



## USAG BAUMHOLDER

# STORMWATER POLLUTION PREVENTION PLAN (SWPPP) USAG BAUMHOLDER

January 2011

FINAL

**SUMMARY:** This SWPPP is an engineering and management strategy prepared specifically for the USAG Baumholder to reduce the pollutant load in stormwater runoff and thereby improve the quality of receiving waters.

**PROONENT:** The proponent for this document is the Directorate of Public Works (DPW), Environmental Management Office (EMO), ATTN: Mr. Kai Weber, DSN: 485-8154, [kai.weber@eur.army.mil](mailto:kai.weber@eur.army.mil).

**APPLICABILITY:** This plan applies to the entire USAG Baumholder.

**REVIEW:** The SWPPP is required to be updated annually.

**FORMS:** n/a

**SUGGESTED IMPROVEMENT:** Users of this document are encouraged to submit comments or changes to the proponent using DA Form 2028.

## APPROVALS

This Stormwater Pollution Prevention Plan (SWPPP) is an engineering and management strategy prepared specifically for the USAG Baumholder, Germany to improve the quality of the stormwater runoff and thereby improve the quality of receiving waters.

This SWPPP satisfies the requirement to develop and implement a stormwater pollution prevention plan contained in Final Governing Standards for Germany, Section 4.3.4. This SWPPP shall be updated annually.

### Approved By:

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SAM R. McADOO  
LTC, SC  
Commanding  
USAG Baumholder

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Date

## **Summary of Change**

### Stormwater Pollution Prevention Plan (SWPPP)

This document represents an update of the initial SWPPP dated January 2005. The initial SWPPP has been completely revised as of October 2010.

- The list of facilities with industrial activities has been updated. Best Management Practices at the facilities have been re-assessed based on site inspections performed in September 2010. A recommendation list of compliance actions has been compiled addressing the identified deficiencies.

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## **1 PURPOSE**

This Stormwater Pollution Prevention Plan (SWPPP) is an engineering and management strategy prepared specifically for the USAG Baumholder to reduce the pollutant load in stormwater runoff and thereby improve the quality of receiving waters. The Environmental Management Office (EMO) for the USAG Baumholder is responsible for the development and implementation of this SWPPP.

The SWPPP consists of a series of steps and activities to identify potential sources of stormwater pollutants and to implement Best Management Practices (BMP). BMPs are processes, procedures, and schedules of activities, prohibitions on practices, and other management practices that could prevent or reduce the concentration of pollutants in stormwater runoff.

## **2 REFERENCES**

References are listed in [Appendix A](#).

## **3 DEFINITIONS**

Definitions are listed in [Appendix B](#).

## **4 BACKGROUND**

This SWPPP satisfies the requirement to develop and implement a stormwater pollution prevention plan contained in Section 4.3.4.1 of the Final Governing Standards (FGS) for Germany. Each of the components of this SWPPP corresponds to Germany FGS requirements, as documented in [Table 4-1](#).

SWPPP has been prepared in accordance with standard engineering practices. The pollution prevention approach in this SWPPP focuses on three major objectives:

1. Identifying sources of pollution potentially affecting the quality of stormwater discharges from areas of the garrison associated with industrial and/or construction activities;
2. Describing practices to minimize and control the pollutant load in stormwater discharges from areas of the garrison associated with industrial and/or construction activities; and
3. Training personnel to ensure effective implementation of the SWPPP. Personnel who handle hazardous substances or perform activities that could contribute pollution to wet weather events are trained in the components and objectives of the SWPPP.

**Table 4-1 Regulatory Cross-Reference Matrix**

<b>Stormwater Pollution Prevention Plan (SWPPP)</b>			
<b>FGS Section</b>	<b>Description</b>	<b>SWPPP Section</b>	<b>Remarks</b>
C4.3.4.1	Develop and Implement SWPPP	2.0 / 3.0 / 4.0	
C4.3.4.2	Employee Training	5.0	
C4.3.4.3	Licensed Wastewater Treatment Facility	3.3	

## **5 SCOPE**

During this evaluation, industrial / construction activities at the USAG Baumholder that could potentially affect the quality of stormwater discharges from the garrison (both point sources and non-point sources) were identified. The specific pollutants associated with these activities are also identified. The industrial activities and pollutant sources at the USAG Baumholder are identified on site maps including the USAG Baumholder storm drainage system ([Appendix D](#)).

## 6 ROLES AND RESPONSIBILITIES

### 6.1 GARRISON COMMANDER

The Commander of the USAG Baumholder is responsible for all activities at the garrison, including compliance with this SWPPP. The Commander shall also be responsible for approval of annual revisions to the SWPPP.

### 6.2 SWPP MANAGER

The SWPP Manager, identified in [Table 6-1](#), is responsible for implementation of the SWPPP, preparation of annual revisions to the SWPPP, and ensuring compliance with SWPPP requirements at all tenant/unit facilities throughout the garrison. The SWPP Manager shall review plans for new construction or remodeling for erosion control, maintenance, and recommended BMPs, to determine if a revision to the SWPPP is required.

The SWPP Manager shall also coordinate for training in stormwater pollution prevention, to include the elements identified in [Section 7](#).

### 6.3 WATER PROTECTION OFFICER

The USAG Baumholder does not operate a wastewater treatment facility. The sanitary sewer systems of the USAG Baumholder facilities are connected to the municipal sanitary sewer systems and the waste water treatment facility of the city of Baumholder. Therefore, there is no need to appoint a Water Protection Officer according to German water protection requirements (WHG, §21).

**Table 6-1 SWPP Key Personnel**

Position	Unit	Name	Telephone Number	E-mail Address
USAG Baumholder Commander	-	SAM R. McADOO LTC, SC	DSN 485-1500	-
Director Public Works	-	Mr. Jerry L. Walters	DSN 485-1560	<a href="mailto:Jerry.I.Walters@us.army.mil">Jerry.I.Walters@us.army.mil</a>
EMD, Chief	USAG BHR DPW ED	Mr. Dominic Mutinda	DSN 485-6146	<a href="mailto:Dominic.Mutinda@us.army.mil">Dominic.Mutinda@us.army.mil</a>
SWPP Manager	USAG BHR DPW ED	Mr. Kai Weber	DSN 485-8154	<a href="mailto:Kai.Weber@us.army.mil">Kai.Weber@us.army.mil</a>

## 7 INDUSTRIAL ACTIVITY REVIEW

A review of the industrial activities at the USAG Baumholder is necessary to facilitate pollution prevention. During this evaluation, industrial / construction activities at the USAG Baumholder that could potentially affect the quality of stormwater discharges from the garrison (both point sources and non-point sources) were identified. The specific pollutants associated with these activities are also identified. The industrial activities and pollutant sources at the USAG Baumholder are identified on site maps including the USAG Baumholder storm drainage system (Appendix 1).

### 7.1 SITE ASSESSMENT

Activities classified as industrial in nature were identified at the following installations of the USAG Baumholder:

- Baumholder Area:
  - Smith Barracks (GE79D)
  - Quartermaster Area (GE07N)
  - Baumholder Airfield (GE07J)
  - Wetzels Kaserne (GE94D)
- Hoppstädten Water Treatment Plant (GE37L)

No industrial activities related to stormwater pollution have been identified for the Pfeffelbach Water Treatment Plant. However, a map showing the stormwater drainage system has been included in [Appendix D](#), Figure D.

The industrial activities identified include:

#### Vehicle Fueling Operations

Stormwater discharges covered in this category include runoff from areas where fueling operations occur for motor vehicles; various fixed generators, and fuel oil fired heaters. These activities include: fuel delivery to the garrison; refueler and pump cart operations; diesel and MOGAS storage; and fuel dispensing.

#### Vehicle Maintenance and Repair

Stormwater discharges covered in this category include runoff from areas where vehicle maintenance activities occur, including: fluid changes; mechanical repairs; tire and wheel maintenance; parts cleaning; sanding, refinishing, painting; washing; storage of vehicles waiting for repair or maintenance; and storage of the related materials and waste materials such as oil, fuel, batteries, tires, or oil filters.

#### Vehicle Washing

The primary discharge from washing activities is direct runoff from wash racks and other outdoor wash areas.

### Bulk Fuel Storage Areas

Stormwater discharges covered in this category include runoff from areas of bulk fuel storage, such as aboveground storage tanks (ASTs). This activity includes vehicle fuel storage; waste fuel storage; heating oil storage; boilers and generators; and mobile tankers.

### Construction Activities/Sediment Accumulation

Stormwater runoff from construction/demolition activities can be detrimental to the water quality of a receiving stream. Sediment runoff caused by the erosion of exposed soil (and entrainment of contaminants) is the primary source of water quality impacts generated during construction activities such as clearing, grubbing, grading, and landscaping.

### Hazardous Substance Storage

Stormwater discharges covered in this category include runoff from hazardous substance storage, handling, and disposition areas directly exposed to rainfall, such as outdoor storage of product drums or containers. Hazardous substances include both hazardous materials and hazardous wastes.

### Outdoor Material Storage Areas

Storage areas for new and used materials such as oil, paints, batteries, tires, and filters are included when either directly exposed to rainfall or when discharges (via building drains or spills to the ground surface) can enter the drainage system.

### Pesticide Operations

Stormwater discharges covered in this category include runoff from areas where chemical applications such as pesticide occur. Associated activities may include the preparation or storage of pesticides for application.

### Vehicle Storage Yards

Storage areas for vehicles, to include tactical vehicle parking areas, and related support equipment such as batteries, tires, and filters are included when either directly exposed to rainfall or when discharge (via building drains or spills to the ground surface) can enter the drainage system.

The typical pollutants associated with the industrial activities listed above are presented in a matrix format in [Table 7-1](#).

**Table 7-1 Typical Pollutants Associated with Industrial/Construction Activities**

ACTIVITY	POL / Associated Wastes	Solvents, Antifreeze, Deicing Chemicals	Battery Acid	Pesticides and Herbicides	Detergents and Cleaners	Oil, Latex, and CARC Paints	Sediment and Particulates
Vehicle Fueling Operations	X						
Vehicle Maintenance & Repair (M &R)	X	X	X		X	X	
Vehicle Washing	X	X			X		X
Bulk Fuel Storage Areas	X	X					
Construction Activities	X					X	X
Hazardous Substance Storage	X	X	X	X	X	X	
Outdoor Material Storage Areas	X	X	X	X	X	X	
Pesticide Operations				X			
Vehicle Storage Yards	X	X	X				

## 7.2 SUMMARY OF STORMWATER DRAINAGE

In addition to identifying industrial activities throughout the USAG Baumholder, it is important to locate these activities in relation to the storm drainage system and storm drainage points (outfalls). This will assist in selecting appropriate BMPs based on the surrounding environment.

Using available mapping of the USAG Baumholder (including the existing storm sewer system) drainage areas were delineated and associated outfalls were designated (Appendix 1).

### 7.2.1 Baumholder Area

The storm drainage system at the Baumholder Area is comprised of a series of open channels and enclosed stormwater drains. As precipitation falls, runoff is conveyed by surface flow to stormwater drainage channels, which flow to oil/water separators (OWS) with final discharge to the receiving streams (Baumholderbach and Guthausbach).

The following drainage areas have been identified:

- The storm drainage system in the western and the northern portion of the Smith Barracks discharges to the south to a rainwater retention basin (RÜB A) equipped with an OWS. Runoff is then discharged directly to the receiving stream, Baumholderbach.
- Stormwater from a smaller portion in the northwest of Smith Barracks (areas next to the wash rack at Bldg. 8357, Bldg. 8280 and the surrounding parking lot) discharges into the creek Falbersbach (no OWS installed). The wash rack at Bldg. 8357 itself discharges to the sewer drainage system.
- The storm drainage system in the southern portion of the Smith Barracks and Baumholder Family Housing, the Hospital, Quartermaster Area, Wetzel Family Housing and Wetzel Kaserne, discharges to the QM Area rainwater retention basin equipped with an OWS. Runoff is then discharged directly to the receiving stream, Baumholderbach.
- The storm drainage system in the northeastern portion of Smith Barracks discharges to the east to a series of rainwater retention basins. Runoff is then discharged directly to the receiving stream, Guthausbach.
- Runoff at the Baumholder Airfield discharges to the creek Ellenbach north of the installation.

The storm sewer system, the drainage areas and the outfalls for the Baumholder Area are noted on the maps included in [Appendix D](#). The outfalls and the drainage areas are also listed in [Appendix E](#).

### **7.2.2 Hoppstädten Water Works (GE37L)**

The Hoppstädten Water Works is located adjacent to the Nahe River in a valley between two forested hills to the north and south.

The storm drainage system at the Hoppstädten Water Works is comprised of open channels which discharge directly to the receiving stream, the Nahe River. The Nahe River flows northeast through the countryside and small towns towards the Rhein River 45 km away.

The outfall and stormwater drainage system for the Hoppstädten Water Works are noted on the maps included in Appendix 1, Figure 3. The drainage area and the outfall are also listed in [Appendix 2](#).

### **7.2.3 Pfeffelbach Water Works (GE37L)**

The Pfeffelbach Water Works is located approximately 1 km west of Pfeffelbach. Stormwater discharges in two open channels, which finally drain into the receiving stream Pfeffelbach.

The outfall and stormwater drainage system for the Pfeffelbach Water Works is noted on the maps included in Appendix 1, Figure 6. The drainage area and the outfall are also listed in [Appendix 2](#).

## **7.3 LICENSED WASTEWATER TREATMENT FACILITY**

The USAG Baumholder does not operate a wastewater treatment facility. The sanitary sewer systems of the garrison facilities discharge to the municipal sanitary sewer systems of the

associated cities. The wastewater treatment facilities operated by the associated cities are licensed in accordance with German federal and state requirements.

## 8 BEST MANAGEMENT PRACTICE ASSESSMENT PROCESS

### 8.1 BEST MANAGEMENT PRACTICES (BMP)

Potential stormwater pollution is controlled through the use of BMPs. BMPs are generally divided into three categories:

1. Baseline BMPs: Practices that are general in nature (i.e. good housekeeping),
2. Activity Specific BMPs: Practices that pertain to functions that generally occur at a garrison (i.e., fueling), and
3. Site Specific BMPs: Practices that pertain to a specific location (i.e., constructing concrete containment around an individual fuel tank).

The goal in implementing BMPs is to reduce possible pollutant discharges at the source. **Source reduction** measures include preventive maintenance, chemical substitution, spill prevention, good housekeeping, training, and proper materials management. Where such practices are not appropriate to a particular source, or do not effectively reduce the stormwater pollutant load, **source control** measures such as material segregation or covering, water diversion, and dust control may be used. The remaining class of BMPs, which involve **recycling or treatment** of stormwater, attempts to lower pollutant concentrations prior to discharge, generally through structural controls.

### 8.2 ACTIVITY AND SITE EVALUATION

A comprehensive survey is performed annually to identify (1) the sources of potential stormwater contamination; and (2) the measures taken to prevent contact of these materials with stormwater. The industrial activities, as described in Section 7.1, are inventoried throughout the garrison. The table in [Appendix I](#) summarizes the industrial activities associated with specific locations at the garrison. To assist in the survey, a series of checklists for each industrial activity is included in [Appendix G](#).

The industrial activities are also mapped to supplement the written SWPPP. The digital mapping files are maintained at the DPW Environmental Division and are regularly updated to minimize revisions required during the annual review.

### 8.3 USAG BAUMHOLDER SITE MAPS

Site maps for the USAG Baumholder, provided in [Appendix D](#), indicate where industrial activities are located throughout the garrison. These site maps illustrate the entire USAG Baumholder; indicate property boundaries, buildings, and operation or process areas; and provide information on stormwater drainage and stormwater control structures. These site maps will assist in assessing where potential stormwater pollutants are located, where they mix with stormwater, and where stormwater leaves the USAG Baumholder. All of this information is essential in identifying the best opportunities for stormwater pollution prevention or control and appropriate BMP measures.

The following Table 8-1 lists the symbols and elements that are used in the figures to illustrate the identified industrial activities.

**Table 8-1 Industrial Activities and Associated Symbol / Element in Figures**

<b>INDUSTRIAL ACTIVITY</b>	<b>Associated Symbols / Elements in Figures (Appendix D)</b>
Vehicle Fueling Operations	Gas Station Refueling Location
Vehicle Maintenance and Repair	Maintenance Shop Indoor Outdoor Vehicle Maintenance Area
Vehicle Washing	Vehicle Wash Rack Area
Bulk Fuel Storage Areas	Symbol: AST, UST
Construction Activities	Not included due to short duration of construction site
Hazardous Substance Storage	Symbol: HM location, HW location HM/HW Facility/Structure with Bldg. #
Outdoor Material Storage Areas	Outdoor Material Storage
Pesticide Operations	HM Storage Location Area: Pest Shop
Vehicle Storage Yards	Vehicle Parking Fuel Truck Parking / Fuel Rail Car

#### **8.4 PROPOSED BMP IMPLEMENTATION**

The inventory of the industrial activity areas and buildings provide the basis for the determination of which BMPs should be implemented at each area or building. By cross-referencing the association between industrial activities and pollutants (see [Table 7-1](#)) with industrial activities that occur at each area or building (see [Appendix I](#)), the types of pollutants that are likely to be found at each building or activity area can be determined.

During the comprehensive survey, existing and recommended BMPs at each building or areas are noted. Recommended BMPs may be structural in nature (requiring construction) while others are non-structural (source control). The ED reviews the recommended BMPs, discusses with appropriate personnel, and determines which BMPs shall be adopted. Non-structural BMPs may be implemented more easily, while structural BMPs require funding and a construction timetable.

BMPs should be implemented to the maximum extent practicable (MEP). Due to changing technology, MEP is an ever-changing goal. The ED will continue to review activities at the USAG Baumholder to determine what additional BMPs should be implemented at the various facilities. Additional BMP needs could result from changes in activities performed in the building or outside areas. Personnel changes may result in some of the items on the existing BMP lists to move to the implementation BMP lists if training is not performed regularly.

## 9 TRAINING

Training is essential for effective implementation of the SWPPP. Personnel who deal with activities that can cause storm water pollution are trained in the components and goals of the SWPPP. Training addresses each component of the SWPPP, including how and why BMPs are to be implemented.

At a minimum, the following is included in the training program:

1. Personnel are trained to identify and **manage potential spills** that can occur from equipment and containers of petroleum products (i.e. gas, diesel fuel, oil, lubricating grease, hydraulic fluids, etc.).
2. **Proper good housekeeping practices** which include:
  - Regular vacuuming and/or sweeping;
  - Promptly cleaning and proper disposal of spilled materials;
  - Identification of the storage location of brooms, vacuums, sorbents, foams, neutralizing agents, and other housekeeping and spill response equipment;
  - Instruction on securing drums and containers;
  - Prohibition on the disposal of any foreign material into the stormwater drainage system. Such actions are illegal and could potentially result in monetary penalties and criminal prosecution;
3. **Recognize toxic and hazardous substances** located at the garrison. Personnel are trained in:
  - Proper organization and storage of materials; and,
  - Identification of toxic and hazardous substances stored, handled, and produced on-site.
4. Responsible DPW personnel are trained in the impacts of construction activities to stormwater and the benefits of **sediment and erosion control measures** at the garrison in relation to contractor oversight. DPW personnel involved in the oversight of contractors are trained in the practices of:
  - Reducing soil erosion; and
  - Containing and treating stormwater runoff carrying eroded sediments.

To facilitate successful personnel training, problem areas should be identified and training sessions should be conducted to stimulate personnel feedback. Memoranda, bulletin board updates, suggestion boxes, and routine meetings can be used to enhance personnel training.

New personnel receive training following assignment to the garrison. Personnel training is documented and the training records shall be maintained by the responsible EOs at Company/Battalion or Activity level. A sample training form and a SWPPP training template are included in [Appendix H](#).



## **APPENDIX A –**

### **References**

**References: Section I - Required**

North Atlantic Treaty Organization, August 1959 (as amended), *Revised NATO Status of Forces Agreement (SOFA) Supplementary Agreement*, USAREUR

U.S. Army, Europe (USAREUR) and Seventh Army (Headquarters), October 2007, *Army in Europe Regulation 200-1, Environmental Quality, Army in Europe Environmental Quality Program*

U.S. Army (Headquarters) Oct 2007, *Army Regulation 200-1, Environmental Quality Environmental Protection and Enhancement*, Washington, D.C.

U.S. Department of Defense, February 2010, *Environmental Final Governing Standards, Germany*

U.S. Department of Defense (DoD), August 1997, *Defense Material Disposition Manual, DoD 4160.21-M*, Washington, D.C.

U.S. Department of Defense Overseas (DoD), 1 May 2007, *Overseas Environmental Baseline Guidance Document*.

U.S. Army Garrison, Baumholder, 2009, *Integrated Pest Management Plan 2009 - 2013*.



## **APPENDIX B –**

### **Definitions**

## **Definitions**

(Source: U.S. Department of Defense, February 2010, *Environmental Final Governing Standards, Germany*)

**Best Management Practices (BMPs)**. Practical practices and procedures that will minimize or eliminate the possibility of pollution being introduced into waters of Germany. [C4.2.4.]

**Hazardous Material**. Any material capable of posing an unreasonable risk to health, safety, or the environment if improperly handled, stored, issued, transported, labeled, or disposed of because it displays a characteristic listed in table C5.T1, "Typical Hazardous Material Characteristics." Munitions are excluded. [C5.2.10.]

**Hazardous Waste (gefährliche Abfälle)**. Wastes listed in the USEUCOM Waste List and denoted by an asterisk (\*) added to the six-digit waste code (see [https://www.us.army.mil/suite/files/\\_20917769](https://www.us.army.mil/suite/files/_20917769)). C6.2.13.

**Industrial Activities Associated With Stormwater**. Activities that during wet weather events may contribute pollutants to stormwater runoff or drainage. (See table C4.T2, "Best Management Practices (BMPs)."). [C4.2.15.]

**Pollutant**. Includes but is not limited to dredged spoil; solid waste; incinerator residue; filter backwash; sewage; garbage; sewage sludge; munitions; chemical waste; biological material; radioactive material; heat; wrecked or discarded equipment; rock; sand; cellar dirt; and industrial, municipal, and agricultural waste discharged into water. [C4.2.21.]

**Secondary Containment (Auffangvorrichtung)**. Leakproof structures, rooms in buildings (fluid retention rooms), and/or prefabricated building components (collecting vats (*Auffangwannen*)) designed to collect leaking substances from containers or piping, and leakproof drainage areas designed to channel leaking substances from containers or pipelines into collection devices (e.g., holding tanks, sumps). [C5.2.24.]

**Stormwater**. Runoff and drainage from wet weather events such as rain, snow, ice, sleet, or hail. [C4.2.28.]

**Water Hazard Class (Wassergefährdungsklasse (WGK))**. Classification of substances based on their potential for endangering water resources. (For lists of water-endangering and non-water-endangering substances, see [https://www.us.army.mil/suite/files/\\_20917769](https://www.us.army.mil/suite/files/_20917769)). [C5.2.32.]



## **APPENDIX C –**

### **List of Acronyms**

## List of Acronyms

AST	Above-ground Storage Tank
BMP	Best Management Practice
BSB	Brigade Support Battalion
CAV	Cavalry
DCA	Defense Community Agency
DoD	Department of Defense
DoDDS	Department of Defense Dependent Schools
DOL	Directorate of Logistics
DPW	Directorate of Public Works
ED	Environmental Division
EO	Environmental Officer
FGS	Final Governing Standards
FMWR	Family and Morale, Welfare and Recreation
HM	Hazardous Material
HMSA	Hazardous Material Storage Area
HW	Hazardous Waste
HWAP	Hazardous Waste Accumulation Point
IN	Infantry
IMCOM-E	Installation Management Command, Europe Region Office
IDS	Illicit Discharge Survey
JMTC	Joint Multinational Training Command
MI	Military Intelligence
MP	Military Police
MSDS	Material Safety Data Sheet
OWS	Oil Water Separator
POC	Point of Contact
POI	Point of Isolation or Recovery (at the sewer system in case of spill or slug)
POL	Petroleum, Oil, and Lubricants
RRB	Rain Retention Basin
SOP	Standard Operating Procedure
SPRP	Spill Prevention and Response Plan
SSA	Supply Service Activity
SSSC	Self Service Supply Center
SWPPP	Stormwater Pollution Prevention Plan
USACAE	U.S. Army Contracting Activity, Europe
USAG	US Army Garrison
USEUCOM	U.S. European Command
URS	URS International Inc.
UST	Underground Storage Tank
VAWs RP	Ordinance on Facilities Handling Water Endangering Substances of the State Rheinland-Pfalz (Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen und über Fachbetriebe [Anlagenverordnung])
WGK	Wassergefährdungsklasse
WWTP	Waste Water Treatment Plant

**APPENDIX D –**

**Figures**



**Appendix E –  
Stormwater Outfalls with Industrial Activities**



Appendix E – Stormwater Outfalls with Industrial Activities

Installation	Industrial Activities	Associated Building	Total Area (km <sup>2</sup> )	Receiving Stream
Baumholder NE Smith Barracks	Bulk Fuel Storage, De-icing Operations, Hazardous Substance Storage, Outdoor Material Storage Areas, Outdoor Painting/Depainting Operations, Pesticide Operations, Vehicle Fueling Operations, Vehicle Maintenance and Repair, Vehicle Storage Yards, and Vehicle Washing	See Figure 1	Approx. 1.3	Guthausbach
Baumholder NW Smith Barracks	Bulk Fuel Storage, Construction Activities, De-icing Operations, Hazardous Substance Storage, Outdoor Material Storage Areas, Outdoor Painting/Depainting Operations, Pesticide Operations, Vehicle Fueling Operations, Vehicle Maintenance and Repair, Vehicle Storage Yards, and Vehicle Washing	See Figure 1	Approx. 4.5	<p>Smith Barracks Location of outfall: south of Rod &amp; Gun Club Receiving Stream: Baumholderbach</p> <p>Smith Barracks, Wetzel Kaserne, QM Area Location of outfall: south of Rod &amp; Gun Club Receiving Stream: Baumholderbach</p> <p>Wash Rack, NW part of Smith Barracks, Bldg. 8280 + surrounding parking lot Location of outfall: southwestern corner of Smith Barracks at Falbersbachtalstraße Receiving Stream: Falbersbach</p>
Baumholder Airfield	Vehicle Maintenance and Repair, Bulk Fuel Storage, Hazardous Substance Storage	See Figure A	Approx. 0.06	Ellenbach



Appendix E – Stormwater Outfalls with Industrial Activities

Installation	Industrial Activities	Associated Building	Total Area (km <sup>2</sup> )	Receiving Stream
Hopstädten Water Works	Bulk Fuel Storage, Hazardous Substance Storage	See Figure B	Approx. 0.0056	Nahe River
Pfeffelbach Water Works	No industrial activity related to stormwater pollution identified	See Figure D	Approx. 0.0030	Pfeffelbach Stormwater collected in the northern portion of the housing area discharges into open ditch



**APPENDIX F –**

**BMP Checklists (provided on attached CD)**



**APPENDIX G –**

**Filled BMP Checklists and Inspection Forms (provided on attached CD)**



**APPENDIX H –  
SWPPP Training Form and SWPPP Training Template**





**APPENDIX I –  
Industrial Activities by Building Numbers**



Appendix I – Industrial Activities by Building Number

Industrial Activities by Building Number - Smith Barracks

Unit	DPW	40EN	DPW					DPW	AAFES	Educa- tion Center	170 IBCT		
Building	8108	8139/ 8144	8150	8153	8160 DOL	8161	8163	8218	8251A	8255	8259	near 8252	
Facility Use	POV wash rack	Motor Pool	Salt storage	Roads & Grounds workshop	Gas Station	Water Mainte- nance	Storage bldg.	U-fix-it store	Gas station	Education Center	Motor Pool	Hard- stand	
Vehicle Fueling Operations					X			currently no industrial activities	X				
Vehicle M & R		X		X							X		
Vehicle Washing	X												
Bulk Fuel Storage Areas		X			X		X			X	X	X	
Construction Activities													
Hazardous Substance Storage		X		X								X	
Outdoor Material Storage Areas			X										
Pesticide Operations													
Vehicle Storage Yards		X										X	X



Appendix I – Industrial Activities by Building Number

Industrial Activities by Building Number - Smith Barracks (continued)

Unit	24 BSB	24 BSB	24 BSB			2-18 IN		3-4 IN	5 CAV	24 BSB
Building	8260	8262	8264	8268	8278	near 8309/ 8371	8328	8330	8337	8338/ 8351
Facility Use	Motor Pool	Motor Pool (Bldg. not in use)	Motor Pool	Motor Pool	Motor Pool	Hard-stand	Motor Pool	Motor Pool	Motor Pool	Supply Support Activity
Vehicle Fueling Operations	X									
Vehicle M & R	X		X		X			X	X	
Vehicle Washing										
Bulk Fuel Storage Areas	X	X	X	X	X		X	X	X	X
Construction Activities				X						
Hazardous Substance Storage	X	X	X	X	X			X	X	X
Outdoor Material Storage Areas										
Pesticide Operations										
Vehicle Storage Yards	X	X	X		X	X	X	X		



Appendix I – Industrial Activities by Building Number

Industrial Activities by Building Number - Smith Barracks (continued)

Unit	4-70 AR	DPW	3-4 IN	3-4 IN	AAFES		DES Fire Station / DOLTMP			DOL	589 SIG	
Building	8350	8357	8366	8367/ 8368/ 8369	8401	8407	8410	8413	near 8413/ 8417	8420/ 8421	8426A	
Facility Use	HQ	Wash rack	Vehicle maintenance	Hard-stand	PX	Car care center	TMP wash rack	Fire Station vehicle washing	Hard-stand	BASOPS Maint. Center	Motor Pool	
Vehicle Fueling Operations	currently no industrial activities										X	
Vehicle M & R			X			X				X	X	
Vehicle Washing		X						X	X			
Bulk Fuel Storage Areas			X			X	X			X	X	
Construction Activities												
Hazardous Substance Storage							X				X	X
Outdoor Material Storage Areas							X					
Pesticide Operations												
Vehicle Storage Yards					X		X			X	X	X



Appendix I – Industrial Activities by Building Number

Industrial Activities by Building Number - Smith Barracks (continued)

Unit	Education Center	FMWR	4-70 AR	FMWR/ DCA		4-70 AR	FMWR/ DCA	92 MP		4-70 AR	DOL	
<b>Building</b>	<b>8428</b>	<b>8429</b>	<b>near 8437/ 8441</b>	<b>8438</b>	<b>near 8438/ 8428/ 8429</b>	<b>8439/ 8440/ 8434/ 8436</b>	<b>8443/ 8447</b>	<b>8451</b>	<b>8452</b>	<b>8456/ 8448/ 8467</b>	<b>8458</b>	
<b>Facility Use</b>	Auto Craft Shop	Vehicle maintenance	Hard-stand	Motor Pool	Hard-stand	Motor Pool	Strip lot	Motor Pool		Motor Pool	Gas station	
Vehicle Fueling Operations		currently no industrial activities							currently no industrial activities	X	X	
Vehicle M & R	X			X		X	X	X		X		
Vehicle Washing												
Bulk Fuel Storage Areas	X				X		X	X	X		X	X
Construction Activities												
Hazardous Substance Storage	X				X		X	X	X		X	
Outdoor Material Storage Areas												
Pesticide Operations												
Vehicle Storage Yards				X		X	X	X	X		X	



Appendix I – Industrial Activities by Building Number

Industrial Activities by Building Number – Smith Barracks (continued)

Unit	DES/ 502 MI	DPW	DPW	DPW	JMTC	JMTC	1-84 FA		JMTC	JMTC	JMTC
<b>Building</b>	<b>8460/ 8460A</b>	<b>8461</b>	<b>8468</b>	<b>8476</b>	<b>8484</b>	<b>near 8495</b>	<b>8530</b>	<b>8527/ 8528</b>	<b>near 8558/ 8587</b>	<b>8560/ 8570</b>	<b>8572</b>
<b>Facility Use</b>	Motor Pool	Waste Sort Center	HWSA	Soil storage	HM storage	Hard- stand	Motor Pool	Vehicle storage yard	Hard- stand	Work- shops/ wash rack	TSC Indoor Range
Vehicle Fueling Operations											
Vehicle M & R	X						X				
Vehicle Washing										X	
Bulk Fuel Storage Areas	X	X	X				X			X	X
Construction Activities											
Hazardous Substance Storage	X	X	X		X		X			X	X
Outdoor Material Storage Areas	X			X							
Pesticide Operations											
Vehicle Storage Yards	X					X		X	X		



Appendix I – Industrial Activities by Building Number

Industrial Activities by Building Number – Quartermaster Area

Unit	DOL							OIE (RWE Group)	
	8715	8718	8725	8730	8732	8733	S8769		8763
<b>Facility Use</b>	Inst. Property Book Office	HM storage	Vehicle storage yard	Fuel Rail Car Parking	Storage area	Storage area	Fuel Dis- pensing Station	Heating Plant	
Vehicle Fueling Operations					currently no industrial activities	currently no industrial activities	X		
Vehicle M & R									
Vehicle Washing									
Bulk Fuel Storage Areas	X			X				X	X
Construction Activities									
Hazardous Substance Storage		X							
Outdoor Material Storage Areas									
Pesticide Operations									
Vehicle Storage Yards			X						



Appendix I – Industrial Activities by Building Number

**Industrial Activities by Building Number – Hospital, Wetzel Kaserne, Airfield, Hoppstädten Waterworks**

Installation	Hospital	Wetzel Kaserne		Airfield	Hoppstädten
Unit	DOL	DoDDS	FMWR/ DCA	USAG DPTMS	DPW
Building	8753	8802	8858/ 8859/ 8860	8996	9876
Facility Use	Warehouse	Workshop/ Veh. Storage	Golf Course	Airfield/ UAV operations	Waterworks
Vehicle Fueling Operations	currently no industrial activities				
Vehicle M & R			X	X	
Vehicle Washing			X		
Bulk Fuel Storage Areas			X	X	X
Construction Activities					
Hazardous Substance Storage				X	X
Outdoor Material Storage Areas				X	
Pesticide Operations				X	
Vehicle Storage Yards			X		

**APPENDIX J –  
Deficiencies and Recommended Compliance Actions**



Appendix J – Deficiencies and Recommended Compliance Actions

No. report of (date):	Installation Building	Topic / Weak Point / Deficiency/ Environmental Objective/ Target* <sup>1</sup>	Action/  Environmental Programs (resources) <sup>2</sup>  technical - organizational – personnel	Realization		
				Who (name)	Suspense (timeframe)	Status
001 SWPPP Oct 2010	<i>Garrison wide</i>	SWPPP is required to be updated annually (CD).	Update SWPPP by amending/exchanging pages throughout report as required.	DPW	Dec 2011	
002 SWPPP Oct 2010	<i>Garrison wide</i>	Regular inspections of HM/HW facilities are not performed at the garrison (S).	Include inspection of HM/HW facilities as listed in this SWPPP in the regular inspection program to ensure that HM/HW handling is in accordance with FGS requirements and BMPs.	DPW		We are doing HM/HW inspections
003 SWPPP Oct 2010	<i>Garrison wide</i>	Sewer maps (including stormwater maps) are incomplete, connections to OWS structures not included (S).	Update sewer maps.	Mr. Donie (VGV BHR)	Ongoing	70 %
?004 SWPPP Oct 2010	<i>Garrison wide</i>	Damaged sewer lines have been identified during sewer inspections by the municipality of Baumholder (VBV BHR) (CD).	Replace / renovate damaged sewer lines.	Mr. Donie (VGV BHR)	Ongoing	70 %
005 SWPPP Oct 2010	<i>Garrison wide</i>	Several deficiencies were identified during OWS inspections (CD).	The following corrective actions are recommended in accordance with the OWS Database for the USAG Baumholder: <ul style="list-style-type: none"> <li>- Replace OWS</li> <li>- Renovate OWS</li> <li>- Install a coalescence filter</li> </ul>	Mr. Donie (VGV BHR)	Ongoing	70 %
006 SWPPP Oct 2010	<i>Garrison wide</i>	Waste oil USTs and antifreeze USTs were generally not labeled throughout the garrison (CD).	Label all waste oil and antifreeze USTs.	Mr. Mensch (DPW)		All tanks are labeled in the domeshaft s. URS did that some years ago. Delet that finding.



Appendix J – Deficiencies and Recommended Compliance Actions

No. report of (date):	Installation Building	Topic / Weak Point / Deficiency/ Environmental Objective/ Target* <sup>1</sup>	Action/  Environmental Programs (resources) <sup>2</sup>  technical - organizational – personnel	Realization		
				Who (name)	Suspense (timeframe)	Status
007 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8337</b> (5 CAV), <b>8451</b> (92 MP)	The hardstands are damaged. The hardstands are not connected to an OWS (S).	Short term: monitor stored vehicles and equipment for leaks regularly; use drip pans consequently to capture hydraulic oil from parked trucks and equipment. Mid term: Seal the hardstands and install an OWS.	DPW		
008 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8260</b> (24 BSB), <b>8262</b> (2-18 IN), <b>8330/ 8332</b> (3-4 IN)	The hardstands are damaged(S).	Short term: monitor stored vehicles and equipment for leaks regularly; use drip pans consequently to capture oil from parked trucks and equipment. Mid term: Seal the hardstands.	DPW		
009 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8264</b> (24 BSB)	The hardstands joints are slightly damaged (S).	Short term: monitor stored vehicles and equipment for leaks regularly; use drip pans consequently to capture hydraulic oil from parked trucks and equipment. Reassess the condition of the hardstands during the next SWPPP update. Long term: Seal the hardstand joints.	DPW		
010 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8413/ 8410</b> (DES/ DOL/ DPW/ Fire Station/ TMP), <b>8420</b> (DOL), <b>8429</b> (FMWR)	The hardstands are damaged. Only a few vehicles and equipment are parked on hardstands (S).	Short term: monitor stored vehicles and equipment for leaks regularly; use drip pans consequently to capture hydraulic oil from parked trucks and equipment. Long term: Seal the hardstands if use of the hardstand is intensified (e.g. increased maintenance or vehicle parking).	DPW		
011 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8460</b> (DES/ 502 MI), <b>8461</b> (DPW)	Hardstand northwest of 8460 is slightly damaged; hardstand northwest of 8461 is not sealed. Hardstands are currently not used	Long term: If hardstands will be used for vehicle storage in the future, seal the hardstands and install an OWS if use of the hardstand is intensified (e.g. increased	DPW		



Appendix J – Deficiencies and Recommended Compliance Actions

No. report of (date):	Installation Building	Topic / Weak Point / Deficiency/ Environmental Objective/ Target* <sup>1</sup>	Action/  Environmental Programs (resources) <sup>2</sup>  technical - organizational – personnel	Realization		
				Who (name)	Suspense (timeframe)	Status
		as vehicle storage yard (S).	maintenance or vehicle parking)			
012 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8108 (BSB)</b>	The concrete joints of the wash rack are damaged allowing wash water to infiltrate into the ground (S).	DPW has a funded project to repair the joints/concrete. The repair will be executed in spring 2011.	DPW		
013 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8108 (BSB)</b>	No SOPs are posted at the washrack and no sign that prohibits the use of detergents.	Post SOPs including the handling of detergents at the washrack.	DPW		
014 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8163 (DPW)</b>	The heating oil AST at Bldg. 8163 is not labeled (CD).	It is recommended to label the heating oil AST.	Hr. Mensch (DPW)		
015 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8251A</b> (AAFES)	Used car batteries are regularly placed next to the dumpsters at the AAFES gas station.	Post a sign prohibiting the disposal of batteries including a note that batteries can be disposed of at Bldg. 8461 (DPW Waste Sort Center).	EO 8251		
016 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8338-8351</b> (24 BSB)	The area in front of the HM conex is in very poor condition. Several 5 gal drums of hydraulic oil were stored in front of the HM conex during the site visit (CD).	It is recommended to move the HM conex to a sealed asphalt or concrete hardstand, e.g. the roofed area (Bldg. 8365) southwest of the HM storage area. Store all HM inside the HM conex.	EO 8338-8351		
017 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8401 (AAFES)</b>	Two approx. 1,000 L plastic ASTs containing a glycol-water mixture are located at the air conditioning unit northwest of Bldg. 8401. The ASTs are located next to a ditch without secondary containment (CD).	According to the German Water Hazard Classification, glycol is classified as slightly hazardous (WGK I). It is recommended to determine the Water Hazard Class of the glycol-water mixture. For a Water Hazard Class $\geq$ WGK I, a secondary containment should be provided for the plastic ASTs.	Hr. Mensch (DPW)		
018 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8401 (AAFES)</b>	The two plastic ASTs at the air conditioning unit are not listed in the Tank Database (S).	Include the ASTs in the Tank Database for the USAG Baumholder.	Hr. Mensch (DPW)		



Appendix J – Deficiencies and Recommended Compliance Actions

No. report of (date):	Installation Building	Topic / Weak Point / Deficiency/ Environmental Objective/ Target* <sup>1</sup>	Action/  Environmental Programs (resources) <sup>2</sup>  technical - organizational – personnel	Realization		
				Who (name)	Suspense (timeframe)	Status
020 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8447</b> (FMWR/ DCA)	Vehicles to be drained are only partially stored on hardstand connected to an OWS. Oil stains were noted under drained vehicles stored on gravel hardstand (S).	Monitor stored vehicles for leaks on a daily basis; use drip pans consequently to capture hydraulic oil from vehicles.	EO 8447		
021 SWPPP Oct 2010	<i>Smith Barracks</i> <b>8458</b> (DOL)	The fueling area at the DOL gas station is not covered, allowing stormwater to enter the secondary containment structure and discharge through the OWS (S).	Consider roofing (a canopy) for the DOL gas station to limit stormwater run-on to the filling area.	DPW		Although it is no legal requirement, the USAG / DOL has requested the installation of a canopy at DESC in 2010.
022 SWPPP Oct 2010	<i>QM Area</i> <b>8725</b> (DOL)	Oil stains were noted under stored POVs at Bldg. 8725 (S).	Monitor stored vehicles for leaks regularly; use drip pans consequently to capture hydraulic oil from vehicles.	EO 8725		
023 SWPPP Oct 2010	<i>Golf Course</i> <b>8859</b> (FMWR/ DCA)	The wash rack is currently used to mix liquid fungicides (stormwater drain is covered during mixing).	A contained fungicide mixing station is planned at storage area 8859 (estimated completion date: end of 2010).	DPW	End of 2010	
024 SWPPP Oct 2010	<i>Airfield</i> <b>8996</b> (USAG DPTMX)	Spill pallet placed under UAVs during fueling are not protected from rainfall.	Cover spill pallet to prevent potential spills from entering the stormwater system during rainfall.	EO 8996		



## Appendix J – Deficiencies and Recommended Compliance Actions

\*1 Categorize the finding whether it is a critical deviation (**CD**), a non-critical deviation (**ND**) or a suggestion (**S**).

**Status:** Indicate an environmental target with a (**T**) in parenthesis, EPAS Finding (**E**)

\*2 **Environmental Program(s):**

- 1) Indicate the environmental program with a (**P**).
- 2) Integrate the costs to each program in parenthesis.

RA = Review Audit

Planning (10%)	Completed (90%)
Funding Process (30%)	Checked (100%)
Project ongoing (70%)	