are recorded. The EPO is also responsible to the Commander to ensure that appropriate remediation measures are taken and follow-up actions occur after each spill or other environment incident.

7. In summary, keeping an up-to-date Environmental File creates continuity and provides an audit trail. It also allows a more efficient handover/takeover between forces.

A.3. ENVIRONMENTAL BASELINE STUDY ELABORATION

1. Appendix 1 to this Annex provides a detailed template and report format with which to complete an EBS. The following paragraphs provide supplementary information that elaborates the requirements of an EBS.

2. Site/Property Location. List the legal address and grid reference or latitude and longitude. Include both the sites to be occupied and any surrounding areas that may have impacted the sites to be occupied.

3. General Site Setting. Note whether the site was visually observed or identified from interviews or from record reviews. For an updated EBS or an ECS, the site should always be visually observed. The following should be noted:

a. The methodology used and limitations encountered during the initial (or updated) site reconnaissance or the closure inspection. Describe the method used to reconnoiter the property, e.g. the use of grid patterns or other systematic approach. List and describe any limitations encountered during the reconnaissance such as physical obstructions, bodies of water, pavement, weather, or uncooperative occupants.

b. Current uses of the property. Be as specific as possible.

c. Past uses of the property, listing all known past property uses. If a past use is likely to have involved the use, treatment, storage, disposal or generation of HAZMAT or POL products, include a detailed description or indicators of this use.

d. Current uses of adjoining properties. Be as specific as possible.

e. Past uses of adjoining properties. If a past use indicates a potential adverse environmental impact, include a detailed description.

f. Past, current and potential uses of the surrounding areas. List general types of past use, e.g. undeveloped, agricultural, residential, parkland, commercial or industrial/military. Limit ‘surroundings’ to that which can be seen or would clearly affect the area, such as upstream on a waterway.

g. Geologic, hydrogeologic, hydrologic, or topographic conditions. List the conditions and give a general description of the topography in the area. If indicated, analyze the likelihood of contaminant migration on or to the property through the soil, sediments, surface water or groundwater to/from the adjacent properties or the surrounding areas.

h. General description of structures. List buildings and their locations, size, basic construction type, number of stories and approximate age.

i. Roads. List all public thoroughfares adjoining the property and describe all roads, streets, parking areas and walkways.

j. Water supply. List and differentiate all sources of potable and non-potable water.

k. Sewage disposal system. Describe sewage disposal systems on the property and their general condition and approximate age.

4. Interior and Exterior Observations. Note the following items, to the extent they can be visually observed or identified from interviews or reviews of records (listing, in every case, the actual source of the information):

a. HAZMAT and POL products. Describe types and uses of products, the approximate amount, and manner and condition of storage. Indicate if treatment, storage, disposal or generation occurred on the property.

b. Storage tanks. Describe size, location, condition and approximate age of all above and below ground storage tanks.

c. Odours. Describe any noticeable odours and their source.

d. Pools of liquid. Note all surface water and describe all pools or sumps that contain water or other liquids that may contain HAZMAT.

e. Drums. Describe all drums and their conditions. If they are known to contain no HAZMAT, list only their contents.

f. Unidentified substance containers. Describe any open or damaged containers suspected of containing HAZMAT or POL products.

g. Polychlorinated biphenyls (PCBs). Include a description of electrical or hydraulic equipment likely to contain PCBs.

h. Check available logs of accidents or other incidents that could have caused spills.

i. Interior observations of the following:

(1) Heating and cooling systems, including the fuel source and amount of fuel.

(2) Stains and corrosion on floors, walls, and ceilings.

(3) Floor drains and sumps.

j. Exterior observations of the following:

(1) Pits, ponds and lagoons. Describe the pit, pond or lagoon, especially if it may have been used for hazardous waste disposal or waste treatment. Include a description of any pits, ponds or lagoons on adjacent or adjoining properties.

(2) Stained soil or pavement.

(3) Stressed vegetation and probable cause.

(4) Solid waste. Describe any filled, graded or mounded areas that would suggest the disposal of trash or solid waste.

(5) Waste water. Describe every discharge of a liquid into a stream or ditch that is adjacent to the property.

(6) Wells. Locate and describe all wells (monitoring, potable, dry, irrigation, injection, abandoned, etc.) on the property.

(7) Septic systems. List indications or the existence of on-site septic systems or cesspools.

(8) Ambient air quality. Smog, smoke and odours from industrial facilities and many hazardous waste products can be detected easily. Terrain can also affect air quality. Mountains and canyons can cause temperature inversions, which impact air quality. Setting up base camps with heating units and vehicles in an area prone to temperature inversions can cause poor air quality. Prevailing winds should also be considered.

(9) Unidentified Ordnance (UXO). Identify and ensure clearance before occupation.

(10) Open Burning/Open Detonation (OB/OD) sites. Munitions and UXO disposal can be a significant source of energetics, metals and other hazardous chemical contamination. OB/OD sites are often characterized by large pits and metal scrap.

(11) Former live-fire training range sites. Evidence of such sites includes metal scrap, stop butts, and static targets.

(12) Sites that may have held chemical, biological, or radiological munitions.

A.4. LEVEL OF ENVIRONMENTAL BASELINE DETAIL

The level of detail required in the EBS will be based on the information collected from environmental intelligence, the existing conditions of the local environment (as observed or measured), and discussions with locals and EP specialists. As a minimum, the EBS checklist in Appendix 1 is the recommended format for NATO activities. This checklist can be supplemented with field sampling and laboratory analysis. Sampling and analysis will be guided by national requirements for laboratory accreditation as no NATO standard exists at present. Local laboratory facilities can be used to analyze soil and water samples provided they have proper quality assurance and quality control procedures and certification. See SRD on environmental sampling for details on sampling protocols.

A.5. REFERENCES

1. The following references were used in developing this Annex:

    a. STANAG 7141, Joint NATO Doctrine for Environmental Protection during NATO-led Military Activities (AJEPP-4);

    b. STANAG 2582, Environmental Protection Best Practices and Standards for Military Camps in NATO-led Military Operations (AJEPP-2); and

    c. FM 3-100.4, MCRP No. 4-11B, Environmental Considerations in Military Operations (USA)

APPENDIX A1 - ENVIRONMENTAL BASELINE STUDY GUIDELINES

A1.1. EBS TEMPLATE – GENERAL

1. When completing the EBS form, the evaluator must consider that the information gathered could be used several years after its collection—likely after NATO forces have departed—and may be read by someone unfamiliar with the activity or with military activities in general. Clear, concise, and complete reporting is essential.

2. Detailed notes have been provided in the comments column of the form in order to assist it to be self-explanatory. It comprises four sections, as follows:

a. Section A – Evaluation Particulars.
Section A is used to capture information about the conditions under which the study was conducted. Include the qualifications and duty position(s) of the individual(s) preparing the EBS.

b. Section B – Site Identification.
The role of Section B is to provide sufficient information about the location to be able to return to the site at any point in the future. Reference to temporary information, e.g. military route names, should be avoided or complemented by permanent information, e.g. highway numbers.

c. Section C – Site Data.
Section C organizes the information to be collected on site by general categories of interest. Section C was designed to be as inclusive as possible. By its nature, not every location evaluated will concern every heading. Comments such as *Not Observed* or *Not Applicable* are preferred to blank cells.

d. Section D – Recommendation.
Section D provides the opportunity for the evaluator to record any initial (Baseline) or final (Closeout) findings and recommendations. Describe any deviations or deletions from the checklist used, and the environmental standards in use by the NATO-led force.

A1.2. RECOMMENDED EBS/ECS REPORT FORMAT

1. Synopsis
2. Table of contents
3. List of annexes
4. List of figures
5. List of abbreviations
6. Introduction
7. Aim
8. Scope
9. Technical details
10. Discussion
11. Results
12. Recommendations

Annex A: EBS checklist
Annex B: Site plan/layout
- Building numbers
- POL locations
- HAZMAT locations
- Waste and water management areas
- Maintenance locations
- Prevailing wind direction
- Runways
- Noise sources
- Well locations
- Surface water locations
- Firing ranges
- Medical facilities

Annex C: Infrastructure list (may not be available for an occupation EBS)
Annex D: Photos
Annex E: Environmental incident summary (not required for an occupation EBS)
Annex F: HAZMAT list
Annex G: Sampling locations
Annex H: Lab analysis

Environmental Baseline/Closeout Study Template

Section A – Evaluation Particulars	
1. Mission/Operation/Activity	
2. Current Occupant	
3. Unit Commander (Name/Rank/Position)	
4. Unit EP Officer (Name/Rank/Position)	
5. Evaluation Level	Preliminary [ ] Detailed [ ]
6. Camp / Area Name	
7. Date of Evaluation	
8. Evaluator (Name/Rank/Classification)	
9. Evaluator's Experience with Baseline Studies	1 2 3 4 5 None Extensive
10. Local Point of Contact	*This could be a local national such as the Host Nation EP officer on site.*
11. Personnel/Workers Interviewed	*Yes/No with names of locals interviewed. Name, address/home base and position. If a local, how long they have resided in the area, their profession, and other relevant information.*
12. Reviewers (Name/Rank/Position)	
Climatic Details (during conduct of EBS)	
13. Temperature (°C)	
14. Wind Speed:	
15. Wind Direction:	
16. Humidity:	
17. Air Quality:	*If there was a Preventive Medicine/Occupational Health report for the same area, indicate its results or "results to follow".*

18. Odours/Fumes/Smoke/ Dust	*From factories, latrines, wastewater treatment.*
19. Climatic particularities	*Risk of flooding, hurricanes, wind storms, katabatic winds, thermal inversions, monsoons, or drought.*
Section B – Site Identification	
1. Location (town) Name, Nickname, Alternate Names	
2. Map Reference/Grid (MGRS)	*Central point of EBS for the specific area being studied.*
3. Current Site Use	
4. Historical Site Use	
5. Current Site Use – Surrounding Lands	[ ] Industrial/Military [ ] Commercial [ ] Agricultural [ ] Residential [ ] Parkland [ ] Undeveloped Details: *Location of sensitive local areas such as schools, hospitals, detention facilities, or medical treatment facilities.*
6. Historical Site Use – Surrounding Lands	[ ] Industrial/Military [ ] Commercial [ ] Agricultural [ ] Residential [ ] Parkland [ ] Undeveloped Details: *Go back at least 50 years, if information is available.*
7. Other	
Section C – Site Data	
Culture/History	
1. Graveyards	
2. Battlefields– presence of UXO or Mines	*If possible, get the clearance certificate for the site and refer to this certificate. Battlefields are likely to have unspent ammunition, UXOs, and live mines. They could have human remains in unmarked or mass graves. The possibility of booby-traps must also be considered, particularly if the EBS involves any digging.*

3. OB/OD sites and live-fire training sites	*If possible, get documentation and any information regarding these activities. Site evidence may include burn pits, craters, range scrap, stop butts, and static targets.*
4. Monuments	
5. Archaeological Significant Features	*Cultural or religious sites of significance. Collect information from locals. Look at UNESCO website for possible reference locations and material. Document and inventory exact locations of cultural, historical or religious sites of significance.*
6. Other	
Ecology	
7. Vegetation	
8. Fauna/Insects	*Indicate poisonous insects and animals*
9. Sensitive Ecosystems	*Before deploying, check country data related to sensitive ecosystems (e.g. Natura 2000 for Europe) and international websites such as redlist.org.*
10. Other	
Geography	
11. Landfill Proximity (note MGRS)	*Proximity to and direction from the area. General topography.*
12. Mining Industries Proximity (note MGRS)	
13. Refineries Proximity (note MGRS)	
14. Sources of Noise Proximity (note MGRS)	
15. Other	

Hydrogeology	
16. Drinking Water (source)	*Surface/groundwater. How will (or how has) NATO's use of the area influence local water resources, and is the water supply of the surrounding area affected?*
17. Supply Wells (note MGRS)	*Data from well drilling (e.g. drilling or borehole logs).*
18. Monitoring Wells (note MGRS)	*Refers to a point where groundwater is sampled but not used for water supply.*
19. Soil Composition	*Be generic unless soil layer data is available. Use reputable sources, such as published soil studies, to find the general soil composition for the area.*
20. Soil Layer Pattern	*Data from well drilling (if available).*
21. Underlying Aquifers	*If unknown, state this. Talking to local contacts will help with this information*.
22. Other	
Topography	
23. Existing Watercourses or Ditches (note MGRS)	
24. Flood Potential	*Refer to historical data or local information, if available, and include the potential for flash floods.*
25. Horizontal Distance to Surface Water	*Approximate distance from a designated location to the nearest surface water source (stream, lake, ocean). Indicate whether there are any surface-water sources within 1 km of the camp.*
26. Run-on/Runoff Potential	*This will be related to the soil composition. Discussions with locals may be helpful to estimate runoff potential during storm events.*
27. Sinkholes	*Comment on the presence of karsts in the region.*
28. Slopes	

29. Stagnant Water	*If information is available through historical data, refer to this as well (e.g. stagnant water is a problem during the rainy season, from month X to month Y).*
30. Other	
Local or On-Site Practices	
31. Waste Collection and Disposal	*Include solid waste, batteries, and agricultural pesticide waste.*
32. Sewage and Sludge Collection, Treatment and Disposal	*Include grey water and black water disposal methods. If off-site disposal location is known, provide MGRS coordinates. Refer to existing waste disposal contract.*
33. Incineration	*Specify if any burn pits have been used.*
34. Containment Mechanisms about Contaminants	*Do POL/HAZMAT points have secondary containment? It is important to take photos of these cases. If no containment mechanisms are available, it is important to provide a recommendation on secondary containment to the incoming or on-site unit.*
35. Storage of Fuel/POL (note MGRS)	
36. Storage of Used Oil/ Coolant/Anti-freeze/ Batteries/Chemicals? (note MGRS)	
37. Use of Cleaning Products	
38. Use of Drip trays in Vehicle Compounds	*Identify percentage of vehicles with drip trays. If not used, provide a recommendation.*
39. Use of Halocarbons (Freon, Halon)	*Specify the types of refrigerant in use. This information should be available on air-conditioning or refrigeration equipment labels.*

40. Local Power Generation Methods (note MGRS)	*Generators and host nation power. If host-nation power is used, what is the method of power generation (coal-fired, oil, natural gas, nuclear, hydroelectric)?*
41. Firefighting (training, activities, products used)	*Specify locations where firefighting activities have taken place. Possible contaminants include perfluoroalkyl substances (PFAS).*
42. Other	
Construction	
43. Listing of Structures	*Provide an infrastructure list, if available, as an Annex. Estimate the ages of any buildings to be used as well as their construction materials and methods.*
44. Heating/Cooling of Structures	*Include fuel sources and amounts available. Also specify the types and quantities of refrigerant in use, which are found on air-conditioning equipment labels.*
45. Stains and Corrosion	*Describe stains on floors, walls, and ceilings.*
46. Drains and Sumps	*Describe floor drains and sumps.*
47. Ranges: Location (MGRS), Description, Usage	*Indicate types of ammunition used and frequency of usage.*
48. Description of Utilities Layouts	*Water, wastewater and power layout for the used area.*
49. Raw Sewage from Defective Piping	
50. Abandoned Sewer Lines/Open Sewers	
51. Manholes	*Specify the locations of communications or water/sewer manholes.*

52. Asbestos-Containing Materials	*Specify the locations of asbestos-containing materials. If unknown, seek information from local sources to determine the ages of, or construction material used in, the buildings on site. Potential asbestos-containing building materials include floor tiles, pipe and boiler/tank wrap, and ceiling insulation.*
53. Lead-Based Paint/Paint Chipping or Peeling	*If unknown, use the age of the buildings to make a generic statement (e.g. "given the age of the existing infrastructure, it is unlikely that lead-based paint is present").*
54. Hot Water Temperature	*Record the temperature of domestic hot-water mains to help assess the risk of the growth of* Legionella *bacteria.*
55. Indoor Ventilation	*This refers to ventilation (if any) other than air conditioning. Specify the condition of filters and ducts. Measure CO and CO_2 levels if possible..*
56. Laundry Outlets	*State the method of wastewater treatment and, if possible, what kinds of chemicals have been used. If there is existing contamination, state the extent and area. Identify areas where handling of anti-insect treated fabric may have taken place. Note whether laundry equipment is connected to sewerage and waste water treatment systems*.
57. Vehicle Maintenance	*Note locations of vehicle maintenance pads, parking areas, and oil–water separators.*
58. Vehicle-Washing Locations	*Specify locations and whether they have potential for surface runoff.*
59. PCB-Containing Devices	*Make reference to the age of the structures if the presence of PCBs is unknown. Information from local sources may help to determine age. More recent structures are unlikely to have PCB-containing devices. Note electrical equipment on site (e.g. transformers, circuit breakers, switches, voltage regulators).*
60. UFFI (Urea Formaldehyde Foam Insulation)	*Use the ages of buildings, if known, or information from locals.*
61. Other	

Existing Risks	
62. High-Risk Neighbours	
63. Known HAZMAT Handled on Site	*If a HAZMAT list is available, use this as an Annex. If not, state general information here.*
64. Spill/Incident Reports	
65. Underground Tanks: Proximity, MGRS, Number, and Contents	
66. Medical Waste: Locations and Procedures	*How medical waste is handled and disposed of.*
67. Other	
Observed Contamination	
68. Oil Sheens on Water	
69. Observed Environmental Accidents	*Areas where there is distressed vegetation may be indicators of environmental accidents.*
70. Stained or Discoloured Soil	
71. Evidence of POL Contamination	*Describe the phase of contamination (solid, pooling, free flowing product, staining) and type of POL product (gasoline, diesel, oil/grease).*
72. Other	
Section D – Recommendations	
General Comments/Actions Required	
Common recommendations include the following: 1. *Unit should deploy with integral spill response equipment given the lack of local resources.* 2. *Secondary containment is required for all POL and HAZMAT storage.* 3. *Establish an incident reporting and response system.*	
References:	

ANNEX B ENVIRONMENTAL IMPACT ASSESSMENT

B.1. INTRODUCTION

1. During the conduct of a NATO activity, projects will be implemented throughout the mission area. Completing an Environmental Impact Assessment (EIA) will enable the project manager to comprehend the environmental impact of activities and, as such, implement mitigating measures to manage these environmental impacts. An EIA differs from an environmental study in that an EIA is completed for an individual project or activity in order to determine its impact on the environment. An EIA is also distinct from an ECR, which is completed to document changes in the environmental conditions of the used area, as outlined in Annex C. Appendix 1 to this Annex provides an EIA report template which can be used for NATO activities.

2. The completion of an EIA may be required for the following types of activities:

a. construction projects;
b. demolition projects;
c. projects near a water body[1]; and
d. projects involving significant changes of use of a facility or area.

B.2. GUIDELINES FOR ENVIRONMENTAL IMPACT ASSESSMENTS FOR NATO-LED MILITARY ACTIVITIES

1. Purpose. The purpose of an environmental impact assessment is to assess the potential environmental impact of a proposed activity and to recommend measures for the prevention or mitigation of significant adverse impacts.

2. Orders and Directives. The operations/exercise order should provide clear guidance and direction on the requirements for environmental impact assessments for NATO-led activities. This guidance may be included in an environmental annex. Guidance should include:

a. regulatory or legal requirements for conducting environmental impact assessments;
b. exemptions or exclusions to the requirement for conducting environmental assessments, if applicable;
c. reference to applicable international agreements such as status of forces agreements (SOFAs) or memoranda of understanding (MOUs), where these include direction on environmental impact assessment;

[1] As a guideline, this could be any project within 50 m of a water body (river, lake, ocean).

d. responsibilities for conducting the environmental impact assessment, including the coordination of environmental impact assessment requirements of participating nations and the HN; and

e. environmental constraints in the proposed location for the activity being assessed.

3. Guiding Principles.

a. Early Planning. The environmental impact assessment process should start as early as practicable during the planning of the activity and before irrevocable decisions are made, so that environmental factors are considered with other relevant factors during the decision-making process.

b. Appropriate Level of Effort. The level of effort and cost for undertaking an environmental impact assessment should be proportional to the level of the potential environmental effects.

c. Open and Participatory. The environmental impact assessment process must be open and balanced and should provide the opportunity for an appropriate level of consultation with local authorities, subject-matter experts, and the public (where practicable and consistent with operational constraints and local considerations).

d. Objectivity. The environmental impact assessment should be objective and use relevant scientific, technical and environmental expertise.

4. Description of the Activity. The first step in the environmental impact assessment is to identify the operational activities that could have a potential impact on the environment. Potential alternatives and contingencies should also be identified, as should the potential for accidents or malfunctions. All phases of the activity should be described.

5. Environmental Setting of the Activity. Describe the general environmental setting and characteristics of the area in which the activity will take place, including:

a. the general environmental condition of the area;
b. existing land use (socio-economic, traditional, and cultural aspects);
c. climate;
d. water and air quality;
e. natural resources, flora and fauna;
f. wetlands and biodiversity;
g. endangered species and critical habitats; and
h. sites of archaeological, cultural or historic significance.

6. Environmental Impacts. Identify the potential impacts on the natural and physical environment that may be caused by NATO-led activities, including the potential impacts of accidents and malfunctions.

7. Mitigation and Monitoring. The environmental impact assessment should identify feasible mitigation measures to eliminate, reduce, or control adverse effects on the environment. Energy efficiency, while not strictly an EP function, serves to mitigate one of the most common and significant environmental risks: handling petroleum.[2] The requirement to monitor the environmental impacts of activities should be identified, as should responsibility for compliance with applicable laws, regulations, standards, and environmental guidelines.

B.3. REFERENCES

The following references were used in developing this Annex:

a. STANAG 7141, Joint NATO Doctrine for Environmental Protection during NATO-led Military Activities (AJEPP-4); and
b. UNEP, 2004, Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach (Available at https://unep.ch/etu/publications/textonubr.pdf).

[2] AJEPP-2 describes best practices for EP and energy efficiency. These best practices are to be considered when determining mitigating measures for military activities.

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APPENDIX B1 ENVIRONMENTAL IMPACT ASSESSMENT REPORT TEMPLATE[1]

Part I – General Information

1.1 Project Title:

1.2 General description of the project (project overview): *Give sufficient detail for a third party to understand what undertaking(s) is/are being proposed. Provide a general description of the work being performed (construction of a building, road, excavation)*

1.3 Project schedule: *Estimated start and completion dates of the project.*

1.4 Originating Unit: *Name of the organization/unit conducting the project/EIA.*

1.5 Type of Project:

a) Physical Work[2] Yes [ ]
b) Physical Activity[3] Yes [ ]
c) Other [ ]

1.6 Project File #:

1.7 Contacts

1.7.1 Environmental Impact Assessment Coordinator: *The EIA Coordinator is normally the local EPO.*

a) Name, Rank, and Title:
b) Address:
c) Telephone Number:
d) Fax Number:
e) Email Address:

1.7.2 Project Point of Contact: *The person responsible for ensuring that the EIA is conducted.*

a) Name, Rank, and Title:
b) Address:
c) Telephone Number:
d) Fax Number:
e) Email Address:

[1] The EIA Report template is provided as an example for nations who wish to apply the EIA process during military activities. Other (e.g. nationally accepted) templates may also be used.
[2] Includes infrastructure/construction projects.
[3] Typically include troop movements or manoeuvres/operations.

Part II – EIA Report Template

2.0 Describe the project and the scope:

a) Description of the project: *Describe the project throughout its full life span (e.g. construction, operation, decommissioning). This is a general description of the project—specific details are included in the next paragraph.*

b) Project components, scope and timeframe: *List and describe the components of the project. Include each phase of the project, with details and dates/times by which they will be completed.*

2.1 Describe the existing environment:

a) General description: *Give a general description of the environment in the study area including surrounding land use, the built environment, and any historical or archaeological artifacts. Make note of any environmentally sensitive areas in the region such as wetlands, water resources, watercourses, terrestrial, aquatic or avian species and their habitats.*

b) Site visit information: *Who visited the site, what was its scope, and what resulted?*

c) Sources of information: *References, including scientific reports, online resources, and interviews, used to describe the existing environment.*

2.2 Scope of the assessment:

a) Boundaries: *Describe the physical and temporal boundaries of the study area, as well as any administrative or jurisdictional boundaries that may be relevant.*

b) Consultation with other departments, agencies, stakeholders, or organizations: *Identify the parties consulted, if applicable; when and where the consultations took place; and identify issues raised and how they were addressed.*

c) Consultation within your organization: *List and describe consultations, e.g. items and issues discussed and any proposed or agreed recommendations within the organization. Typical consultations are with the EPO, Engineering, and Medical staffs.*

d) Consultation with the public: *Indicate if consultations were necessary. If the public or other non-governmental parties were consulted, identify the parties involved, when and where the consultation took place, and identify the issues raised and how they were addressed.*

e) Valued Ecosystem Components (VECs): *List the pertinent VECs that may be affected (e.g. watercourses, aquatic, terrestrial, avian species and/or habitat, human health and safety, etc.) by the project. The VECs in the following matrix (section 2.4) may be used as a guide. Adapt the matrix as needed in accordance with the site specific VECs.*

2.3 Predict Environmental Effects: *Identify potential environmental effects.*

The following matrix can be used to identify potential interactions between project components and identified VECs. In the left-hand column of the matrix, list the components/phases of the project. Across the top of the matrix, list the environmental components and VECs relevant to the study area. The VECs on the matrix are only a guide to typical environmental components. Systematically examine each place where a project activity intersects with an environmental component and determine whether there is a potential significant effect.

2.4 Environmental Effects Matrix[1]

VALUED ECOSYSTEM COMPONENTS (VEC)																				
	PHYSICAL						**BIOLOGICAL**							**SOCIAL**						
PROJECT COMPONENT Enter each component, e.g. phases of construction, aspects of an operation.	Atmosphere	Surface Water	Ground Water	Soils	Terrain	Ambient Noise	Terrestrial Animals	Terrestrial Habitat	Aquatic Animals	Aquatic Habitat	Avian Species	Avian Habitat	Vegetation	Historical/Cultural	Recreation/Aesthetic	People/Health	Economy	Land Use	Natural resources	Other (specify)

Legend: _: No effect X: Potential Effect U: Uncertain if there is an Effect

[1] The list of VECs is not exhaustive, and it is not obligatory to analyse each VEC for each project.

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2.5 Discussion of Effects, Mitigation and Significance: *Complete a separate section for each project component or phase and their interaction with a VEC (effect) from the matrix that results in a potential effect. The discussion should focus on the VECs that could be significantly affected by the project.*

Provide a description of how the effect could occur, its potential scope or extent; describe the proposed mitigation measures; and state whether or not there is likely to be any significant adverse impact after mitigation.

State also whether there will be a need for follow-up or monitoring.

a) [Heading 1] *e.g. Site Preparation and Construction*

- **Project activity or component(s):**
- **VEC(s) effected:**
- **Description of the effect:**
- **Potential accidents or malfunctions:**
- **Mitigation measures:**
- **Residual effects:** *Are there likely to be significant, adverse impacts after mitigation measures are implemented?*
- **Determine significance**: *Are there any significant unresolved issues or major areas of uncertainty? Factors in determining significance include magnitude of impact; geographic extent of the impact; public concerns; compliance or non-compliance with environmental standards; impact on public health and safety; duration and frequency of impact; irreversibility of the impact; and ecological context.*
- **Proposed/required surveillance monitoring:**
- **Necessity of follow-up program:**

b) [Heading 2] *e.g. Operation and Maintenance*

- **Project activity or component(s):**
- **VECs effected:**
- **Description of the effect:**
- **Potential accidents or malfunctions:**
- **Mitigation measures:**
- **Residual effects:**
- **Determine significance:**
- **Proposed/required surveillance monitoring:**
- **Necessity of follow-up program:**

c) [Heading 3] *e.g. Decommissioning […]*

Effects of the Environment on the Project: *Identify the effects that the environment through factors such as prevailing or changing weather patterns (wind, rain, temperatures) or geological risks (earthquakes or subsidence resulting from permafrost thaw), the measures to mitigation these effects, and state whether the residual effects are significant or not.*

Determine Cumulative Effects:

a) *Identify other certain or reasonably foreseeable projects that affect or may affect the same VECs as this project.*
b) *Describe the potential for cumulative environmental effects.*
c) *Describe required mitigation measures.*
d) *Determine if residual effects will be significant.*

2.6 Follow-up Program: *Determine if a follow-up program is required for the project.*

Yes [ ] No [ ]

If yes, provide the following details of the program:

1. The anticipated start and end dates for the follow-up program;
2. Whether the terms and conditions of the follow-up program have been included as part of a legal document (i.e. contract, permit, authorization)
3. Rationale for implementing the follow-up program (e.g. environmentally sensitive area, public concerns, etc.)

If not, include a rationale as to why not.

2.7 References: *List and state the relevance of any applicable laws, regulations, policies, guidelines, SOPs, reports, etc. used to complete the EIA report.*

a) Regulations and policies:
b) Other references:

2.8 Methodology used to identify impacts, determine significance and assess cumulative effects:

Part III – EIA Report Template

Summary of Assessment of Effects and Conclusions

3.1 Executive Summary: *Provide an executive summary of the principle conclusions of the assessment, including the major concerns, mitigation measures and residual impacts after mitigation (if any). Include a summary of any significant public concerns and state if these have been resolved. Identify which recommendations from the EIA Report will be incorporated into the project design and implementation.*

Important: *Responsibility for the implementation of mitigation measures must be identified and, where required, funding provisions should be identified.*

3.2 EIA Determination:

On the basis of this EIA Report, it has been determined that the impact of this project on the environment is as follows (indicate with an X):

- The EIA provides no determination. Further research, as specified in the report, is necessary: [ ]

- The project is not likely to cause any meaningful adverse environmental effects. The project **can** proceed: [ ]

- The project could cause significant, but mitigable, adverse environmental effects. The project **can** proceed **with** application of the mitigation measures specified in this report: [ ]

- The project is likely to cause immitigable, significant, and adverse environmental effects. Alternatives need to be considered: [ ]

Part IV – EIA Report Template

Recommendation and Sign-off

Part IV of the EIA Report Template must be signed-off by the Project OPI before final submission to the reviewing authority.

4.1 EIA Report Prepared by:

_____ _____
Signature Date (dd-mm-yy)

4.2 EIA Report Reviewed by: *With recommendation by local EPO, if applicable*

_____ _____
Signature Date (dd-mm-yy)

4.3 EIA Report Accepted and Approved by:

The undersigned accepts the determination and recommendations of this environmental screening report. The undersigned also accepts the responsibility to incorporate the recommendations of the report into the project design and implementation.

_____ _____
Signature Date (dd-mm-yy)

ANNEX C ENVIRONMENTAL CONDITION REPORT

C.1. INTRODUCTION

The Environmental Condition Report (ECR) functions as a situation report, or interim report, for a given site. ECRs may be conducted through the initiative of the local force or at a frequency directed by a higher headquarters. ECRs support the need to document the condition of a given site over time (interim snapshots), as well as helping to ensure that an appropriate environmental focus is being maintained. The basic format of the ECR may also be used when further documenting (after an initial report) an incident such as a POL spill. Appendix 1 of this Annex provides an ECR format. Appendix 3 of this Annex provides a Spill Report format.

C.2. ENVIRONMENTAL CONDITION REPORT – FORMAT AND CONTENT

1. The recommended format and content of the ECR are as follows:

   a. Site/Incident Location. List the legal address and grid reference or latitude and longitude of the incident location, or refer to the applicable EBS to link the ECR to a given site.

   b. Site/Incident Description and Background. Document any change to the description of the site (installation), or its EBS and historical use(s) or the circumstances concerning the incident. For an incident at a location not covered by an EBS, it is critical to provide the same sort of information contained in a standard incident/accident report.

   c. Map/Description of the Incident Location. If the ECR is related to a site covered by an EBS, this entry relates to the information already provided in the EBS. If the ECR defines a location where an incident has occurred that is not covered by an EBS, the description needs to have enough detail to direct a follow-on element to the site.

   d. Summary of Environmental Conditions. List the environmental event(s) at the site/location and changes to infrastructure or activities. If the ECR is a periodic report for a given site, then significant event, such as a major spill, should have been reported using the Spill Report format (Appendix 3) and further documented using the basic ECR format. In this case, refer to any Spill Reports and any significant incident ECRs that may have occurred at the given site over the time frame covered by the periodic ECR. Also provide a 'snapshot' report of the types of HAZMAT and hazardous waste that are stored at the site. Describe minor spills and other events that have occurred over the time frame in question in basic terms, including quantities and the spill response methods used. Four examples are provided as follows:

(1) Example 1. Twelve liters of waste oil spilled at the hazardous waste accumulation site (HWAS) northwest of the maintenance building (see map) at 1600 hrs (local) on 16 Dec 09. The 22nd MP Bn contained the spill with assistance by local-national contractor White & Jones by 1725 hrs. About 3 m^3 of contaminated soil was taken to the White & Jones hazardous waste disposal area in Juvonia.

(2) Example 2. Raw sewage ran from a pump house behind the main warehouse (see map) for an estimated three days during the initial stages of occupying the camp in early June 2010. The problem was identified on 13 Jun 10 and corrected when the pump was repaired on 14 Jun 10.

(3) Example 3. A fuel tanker overturned at the road intersection in the vicinity of MGRS 12ABC3456789012 (see map) at 2000 hrs on 9 Nov 11 during the road march to BIGTOWN. Immediate mitigation included spill containment by the employment of all available spill kits with the unit. Higher headquarters was immediately notified. An estimated 12 m^3 of F-34 spilled at the site. The vehicle has been righted, and excavation of the site will begin at first light on 10 Nov 11.

(4) Example 4. Due to a mission review, a nation increased its firepower and protection by adding more armoured vehicles. The existing maintenance workshop had to be enlarged and relocated to MGRS 12ABC0987654321 (see map). The ammunition storage facility located at MGRS 12ABC9876543210 also had to be enlarged.

e. If the purpose of the ECR is to document an environmental incident, describe or propose mitigating measures to prevent similar incidents in the future. The environmental aspect analysis (including the environmental risk assessment) and the environmental action plan[1] should be updated taking into account the results of the analysis of the incident.

[1] Both described in STANAG 2583/AJEPP-3, Environmental Management System in NATO Operations.

2. If an assessment of the new situation has to be determined, then one of the following statements should be used:

a. “The environmental incident or change to the site does not pose an undue risk to the environment. Additional monitoring or corrective actions are not required.”; or

b. “The environmental incident or change to the site has or will result in a significant environmental impact. Corrective actions and/or monitoring are required.”

The new situation has to be recorded and added to the Environmental File. A detailed map is the best option to clearly present the situation. Appendix 2 of this Annex provides an example

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APPENDIX C1 NATO ENVIRONMENTAL CONDITION REPORT TEMPLATE

NATO ENVIRONMENTAL CONDITION REPORT

General Information

Site - Nearby city - Name Camp - Coordinates / grid	 - - -
Occupant/Nation:	☐ NATO☐ ……
Unit	
Unit Commander:	
Unit EP Officer:	
ECR Prepared by:	
ECR Date:	Site visit conducted on: Reviewed by: Report completed on:
Previous Studies:	EBS by ……. dated …….. Other:

1. Summary of ECR Findings: Short paragraph to indicate why this ECR is established. Examples of changes requiring an ECR:

- Installation of a new waste water treatment plant;
- Relocation of a maintenance workshop;
- Arrival of new equipment, type of vehicles,
- Units' mission review / change in site use with impact on EP issues;
- Change in surrounding land use; and
- Conduct of a new EBS

2. Environmental Aspects and Risk Assessment

a. Aspects checked are described in this Environmental Condition Report:

□ Domestic Water
□ Sanitary Waste Water (Grey Water)
□ Non-hazardous Solid Waste
□ Medical Waste
□ Hazardous Wastes
□ Noise
□ Vehicle and Equipment Washing
□ Spill Control
□ Historical or Cultural Resources
□ Hazardous Materials
□ Air Emissions
□ Petroleum, Oils and Lubricants
□ Ammunition Disposal
□ Site Contamination
□ Natural Resources
□ Other: (specify)

b. Detailed description of changes and impact on the environment. (Whenever applicable this section is completed with appendices.)

- Appendix 1: Map or plan with indication of changes / new situation
- Appendix 2: Pictures
- Appendix 3: Additional reports or information (e.g. spill report)

c. Environmental Condition Determination & corrective measures: Based on a careful review of the findings, the following determination has been made (choose one):

☐ The environmental incident or change to the site does not pose a significant risk to the environment. Additional actions are not required.

☐ The environmental incident or change to the site has or will result in a significant environmental impact. Actions are required.

Change/Incident	Required action	Responsibility

d. Mitigating & preventive measures: Based on an analysis of the cause-effect relation of the incident, the following additional mitigation measures are proposed in order to minimize the risks of future incidents:

Cause	Effect	Proposed Mitigation Measures

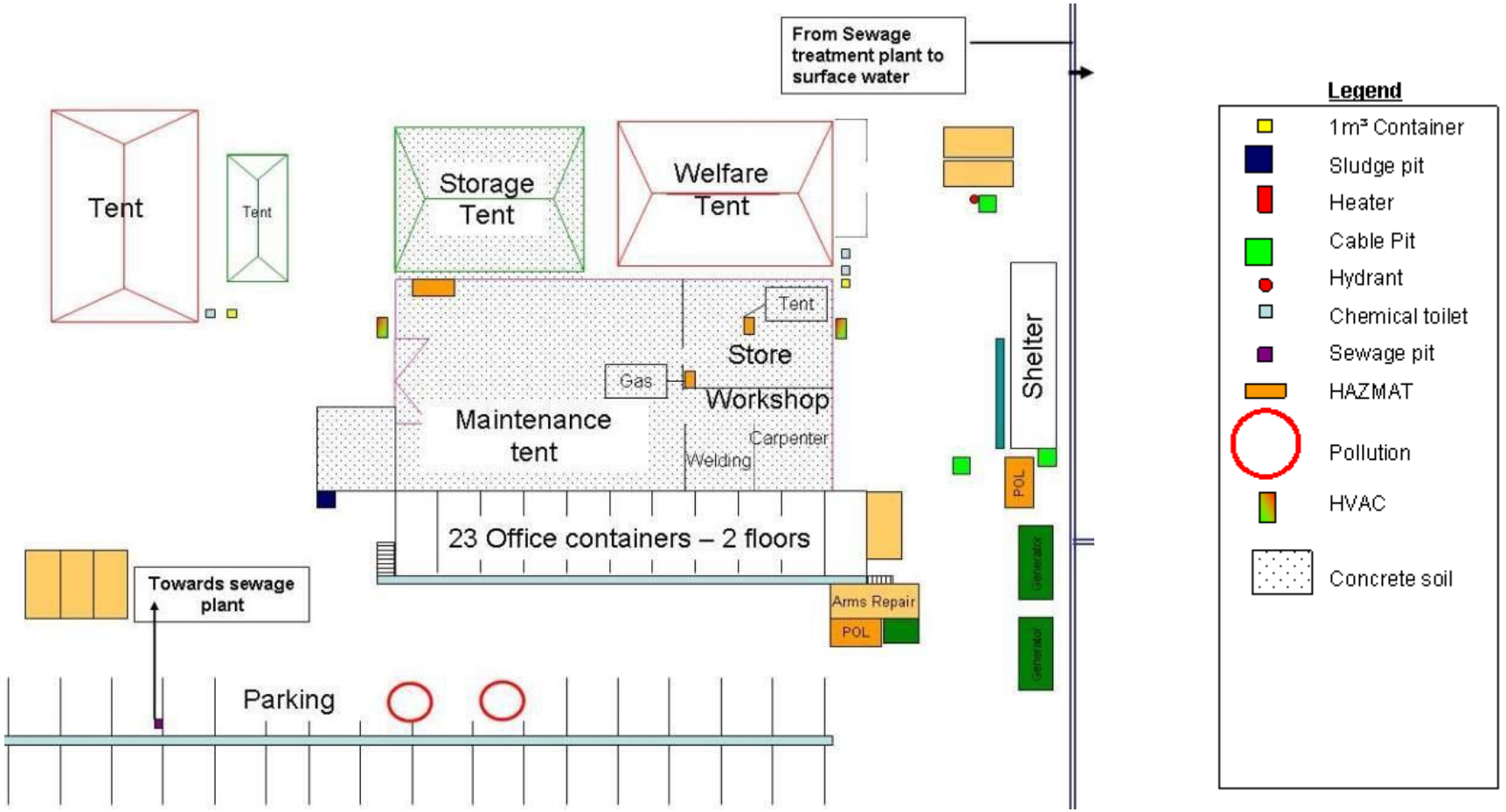
Prepared by: <Signature> Date

<EPO>
<Unit>
<Rank, Position Title>
<Telephone Number>

Approved by: <Signature> Date

<Base Camp Commander>
<Unit>
<Rank, Position Title>
<Telephone Number>

APPENDIX C2 SAMPLE GRAPHICAL ENVIRONMENTAL CONDITION REPORT



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APPENDIX C3 NATO SPILL REPORT FORMAT

NATO SPILL REPORT FORMAT

1. WHO

For questions 1 to 8, provide rank, name, unit, telephone number, and e-mail address
(*e.g. OR-5 BLOGGINS, I.M., 4 Royal Rifles (Mech), +32 11 22 33 44, ian.bloggins@def.net*)

1. Who completed the report?_____

2. Who reported the spill? _____

3. Who spilled the substance? _____

4. Who responded to the spill? _____

5. Was anyone injured as a result of the spill? If so, who? _____ (Yes or No)

_____

6. Whom did the unit notify of the event? _____

7. Who was the first responder? _____

8. Who was or is the incident commander? _____

2. WHAT

9. Briefly describe the incident. What is the cause of the spill? What is the source of the spill? (*e.g. leak in armoured vehicle/aircraft/vessel fuel storage tank*)

_____

_____

10. Describe weather conditions.

_____

11. What substance was spilled? If not known, is the substance a solid, a liquid, or a gas?_____

12. What actions did the unit take to stop the spill?

_____

_____

13. What is the quantity and unit of the spilled substance? (*e.g. 50 L, 17 kg, 30 m^3, 9300 lbs*)

_____

14. What is the maximum volume (capacity) of the container, vessel, or storage tank that released the substance?

_____

15. What is the estimated volume of the excavated spill residue, contaminated soil, or water?

_____

16. Was there any property damage? (*e.g. vehicle, road, signs, structures*)

_____

17. What is the current status of the site? Was the spill stopped? Is remediation ongoing or complete? Was the substance released all at once or is the substance still leaking? _____

_____

18. What follow-up actions are required by the host nation (HN)?

_____

_____

19. What measures have been taken to dispose the resulting waste?

_____

_____

3. WHEN

For questions 19 to 22, provide ZULU Date–Time Group or specify if otherwise (*e.g. 31 1857Z MAY 18*)

20. When did the incident occur? _____

21. When was the incident reported? _____

22. When did the first responder arrive? _____

23. When was the spill cleaned up, if applicable? _____

4. WHERE

24. What was the closest civic address to the spill? (*Specify town, road, etc.*)

---

25. Provide coordinates. For MGRS co-ordinates, specify full Grid Zone Designation. (*e.g. 12ABC3456789012*)

Provide depth or altitude if not at ground level. (*e.g. underground storage tank at 2 metres below ground level; airborne fuel jettison at Flight Level 190*)

---

26. Was the spill on a military training area? (Y/N)

27. How close was the spill to a water-body, river or wetland?

---

28. Did the spill reach a water body or storm drain? (Y/N)

5. SIGNATURE BLOCK OF SPILL REPORTER

<Name, Initials>
<Rank>
<Appointment>
<Phone/E-mail>

6. APPENDICES (OPTIONAL)

Appendix 1 – Photographs of spill
Appendix 2 – Environmental sampling data

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ANNEX D HAZARDOUS MATERIAL RECORD MANAGEMENT

D.1. INTRODUCTION

The improper management of hazardous material has the potential for serious impacts on the local environment during the conduct of NATO activities. As such, it is essential that TCNs document and maintain proper records. These become particularly important during the handover or closure of the used area. This Annex provides guidance on hazardous material record management. Of note is the primary responsibility for hazardous material management resides within the NATO logistics organizations. Record management will be coordinated between both logistics and environmental specialists.

D.2. GUIDANCE

1. The management of the records related to hazardous material will vary from nation to nation based on specific national policies. However, Appendix 1 of this Annex provides an example which should be used and included with the NATO Environmental File. The use of the format in Appendix 1 will mitigate any potential for national variances during handover or transition of an area used by NATO.

2. At a minimum, the three tables listed in the Appendix (Record of Hazardous Material, Record of Hazardous Waste and Record of Maintenance of Refrigeration and Air Conditioning Equipment) should be included in the NATO Environmental File. Supplementary information may be added based on the specific activity.

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APPENDIX D1 SAMPLE HAZARDOUS MATERIAL RECORD MANAGEMENT

D.1. INTRODUCTION

RECORD OF HAZARDOUS MATERIAL

Date of Record	IUPAC or Other Name of Chemical Substance	CAS Number of Chemical Substance	Name of Preparation	Quantity Acquired (kg)	Quantity Used or Dispensed (kg)	Residual (kg)

RECORD OF HAZARDOUS WASTE

Date of Record	Period	Waste Type and Code (EU Waste Catalogue)	Quantity Produced (kg)	Quantity Handed Over (Exported) or Disposed (kg)	Waste Receiver or Method of Disposal (if Local Disposal)	Residual (kg)

RECORD OF MAINTENANCE OF REFRIGERATION AND AIR CONDITIONING EQUIPMENT (FILLED WITH ≥ 3 KG OF OZONE-DEPLETING SUBSTANCE / FLUORINATED GAS REFRIGERANT[1])

Date of Record	Equipment Type, Model and Location	Refrigerant Name and Quantity (kg) in one Piece of Equipment	Work Performed (Check for Leakage, Servicing, Maintenance, Repair, etc.)	Quantity (kg) and Name of Recovered (Pumped Out) Refrigerant	Quantity (kg) and Name of Added (Filled In) Refrigerant	Receiver of Recovered (Pumped Out) Refrigerant

[1] This is a guideline only. If national requirements mandate keeping records of all maintenance of refrigeration and air-conditioning equipment, regardless of quantify of ozone-depleting substances/fluorinated gases, this information should be used in this table.

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ANNEX E ENVIRONMENTAL HANDOVER / TAKEOVER DECLARATION

E.1. INTRODUCTION

At both the beginning and ending of a NATO activity, the state of the environment is assessed in the EBS and ECS. This assessment should be confirmed by both parties handing/taking over the area. The Environmental Handover/Takeover Declaration is intended to address eventual EP concerns during these two phases and declares the acceptance of the EBS/ECS by both parties.

E.2. RESPONSIBILITY

1. The person (normally the EPO) responsible for the Environmental File is to ensure that a copy of the File is transferred during handover. For internal rotations within TCNs, it is important to ensure that the accuracy of the Environmental File is maintained.

2. An important aspect of the closeout will be the completion of an Environmental Handover/Takeover Declaration between the outgoing nation and the incoming nation or HN. This will be the formal acceptance of the environmental site condition by the incoming nation or HN in the event that the NATO nation is vacating the site. Appendix 1 of this Annex illustrates the Environmental Handover Declaration which will be incorporated into the Environmental File.

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APPENDIX E1 NATO ENVIRONMENTAL HANDOVER / TAKEOVER DECLARATION TEMPLATE

NATO ENVIRONMENTAL HANDOVER / TAKEOVER DECLARATION

This section should be completed in preparation for site handover/takeover or during Transfer of Authority. This report will serve as a portion of the Environmental File documentation.

1.0 Property Transfer Information

Name of current Occupant(s) or Property Owner(s):

Name of Future Occupant(s) or Property Owner(s):

Expected Date of Handover/Takeover:

Proposed Post-Occupancy Property Use: ☐ Industrial / Military ☐ Commercial ☐ Agricultural ☐ Residential ☐ Parkland ☐ Unknown

2.0 Site Assessment Information

The following assessments have been conducted at this site:

No	Type of assessment (EBS, ECR, ECS)	Author	Date (YYYY/MM/DD)	Title
1				
2				
4				
5				
6				
7				
8				

3.0 Summary of Corrective Actions and Mitigation

Corrective or mitigating actions were undertaken at the following sites:

3.1 Site Name:

Site Location:	See map
Affected Media:	☐ Soil ☐ Groundwater ☐ Surface water ☐ Air ☐ Infrastructure
Details of Contamination:	1.
Corrective / Mitigation Approach:	1.
Standards Used:	1.
Date of Actions:	<Date the corrective or mitigation work was undertaken>
References:	<List all reports pertaining to the work conducted at the site>

4.0 Outstanding Environmental Issues

The following environmental issues remain outstanding on this property:

4.1 Title:

Location:

Description:

Reason Issue not Addressed:

Section 5.0 – Environmental Baseline/Closeout Study Declaration

The Environmental Baseline (takeover)/Closeout (handover) Study of_____ was conducted using the most complete information available to the reviewer(s) at the time. Conclusions and findings are based on the reviewer's best professional judgment. Reasonable efforts have been expended to ensure property conditions have not degraded beyond pre-occupation conditions, and to confirm that any areas of concern arising directly from the occupancy of the site have been addressed to the extent required in the applicable agreements. NATO or participating nations will not be held liable for rehabilitating contamination arising from activities that occurred prior to its occupancy, or for contamination originating from other parties not within its control.

Prepared by:	<Signature>	
	< Name of the person preparing the declaration >	Date
	<Rank, Position Title>	
	<Telephone Number>	
Declared by:	<Signature>	
	< Camp Commander >	Date
	<Rank, Position Title>	
	<Telephone Number>	
Reviewed by:	<Signature>	
	<Name of Reviewer for Property Occupant or Owner>	Date
	<Rank, Position Title>	
	<Telephone Number>	
Accepted by:	<Signature>	
	<Name of Reviewer for Property Occupant or Owner>	Date
	<Rank, Position Title>	
	<Telephone Number>	

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ANNEX F ENVIRONMENTAL HEALTH SITE ASSESSMENT AND ENVIRONMENTAL BASELINE STUDY

F.1. INTRODUCTION

In the context of a NATO deployment, two elements manage environmental issues. In general, the Engineer branch concern is protection of the environment from soldiers while the Medical branch concern is protection of military personnel from the environment. Thus, typically the Engineer organization manages the Environmental Baseline Study (EBS) while the Medical organization manages the Environmental Health Site Assessment (EHSA). Both functions are distinct in how the information is interpreted; however, there are commonalities and an opportunity to collaborate towards a common goal. This Annex considers how the EBS and EHSA can complement each other during the conduct of a NATO operation.

F.2. DISTINCTION BETWEEN EHSA AND EBS

1. The EHSA and EBS have several similarities and shared data elements. The topic areas of concern to each are outlined in Table F.1.

Topic	EBS	EHSA
Conceptual Site Models		X
GW monitoring wells • On-site monitoring • Off-site monitoring	X	X
Surface water	X	X
Soils	X	X
Cultural resources	X	
Air Quality		X
Landfills • Pre-existing open • Pre-existing closed	X	X
Risk Assessment	On environment	On human health

Table F.1: EBS and EHSA Topic Areas

2. The objective of the EHSA is to identify complete or potentially complete exposure pathways at deployment sites that may affect the health of deployed personnel. Data generated is used to conduct environmental health risk assessments.

3. The sampling and analysis of the EHSA is conducted to confirm potentially complete exposure pathways and validate the conceptual site models. This continuous evaluation and assessment process makes the EHSA markedly different from the EBS, which is typically completed before and after an exercise, operation or acquisition of property.

4. Three elements of an EHSA cause it to be significantly different from an EBS:

   a. The identification of exposure pathways, achieved through the use of conceptual site models;

   b. The identification of the environmental health risk. This can be used to develop the medical threat brief and the force health protection annex; and

   c. The exposure pathway and environmental health risk are used to assess the environmental health risk using composite risk management.

5. The linkages between the EBS and EHSA are illustrated in the following diagrams and figures. The components of each are compared in Figure F.1. The coordination of work effort between the EBS and EHSA is an important aspect. Knowing the different perspectives (Figure F.2), the sampling plan can be coordinated to ensure the needs of all three parties (engineer, medical and legal) are addressed. This partnering can have great benefits as far as environmental sampling costs are concerned.

Five components of an EHSA	Five components of an EBS
• Pre-deployment activities • Site reconnaissance • Sample collection • Conceptual site model (CSM) • Reporting	• Gathering of baseline data and information (including sampling) • Analysis of data and information • Determination of the environmental conditions of the site • Preparation of the EBS report • Updating of the EBS
Source: • ASTM International ASTM D 6008-96 Standard practices for conducting Environmental Baseline Surveys. West Conshocken, PA: ASTM 2005	

Figure 1.3: Components of an EHSA and an EBS

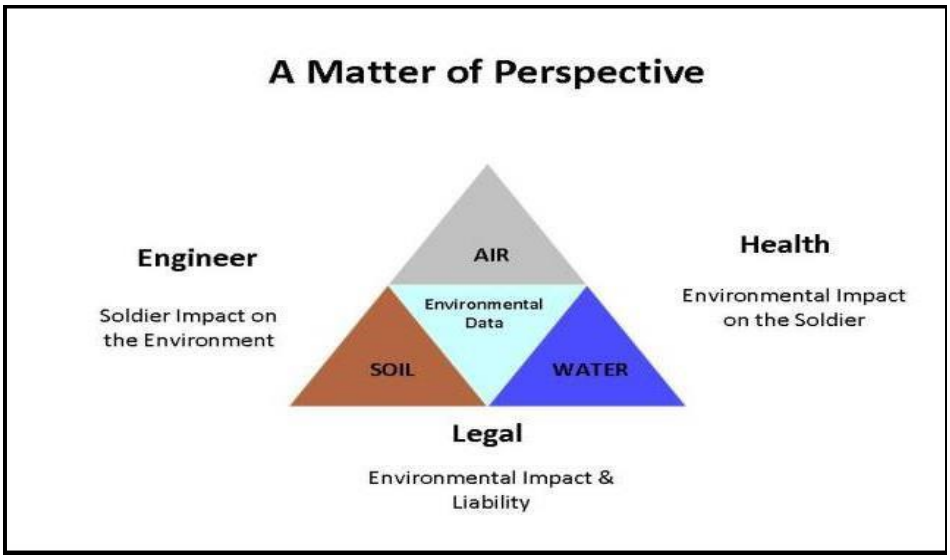

Figure 1.4: Engineer-Health-Legal Perspectives on EBS and EHSA Data[1]

6. Sampling is conducted for both an EBS and an EHSA. The major difference is how the data is interpreted (Figure F.2). Table F.2 outlines some of the specified analysis for targeted contaminants used by the EBS and EHSA.

	EBS[2]	EHSA[3]
Soil Analysis		
VOC	X	X
Polycyclic aromatic hydrocarbon (PAH)	X	X
TPH	X	X
Metals	X	X
Energetics	X	
Pesticides	X	X
Water Analysis		
VOC	X	X
Pesticides	X	X
Metals	X	X
Radioactivity	X	X
Polychlorinated biphenyl (PCB)	X	X
Air Sampling/Analysis		
Particulate matter (PM)		X
VOC		X
TPH		X

Table F.2: Comparison of EBS and EHSA Analysis Requirements

[1] Bosetti T. (2009) Joint Environmental Site Assessment in Support of Global Basing. The United States Army Medical Journal - Force Health Protection Journal April-June 2009.
[2] EBS compares analytical results to environmental quality guidelines for impacts on the environment.
[3] EHSA compares analytical results to environmental quality guidelines for impacts on human health.

F.3. REFERENCES

The following references were used in developing this Annex:

a. STANAG 2228, Allied Joint Doctrine for Medical Support (AJP-4.10);

b. STANAG 2561, Allied Joint Medical Force Health Protection Doctrine (AJMEDP-4);

c. STANAG 2535, Deployment Health Surveillance (AMedP-4.1);

d. STANAG 7141, Joint NATO Doctrine for Environmental Protection During NATO-Led Military Activities (AJEPP-4); and

e. ASTM International, ASTM D6008-96(2005), Standard Practice for Conducting Environmental Baseline Surveys.

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PART I – ACRONYMS AND ABBREVIATIONS

AJEPP	Allied Joint Environmental Protection Publication
AJP	Allied Joint Publication
AMedP	Allied Medical Publication
ASTM	American Society for Testing and Materials
CAS	Chemical Abstracts Service
CBRN	chemical, biological, radiological and nuclear
COC	chain of custody
EIA	Environmental Impact Assessment
EBS	Environmental Baseline Study
ECR	Environmental Condition Report
ECS	Environmental Closeout Study
EHSA	Environmental Health Site Assessment
EMB	Environmental Management Board
EP	Environmental Protection
EPO	Environmental Protection Officer
GW	groundwater (sample)
HAZMAT	hazardous material
HN	host nation
IUPAC	International Union of Pure and Applied Chemistry
JOA	joint operations area
MC	Military Committee
MGRS	Military Grid Reference System
MILENG	Military Engineering
OB	Open (pit) Burning
OD	Open (pit) Detonation
OPI	office of primary interest
PCB	polychlorinated biphenyl
PFAS	perfluoroalkyl substances
PFOS	perfluorooctane sulfonates
POL	petroleum, oils and lubricants

SOP	standard operating procedure
SS	surface soil (sample)
STANAG	Standardization Agreement
SW	surface water (sample)
TCN	troop-contributing nation
TPH	total petroleum hydrocarbon
USEPA	United States Environmental Protection Agency
UXO	unexploded explosive ordnance
VEC	valued ecosystem component
VOC	volatile organic compound

PART II – TERMS AND DEFINTIONS

environment
The surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelations. (NTMS – NATO Agreed)

environmental baseline study
A study of the environmental conditions in a defined area prior to the commencement of military activities. (NTMS – NATO Agreed)

environmental closeout study
A study of the environmental conditions in a defined area at the cessation of military activities. (NTMS – NATO Agreed)

environmental condition report
A report on the environmental conditions in a defined area. Note: The report may be periodic or may follow an environmental incident. (NTMS – NATO Agreed)

environmental file
A collection of environmental-protection documents that describe an area used for military activities and that can be used to support decision-making. (NTMS – NATO Agreed)

environmental impact
Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects. (NTMS – NATO Agreed)

environmental impact assessment
A study of the environmental impact of an activity or project. (NTMS – NATO Agreed)

environmental protection
The prevention or mitigation of adverse environmental impacts. (NTMS – NATO Agreed)

hazardous material
Material that may pose a risk for the population, property, safety or the environment owing to its chemical or physical properties or the reactions that it may cause. (NTMS – NATO Agreed)

joint operations area
A temporary area defined by the Supreme Allied Commander Europe, in which a designated joint commander plans and executes a specific mission at the operational level of war. A joint operations area and its defining parameters, such as time, scope of the mission and geographical area, are contingency- or mission-specific and are normally associated with combined joint task force operations. (NTMS – NATO Agreed)

AJEPP-6(C)(1)