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13. ABSTRACT (Maximum 200 words)

Because of the growing number of environmental laws and regulations worldwide, the U.S. Air Force has adopted an environmental compliance program that includes a mechanism to identify compliance problems before they become notices of violation by the U.S. Environmental Protection Agency or create non-compliance issues in host countries.

In 1984, the U.S. Army Construction Engineering Research Laboratory, in cooperation with the Air Force Engineering and Services Center, began work on the Environmental Compliance Assessment and Management Program (ECAMP). The concept was to combine Federal, Department of Defense, and Air Force environmental regulations, along with good management practices and risk management issues, into a series of checklists showing not only the legal requirements, but also what specific items or operations to review. In addition, each question or protocol would list a point of contact to help assessors review the protocols as easily as possible.

ECAMP was extended worldwide to incorporate environmental legislation in host countries. The German ECAMP manual was developed using translations of existing legislation from the Federal Republic of Germany. It was tested at Hahn Air Base in 1990. The manual was printed and distributed to environmental coordinators at U.S. Air Force installations in the Federal Republic of Germany.

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INTRODUCTION

The Federal Republic or its states do not have a comprehensive or general environmental code to cover all areas of environmental concern. Rather, the legislative technique treats environmental problems most often in the context of a certain subject of law. This means that particular laws relate generally to subjects and not to problems. Older laws seldom have a purely environmental dimension, but provide only singular rules concerning the environment, while new laws, particularly the Federal Emission Control Law, may have environmental protection as the controlling feature.

It should be noted that German law has a clear separation between private (civil) law and public (administrative) law. Environmental law is predominantly administrative law. Actions in private law, however, may be successful notwithstanding the legality of a certain facility under administrative law, although the extent of affected private rights is determined in various cases by the valid licensing under administrative law.

Environmental law originates mainly from statutory law. Customary law based on established rights developed by longstanding use, and general acceptance by the people involved, is relatively unimportant.

The most important sources of environmental legislation are the laws passed by formal federal and state parliamentary procedures. It is fair to state that the federal government has assumed a dominant position in the area of environmental law (just as in other areas of law) with the state governments left to regulate administrative, procedural, and other matters of lesser importance. The federal and state governments and individual ministers issue ordinances (Rechtsverordnungen) to supplement the formal laws. Before such ordinances can be issued, authorization by law is required specifying formally and legally the content, purpose, and extent of the authorization.

Administrative decrees and regulations issued by authorities for internal use, in particular for instructing subordinate departments, are important in general administration.

Also important for environmental protection are by-laws or statutes established by public bodies such as towns and counties for their own legislative purposes. Examples for such by-laws concern zoning, waste disposal, and drainage.

A peculiarity of German environmental law is that the laws themselves rarely give directly applicable standards of conduct, but are limited to abstract verbal descriptions of the desired level of health and environmental protection, or give standards in such a general way that further determination is necessary. The implementation of environmental law, however, requires technical and scientific standards that specifically lay out what limitations are imposed on the individual and what amount of pollution is permissible. The nature of the actual standards vary.

Generally, the law itself authorizes the executive branch to enact ordinances that determine specific quantities. Very often, the ordinances enacted cover only a portion of what is actually needed. In other instances, no ordinance is enacted at all. Thus law and ordinances combined may only describe the standard to be complied with as "not harmful to the environment" or "in accordance with the state of technology", or "in accordance with the state of science and technology." The purpose of this legislative technique of general wording is to let environmental protection keep pace with scientific and technological progress.

A number of administrative regulations specify actual standards which cover all aspects and all possible facilities and situations. In these remaining cases the standards will be determined by the authorities on a case-by-case basis with the help of elaborate scientific and technical opinions of professional organizations of engineers on the quantities and standards currently achievable and desirable, or solely on the results of an on-the-case study. While these opinions cannot be legally enforced, they are extremely important.

APPENDIX A

ACRONYM LIST FOR GERMAN MANUAL

AOV	(5-8)
AbfBefV	Abfall Befoerderungs Verordnung
AbfG	Abfallgesetz
AbfKlaerV	Abfall Klaerschlammverordnung
AbwAG	Abwasserabgabengesetz
AltoelV	Altoel Verordnung
ArbStaettV	german law
BAT	Basic Air Temperature
BArtSchV	Bundesartenschutzverordnung
BImSchG	Bundesemissionsschutzgesetz
BNatSchG	Bundesnaturschutzgesetz
BOD	Biological Oxygen Demand
BVA	german law
Btu	British Thermal Units
CFC	Chlorinated Fluorocarbons
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
ChemGAstoffV	german law
ChemGGef-MmV	german law
ChemGPruefnwV	german law
ChemG	Chemialiengesetz
DDT	Dichlorodiphenyltrichloroethane
DEH	Director of Engineering and Housing
DIN	Deutsche Industrie Norm
DMG	german law
EEC	European Economic Community
EIAP	Environmental Impact Analysis Process
EL	(1-17 -- fuel oil)
EN	Environmental
FRG	Federal Republic of Germany
FT	Fish Toxicity
GBefGG	german law
GOzonschicht	german law
GG	german law
GGVS	Gefahrgutverordnung Strasse
GMP	Good Management Practice
GVBl	german law
GVOBl	german law
GefMerKm V	Gefaerlichkeitsmerkmale Verordnung
GefStoffV	Gefahrstoffverordnung
HAbfG	Hessisches Abfallgesetz
HM	Heavy Metals
HQ	Headquarters
KWS	Katalog Wassergefaehrdender Stoffe
LAF	A-Weighted Sound Level for Fast Setting
LAI	A-Weighted Sound Level for Impulse Setting
LAT	A-Weighted Sound Level for Periodic

	Measurement Method
LAbfG	Landesabfallgesetz
LWG	Landeswassergesetz
Lr	Rating Level
MAK	Maximale Arbeitsplatzkonzentration
MJ	Megajoules
MW	Megawatt
NMP	Noise Management Plan
NO	Nitrogen Oxides
PCB	Polychlorinated Buphenyls
PCP	Polychlorinated Polyphenyls (CHECK - 1-11)
PCT	Polychlorinated Terphenyl
POC	Point of Contact
POL	Petroleum, Oil, & Lubricants
POX	Purgeable Organic Halogen Compounds
PflSchG	Pflanzenschutzgesetz
Psi	Pounds Per Square Inch
SO_2	Sulfur Dioxide
STÖV	german law
SprengG	german law
TA Laerm	(5-1)
TA Luft	Technische Anleitung zur Reinhaltung der Luft
TB	(5-4 -- reference duration)
TM	Tone Modulation
TRGS	Technische Regeln Gefahrstoffegerman law
TRK	Technische Richtkonzentration
TRbF	Technische Richtlinien Brennbare Fluessigkeitengerman law
TRgA	(9-1 -- german asbestos law)
TUEV	Technischen Ueberwachungsvereine
USACERL	United States Army Construction Engineering Research Laboratory
USAFE	United States Air Force Europe
USAREUR	United States Army Europe
UVV	german law
VAwSF	Verordnung ueber Anlagen zum Lagern, Abfuellen und Umschlagen wasser-gefaehrdender Stoffe und die Zulassung von Fachbetrieben
VBG	german law
VDI	Verband Deutschen Ingenieure
VHC	Volatile Halogenetic Compounds
VC	(1-5)
VbF	Verordnung ueber Brennbare Fluessigkeiten
VwV	german law --- citation
WGK	german law
WHG	Wasserhaushaltsgesetz
WRMG	german law
ZH	(9-3) Publication number/system
μS	Microsiemens
μg	Microgramm

µl	Microliter
cal	Kalorie
cm	Zentimeter
dB	Decibels
ft	Foot
g	Gramm
hPa	something to do with pressure (1-2)
ha	Hectare
in	Inch
kJ	Kilojoule
kN	Kilonewtons
kcal	Kilokalorie
kg	Kilogramm
km	Kilometer
l	Liter
lb	Pound
m	Meter
mg	Milligramm
mi	Mile
mm	Millimeter
oz	Ounce
ppb	Part Per Billion
ppm	Part Per Million
sm	Square Mile
t	Tonne
yd	Yard

Foreword

This work was completed for HQ United States Air Force, Director of Engineering and Services, Environmental Division, and for HQ United States Army, Europe, and Seventh Army, Facilities Engineering Division. The Air Force Technical Monitor was Major Roy Salomon and the Army Technical Monitor was Mr. Phil Huber.

The work was performed by the Environmental Division (EN) of the U.S. Army Construction Engineering Research Laboratory (USACERL). Dr. R.K. Jain is Chief of EN and Dr. Diane K. Mann was the Principal Investigator.

Colonel Everett R. Thomas is Commander and Director of USACERL and Dr. L.R. Shaffer is Technical Monitor.

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Section I

Air Emissions

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Air Emissions

A. Federal Regulation

The Association of German Engineers (Verband Deutschen Ingenieure, (VDI)) has established a Clean Air Commission and a Noise Reduction Commission which produce up-to-date guidelines for measuring techniques, and methods to determine individual harmful components and limiting values for individual components in emissions. Over 200 guidelines have been published.

The German Industrial Standards [Deutsche Industrie Norm, (DIN)] have a similar function. They have been developed to standardize industrial products by the German Institute for Standards. Among the other bodies of importance in this area are the Technical Supervisory Associations [Technischen Ueberwachungsvereine (TUEV)], among the primary duties of which are the monitoring and auditing of technical installations.

The law for the Protection from Harmful Effects from Air Pollution, Noise, Vibrations, and Similar Processes (The Federal Emission Control Law, "Bundesemissionsschutzgesetz", abbreviated BImSchG) is an important environmental legislation, as mentioned previously. Within the authorization by the BImSchG, the Federal Government has issued a number of ordinances (Verordnung zur Durchfuehrung des BImSchG - Ordinances to Implement the Federal Emission Control Law). The Federal Government has issued further administrative regulations to help enforce the BImSchG. Among them, the Technical Instruction for Air Purification (Technische Anleitung zur Reinhaltung der Luft frequently referred to as TA Luft), enacted on the basis of section 48 BImSchG, is a particularly relevant technical guide in which permissible maximum values for emissions and emissions are defined. These standards are not laid out for all, but only the more important harmful substances.

As a general administrative instruction used by administrative authorities to enforce the BImSchG, the TA Luft is not binding on other authorities, for instance courts, that must insure that the law is correctly applied. Today, however, it is assumed that the operator constructing and running an installation is complying with his legal obligations under the BImSchG to prevent harmful environmental effects if he observes the emission values in the TA Luft.

B. State Legislation

Because the Federal government has made comprehensive use of its constitutional powers in the area of pollution control by enacting the BImSchG, relatively little leeway is left for the states to regulate in this area. Areas of state legislation are concerned with harmful environmental effects caused directly by human behavior and not connected with the construction or operation of an installation. In addition, the states have power to regulate administrative structures and procedures in the area of air pollution control unless predetermined by the BImSchG. Furthermore, the BImSchG contains numerous provisions explicitly allowing state regulations, for example, determining certain areas in need of special protection from air pollution or with special restrictions in case of smog. Another example is the authorization to issue ordinances on standards for non-licensed installations in case the Federal government has not issued an ordinance.

The states and their subdivisions are responsible for enforcing the law. That means there is only one level at which air pollution control law is administrated. On the other hand, states cannot enact rules in areas already covered by federal rules. This means there is only one set of standards with which to comply; state and federal rules cannot make different demands.

C. Key Compliance Definitions

- Air Pollution -refers to changes in the material composition of the air from smoke, soot, dust, gas aerosols, steam, or odorous substances.

- Dry Cleaning Facilities -are those that engage in cleaning, degreasing, fitting out, drying, or similarly treating goods, particularly textiles, leather, furs, fibers or wool.

- Emissions -are what is directly discharged by an installation -- air pollution, noise, vibration, light, heat, radiation, and similar phenomena. All concentrations relate to the exhaust gas volume under standard conditions (273 K 1013 hPa) after subtracting the humidity of water vapor.

- Emission Degree -is the proportion, in percent, of the emitted mass of a pollutant in the exhaust gas to the total mass thereof that was contained in the fuel.
- Exhaust Gas Loss -is the difference between the heat content of the exhaust gas and the furnace air related to heating value of the fuel.

- Facilities -are industrial premises and other stationary facilities; machines, equipment and other movable technical facilities and also vehicles (though not motor

vehicles and their trailers and rail, air or water vehicles); and premises on which materials are stored or seasoned or where work is carried out which could cause emissions (excluding public thoroughfares).

- Furnace -refers to the burning of fuels to produce heat for an installation.

- Harmful Environmental Effects -are emissions that by reason of their nature, extent and duration are capable of causing dangers, significant disadvantages, or significant nuisances for the general public or the neighborhood.

- Heating Capacity -is the heat content related to the lower heating value, of the fuel that can be charged, per time unit in a furnace under continuous operation.

- Emissions -are the effects on people, animals, plants, and other objects of air pollution, noise, vibration, light, heat, radiation, and similar phenomena.

- Rated Heat Output -is the highest utilizably delivered quantity of heat per time unit that can be produced by the furnace under continuous operation.

- State of Technology -is determined by the tested use of advanced techniques and improved equipment and operating methods.

- Surface Treatment Facilities -are those that engage in treating surfaces of objects or materials, particularly in cleaning, greasing, degreasing, coating, removing of coating, developing, phosphating, drying, or similarly treated objects or materials from metal, glass, ceramics or plastics.

- Waste Gases -are carrier gases containing solid, liquid and gaseous emissions.

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-1. Determine actions or changes since previous review of air emissions.	Read copy of previous air emissions review to determine if issues of non-compliance have been resolved. (3)
...	...
1-2. Copies of the appropriate regulations should be maintained.	Check that the staff is familiar and knowledgeable of the ordinances, regulations, and handbooks pertinent to duties are easily accessible. (1) (3) 1st Ordinance: on Small Furnaces. 1. BImSchV 2nd Ordinance: for Limitation of Highly Volatile Halogenous Hydrocarbons. 2. BImSchV 3rd Ordinance: on the Sulfur Content of Light Fuel Oil and Diesel Oil. 3. BImSchV 4th Ordinance: on License-requiring Installations. 4. BImSchV 10th Ordinance: for Restrictions Regarding PCB, PCT, and VC. 10. BImSchV Technical Instruction for maintaining clear air. T A Luft
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS**
1-3. Commanders will ensure that air emission complaints are well managed.	Check all air emission complaints are addressed and corrective measures taken whenever possible. (1) (3) (5)
...	...
1-4. HQ should provide support for air emission programs.	Verify policy is being provided. (1) Determine whether resources are being provided. (2) Check that support such as technical consultation and policy backup are being provided. (1) (3)
...	...
1-5. Certain fuels are permissible for use in small furnaces (rated heat output less than 1 MW) (1 BImSchV Verordinung uebes Kleinfenesungs-ambuger)	Check that fuels used at the community are coal, fuel oil, or on the list of permissible fuels in APPENDIX I-1 at the end of this section.
...	...
1-6. Small furnaces (rated heat output under 1 MW) installed prior to July 1988 are subject to Carbon Monoxide (CO) standards (1 BImSchV).	Check that old small furnaces (rated heat output greater than 15 kW but under 1 MW) that do not use coal or fuel oil, but which use fuels 4-8 (See APPENDIX I-1) have their CO concentration measured by a certified district chimney sweeper prior to July 1991. Verify that old small furnaces (rated heat output greater than 15 kW) that do not use coal or fuel oil, but use other fuels in APPENDIX I-1 meet the standards for CO in APPENDIX I-2.
...	...
1-7. Small furnaces (rated heat output under 1MW) in use prior to 15 July 1988 must meet certain emission standards (1. BImSchV). (NOTE: This is the standard for a grace period until July 1993. After July 1993, the stricter standards for newer furnaces (installed after 15 July 1988) will apply.) (See APPENDICES I-3 and I-4)	Verify that mechanically fired existing small furnaces which use fuels 1-3 (See APPENDIX I-1) are below the emission standard of 0.3g/m3 cbm for particulates based on a volume of 8% oxygen in the exhaust. (1) (3) Verify that existing small furnaces mechanically fired which use fuels fuels 4-8 or hand fired which use fuels 5-7 are below the emission standard of 0.2 g/m3 for particulates based on a volume of 13% oxygen in the exhaust. (1) (3) After the grace period has expired, verify that the particulate emissions do not exceed 0.15 g/m3 based on a volume control of 8% oxygen in the exhaust gas.

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
...	...
1-8. Certain small furnaces (rated heat output 15 kW to 1 MW) put into operation after 15 July 1988 are subject to certain Carbon Monoxide (CO) standards (1. BImSchV).	If newer small furnaces are not burning coal or fuel oil, Check to see whether they are meeting the standards of APPENDIX I-2.
...	...
1-9. Small furnaces (rated heat output) using **SOLID** fuels are subject to certain requirements (1 BImSchV).	Check that during normal operation the smoke trail is lighter than gray level one on the Ringelmann-Scale*. (3) * **Ringelmann-Scale:** In four of six squares, the others being white and black, the Ringelmann-Scale contains gray levels between white and black; the share of black coloration is: - 20% in gray level one; - 40% in gray level two; - 60% in gray level three; - 80% in gray level four. Verify furnaces are operated in the manner directed by the manufacturer. If open fireplaces are used, confirm their use is only occasionally and only with solid untreated wood.
...	...
1-10. Small furnaces (rated heat output under 1MW) (installed prior to 15 July 1988) must use **SOLID** fuels meeting certain requirements after July 1991. (1 BImSchV).	Verify that existing furnaces from before 15 July 1988 do not use brown coal briquettes or pitch - free stone briquettes with sulfur content greater than 1% after July 1991. Stone coal with a higher sulfur content may be used if emissions are treated. (1) (3)
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-11. Unlicensed small furnaces installed after 15 July 1988 (rated heat output under 1 MW) that use **SOLID** fuels to heat homes/small building should meet certain requirements (BImSch).	Compare operation of unit and manufacturer's direction to ascertain that the furnace is being used correctly. (3) Check that furnaces with a rated heat output of over 15 kW operating with fuels 1 - 3 (See APPENDIX I-1) do not have particulate emissions in exhaust gas that exceed a mass concentration of .15g/m3 related to a volume content of 8% oxygen in exhaust gas. Check that furnaces with a rated heat output of over 15 kW operating with fuel 4 of list above do not have mass concentrations of particulate emissions exceeding .15 g/m3 and/or CO exceeding 2 g/m3 to a volume content of 13% oxygen in their exhaust gas. If an open fireplace is used, confirm that the use is only occasional and only with solid, untreated wood. Check chimney sweep operation order. Verify that records show chimneys are swept at least once a year. (3)
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-12. Unlicensed small furnaces (rated heat output under 1MW) that use **OIL** and **GAS** to heat homes/small buildings should meet certain requirements (1 BImSchV):	Check that furnaces installed or significantly modified after July 15, 1988 are equipped to limit the emission of NO_x. (2) Check that oil furnaces with evaporation burners are built and operated so that: (1)(3) - the blackening degree by particulate emissions does not exceed soot shade 2 on the Ringelmann Scale (as shown above); - the exhaust gases are free from oil derivatives; - the threshold value of exhaust gas losses are maintained as shown in APPENDIX I-3. Oil and gas furnaces that cannot stay within the threshold value for exhaust gas losses due to their designated function are to be built and operated in a way that complies with the state of technology of the respective process.
...	...
1-13. Small furnaces (rated heat output under 1 MW) in use prior to 31 December 1982 using **GAS** or **OIL** must meet certain standards for exhaust losses (1 BImSchV).	Check older furnaces to confirm that exhaust losses do not exceed the values as shown in APPENDIX I-4.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY **REQUIREMENTS**	**REVIEWER CHECKS**
1-14. Medium sized furnaces (rated heat output 1-50 MW) using coal, coke, coal briquette, peat, wood, wood residues not treated by "Holzschutzmittel" (wood preservations), or covered with plastic material must meet certain requirements. (T A Luft).	Verify particulate emissions* do not exceed: - 150 mg/m3 in furnaces with a rated heat output between 1-5 MW; - 50 mg/m3 in furnaces with a rated heat output greater than 5 MW. (Standards have to be maintained while cleaning heating surface.) Check CO emissions do not exceed 0.25g/m3 for furnaces with rated heat output under 2.5 MW . (This standard applies only to operation under full load.) If peat, wood, or wood residue are used, verify the emissions of organic substances, expressed as total carbon, do not exceed 50 mg/m3. Check that NO_x emissions meet the following standards: - furnaces with "stationere Wirbelschichtfeuerung" and a heating capacity of over 20 MW, or with "Wirbelschichtfeuerung mit zirkulierender Wirbelschicht: 0.30 g/m3; - furnaces with other firings: 0.50 g/m3. (Possibilities of further reducing emissions through pyrotechnical means are to be exhausted.) Check that SO_x emissions meet the following standards: - furnaces with "Wirbelfeuerung": 0.40 g/m3 (if the standard cannot be met with reasonable effort, a sulfur emission degree of 25 percent may not be exceeded); - furnaces with other firings using coal: 2.0 g/m3 (possibilities to further reduce emissions are to be exhausted; by adding basic absorbents to the fuel or into the firing, the sulfur emissions can be lowered by 50 percent). No special requirements exist for halogen compounds. * Emissions relate to volume content of oxygen in exhaust gas of 7% for coal or 11% for peat, wood, or wood residue.
...	...
1-15. Unlicensed medium-sized furnaces (rated heat output of 1-50 MW) must meet certain exhaust requirements (TA Luft).	Check that the exhaust gas discharge point is situated: - at least 3 m above the highest point of the ridge; and - at least 10 m above ground. These requirements are not exclusive; stricter ones may be imposed to meet the general requirements of the BImSchG.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-16. Medium-sized furnaces using fuel **OIL** of first refining or **CRUDE OILS** with a heating capacity of 1-50 MW must meet certain standards (TA Luft).	Check particulate emissions* meet the following standards: - furnaces between 1-5 MW rated heat output should not exceed 80 mg/m3; - furnaces over 5 MW should not exceed 50 mg/m3; - furnaces using fuel oils with a mass content of sulfur greater than one (1) percent should not exceed 50 mg/m3. According to DIN 51603 part 1: the blackening degree as determined by the methods in enclosure 2 of 1.BImSchV may not exceed soot shade 1. If possible, check soot shade. Check exhaust gas is free of oil derivatives to such an extent that the filter paper used for measuring soot shows no visible signs of oil derivatives. (NOTE: Rules limiting emissions of certain particulate inorganic substances do not apply if low ash fuel oils are used provided that the standards of 80 or 50 mg/m3 are met without a dust-arrester.) Confirm CO emissions* do not exceed 0.17 g/m3. Check that NO_x emissions* do not exceed 0.25 g/m3 if fuel oils are used according to DIN 51603 part 1: - if other fuel oils are used, NO_x emissions should not exceed 0.45 g/m3. Verify that SO_x emissions* do not normally exceed 1.7 g/m3. Efforts should be made to further reduce emissions by using low-sulfur fuel oils. * Emissions relate to a 3% volume content of oxygen in the exhaust gas.
...	...
1-17. Medium-sized furnaces with a heating capacity of less than 50 MW using other liquid flammable substances must meet the same standards above for free oil with an added provision for hydrocarbons (TA Luft).	Check all standards listed above in number 16. Verify that the mass content of polychlorinated aromatic hydrocarbons such as PCBs or PCPs is not more than 10 mg/kg and the lower heating value of the flammable substance is at least 30 MJ/kg.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-18. Medium-sized furnaces using GAS fuels with a heating capacity up to 5 MW must meet certain standards (TA Luft).	Verify particulate emissions* : - do not exceed 10 mg/m3 if blast furnace gas is used; - do not exceed 50 mg/m3 if industrial gases of steel production are used; - do not exceed 5 mg/m3 if other gases are used. Check CO emissions* do not exceed 0.10 mg/m3. Check that NO_x emissions* do not exceed 0.20 mg/m3. Verify that SO_x emissions*: - do not exceed 0.10 g/m3 if coke-oven gas or refinery gas is used; - do not exceed 5 mg/m3 if liquid petroleum gas is used; - do not exceed 1.7 g/m3 if crude oil is used as fuel for tertiary activities of crude oil production; - do not exceed 35 mg/m3 if other gases are used. * Emissions relate to a volume content of oxygen in exhaust of 3%.
...	...
1-19. Dry cleaning facilities and surface treatment plants can use only certain volatile halogenated hydrocarbons (2 BImSchV).	(NOTE: The following is not applicable if solvents with a mass content of volatile halogenated hydrocarbons of up to 1% are applied or if surface treatment plants with a filling volume of up to 10 liter are employed without heating and no waste gases are removed by suction.) Verify that only the following permissible substances are used: - tetrachloroethylene; - trichloroethene; - 1,1,1-trichloroethene; - dichloroethane; - 1,1,2,2-tetrachloro-1,2-difluoroethane (R-112); - 1,1,2-trichloro-1,2,2-trifluoroethane (R-113); - trichlorofluoroethane (R-11).
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-20. Surface treatment plants without devices to remove waste gases by suction must meet emission standards for VHCs (2 BImSchV).	Verify following standards for losses of VHCs are met: - 0.5 kg/h for plants with a VHC capacity of 500 kg; - 0.1% of capacity per hour for plants with a VHC capacity of over 500 kg and up to 1500 kg; - 1.5 kg/hr for plants with a VHC capacity over 1500 kg. Check if efforts are made to further reduce the escape of VHCs into the room by casing pipes or by condensation separation. Verify that before treated goods are loaded the losses of VHCs per hour per square meter of evaporation surface does not exceed 0.2 kg. (NOTE: if solvent contains VHCs consisting of more than 50% R-113 or R-11, the losses should not exceed twice the amount of the values given above.)
...	...
1-21. Surface treatment plants with devices to remove waste gases by suction must meet emission standards if the mass flow of VHCs in the waste gas is 0.3 kg/hr or higher (2 BImSchV). (NOTE: for plants <0.3 kg/hr the standards under number 21 apply.)	Verify the following standards for VHCs emissions are met: - 200 mg/m3 for a waste gas volume up to 500 m3/hr; - 100 mg/m3 for a waste gas volume of more than 500 m3/hr - if the solvent contains VHCs with more than 50% dichloromethane or fluorochlorohydrocarbons the standard is 150 mg/m3. (NOTE: the standards are based on the conditions of 273K and 1013 mbar.) Verify that before treated goods are loaded the losses of VHCs per hour per square meter of evaporation surface do not exceed 0.2 kg. Check to see if the usage of VHCs into the room is reduced by casing of pipes and/or condensation separation. (NOTE: if solvent containing VHCs of more than 50% R-113 or R-11 are used the losses should not exceed twice the amount of the values given above.)
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS**
1-22. Dry cleaning plants not using suction for removal of waste gases must meet certain standards (2 BImSchV).	Check if standard for mass concentration of VHCs after drying process is met: - 15 g VHCs/m3 while entering the drum area; - 25 g VHCs/m3 inside the drum area; - temperature of treated goods must be at least 303K (30 degrees C). (NOTE: for plants built before April 27, 1986, the standards are 28 g/m3 and 42 g/m3.) If a solvent contains VHCs consisting of more than 50% R-113 or R-11, the relevant mass concentrations are 300 g VHCs/m3 while entering the drum and 500 g VHCs/m3 inside the drum and the relevant temperature is 293K (20 degrees C).
...	...
1-23. Dry cleaning plants using suction to remove waste gases must meet emissions standards (2 BImSchV).	Check if plants are equipped with a separator which reduces the mass concentrations of VHCs: - 200 mg VHCs/m3 for plants with a loading capacity up to 30 kg; - 100 mg VHCs/m3 for plants with a loading capacity over 30 kg. (NOTE: if the solvent contains more than 50% of chlorofluorohydrocarbons the standard is 150 mg/m3.)
...	...
1-24. General requirements for dry cleaning plants and surface treatment facilities must be followed (2 BImSchV).	Verify that trichloroethene (trichlorethylene (TCE)) is not used in dry cleaning facilities. Verify that the operator maintains records on the following for a period of three years: - the amount of volatile halogenated hydrocarbons (VHCs) used in the plant; - recycling and disposal of VHCs and VHC-containing substances (eg filter); - plant operation hours. Check if the local authorities impose different or stricter standards and whether they are being met.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-25. Paint spray facilities are subject to emission standards if 250 kg paint/hr or more is used (TA Luft). If less than 250 kg of paint is used in an hour, emissions should be limited according to the state of art of technology. ... RHEINLAND-PFALZ	Check if the following standards are met: - solvent-free paint or paint with a low content is used whenever possible; - an air circulation system is used if possible; - exhaust filters are used if possible; - emission of exhaust does not exceed 50 mg total carbon/m3; - emission of paint particulates in the exhaust gas does not exceed 3 mg/m3. (NOTE: Paint spraying plants built prior to April 1986 must meet above standards by 1 March 1991.) ...

COMPLIANCE CATEGORY: AIR EMISSIONS German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

1-26. Cleaning and inspecting furnace and ventilation facilities is mandated by state law (State Regulation Concerning the Cleaning and Inspection of Furnace and Ventilation Facilities of 13 December 1977).	Ensure that the following standards are met:
	
	- the following must be cleaned once a year:
	  - waste gas chimneys and flues;
	  - ventilation facilities ([1] facilities and installation needed to aerate the rooms in which fireplaces are installed, or [2] exhaust shafts without ventilating fans that aerate rooms and lead waste gas from fas fireplaces into the open);
	  - smokestacks and smoke flues that are only used occasionally, such as in weekend houses;
	  - chimneys to which exclusively open fires in fire places [offene Kaminfeuer] are connected.
	
	- the following must be cleaned twice a year:
	  - smokestacks and smoke flues, to which only fire places are connected, that are not covered in the "occasional use" provision above;
	  - smokestacks found in one- and two-family houses and are attached to up to two fire places that are not used for heating purposes;
	  - smokestacks and smoke flues to which furnaces are attached.
	
	- the following must be cleaned four times a year:
	  - smokestacks and smoke flues that are not covered above.
	
	- the following must be inspected for defect-free fitness, and, if necessary, to be cleaned:
	  - once a year:
	  - waste gas pipes for gas fire places;
	  - ventilation facilities (as defined under [1] above).
	  - twice a year:
	  - waste gas chimneys and waste gas flues;
	  - ventilation facilities (as defined under [2] above).
	
	Ensure that emergency chimneys are inspected every two years, and if necessary, cleaned.
	
	Confirm that chimneys and flues that have been in extended disuse are inspected before being brought into use, and, if necessary, cleaned.
	
	Exceptions to the above requirements:
	
	- chimneys with a consistently equal cross-section of more than 10,000 square centimeters;
	- chimneys, smoke flues, and waste gas flues, when the connecting openings to the fire places have insulating and tight seals made out of non-burnable materials;
	- chimneys that conform to DIN 1056 and DIN 1058.
	
	(NOTE: The district master chimney sweep may demand more frequent cleaning for fire safety reasons. In addition, burning as a cleaning method may be used only under the supervision of the district master chimney sweep.)

Section II

Hazardous Material Management

Section II

Hazardous Materials Management

A. Introduction

Hazardous material legislation could either be substance oriented (chemicals) or medium oriented (air, etc.). The substance oriented hazardous material legislation protects the human being and the environment in general against adversely impacting hazardous substances including strong emphasis on preventive production control. The medium oriented environmental legislation (e.g. Water Act) protects a certain natural element (e.g. water) from being polluted by hazardous chemicals or establishes disposal/treatment procedures (e.g. Waste law) for any kind of waste produced. The typical hazardous material law is substance oriented.

B. Federal Legislation

1. Substance Oriented

The substance oriented hazardous material legislation is strictly regulated by federal laws. The states only establish implementing procedural ordinances for the federal laws.

- Act for the Protection Against Dangerous Substances (Chemicals Act/ChemG)

  Ordinances to the Chemical Act:

  - Registration and Test Certification (ChemG Pruefnw V);
  - Old Chemicals Register (ChemG Astoff V);
  - Characteristics of Hazardous Material (ChemG Gef-Mm V).

- Plant Protection Law (PflSchG)

- DDT Law

- Fertilizing Law (DMG)

- Detergent Law (WRMG)

- Law on the Transportation of Hazardous Goods (G Bef GG)
  Implementing Ordinances on the Transportation of Hazardous Goods on

Roads (GGVS), Railways, etc.

- Ordinance on Hazardous Substances (Gef Stoff V)
- Ordinance on Combustible Liquids (VbF)
- Ordinance on Workplace Conditions (Arb Staett V)
- Atomic Law and Implementing Ordinances
- Explosives Act (Spreng G)

International and European Economic Community laws will be considered as well. However, German ordinances reflect International or European Laws and are updated accordingly.

2. Medium Oriented

- Emission Control Act (BIMSchG) and Implementing Ordinances (e.g. Stoerfallverordnung)
- Water Act (WHG) and Implementing Ordinances.
  - Catalog of Water Endangering Substances (KWS)
- Waste Law (AbfG)
- Ozone Layer Protection Law (G Ozonschicht).

C. States Legislation

1. Substance Oriented

As mentioned before, for the typical substances oriented hazardous material legislation, the states only established procedural ordinances (Who does what!). The so called "Poison Laws (Giftgesetze)" which have remained at the state level in the past years and have now been substituted by the Federal Ordinance on Hazardous Substances (Gef Stoff V).

Emergency response procedures for accidents involving releases of hazardous material are covered by either state district or local district plans.

2. Medium Oriented

The German Fundamental Law (GG) defines the responsibilities between the federal and state government to issue ordinances and to enact laws. In the field of water protection and conservation the states are allowed to enact their own legislation. In this case, the Federal Water Act is only a frame law. The state or even the communities regulate the storage, transportation and treatment/disposal of hazardous material with regional/local water legislation alongside the applicable federal substance oriented legislation.

D. Technical Guidelines

There is a variety of technical guidelines or government approved procedures which reflect the current standard of techniques to support the management of hazardous material. They could be either substance or medium oriented or both.

- Technical Guidelines for Burnable Substances (Techn Richtlinien Brennbare Fluessigkeiten - TRbF)
- Technical Rules for Hazardous Material (Technische Regeln Gefahrstoffe - TRGS)
- German Industry Standard (Deutsche Industrie Norm - DIN)
- Federation of German Engineers Guidelines (VDI - Richtlinien).

E. Key Compliance Definitions

- Containers - are stationary tanks, movable tanks, movable receptacles, tanks on vehicles, and tanks with interior excess pressure.
- Dangerous Substances - are substances or preparations which are: highly toxic, toxic, harmful, corrosive, irritating, explosive, oxidizing, extremely flammable, highly flammable, flammable, carcinogenic, mutagenic, or which posses other extremely harmful properties or which in themselves, or their impurities or decomposition products, are capable of altering the natural state of water, soil, air, plants, animals, or microorganisms, as well as, the balance of nature in general, to such an extent that people are severely damaged or put at an economic disadvantage.

- Empty Container - a container is considered empty when all of the contents have been removed using the practices commonly employed to remove materials from that type of container, e.g. pouring, pumping, aspirating, and no more than one (1) inch (2.5 cm) of residue may remain on the bottom of the container or inner liner if the substance can not create hazardous or explosive vapors from the small residue.

- Hazardous Areas - are areas where vapors forming combustible or explosive mixtures with air may accumulate in hazardous quantities. These areas are divided into Zones 0, 1, and 2. Hazardous areas can be reduced by special ventilation measures, construction measures or making the best use of area conditions which limit the spreading of combustible or explosive vapor/air mixtures.

- Hazardous Substances - are dangerous substances according to the *Chemialiengesetz* (Chem G), as well as explosive substances and products; substances and products from which explosives or dangerous substances can generate; and substances or products which can, according to their characteristics, transfer disease.

- Movable Tanks - are containers used for storage and transportation, the volume of which exceeds the volume of movable receptacles which are designed to be moved during service and are intended to be firmly joined to the vehicle during transportation.

- Movable Receptacles - are storage and transportation containers designed for having their location changed and having a capacity not exceeding:

  - 2.2 liters for all non-rupture-proof movable receptacle;
  - for rupture-proof movable receptacles:
    - 445 liters, for liquids of Group A, Hazard Classes I and II;
    - 780 liters for liquids of Group B.

- Preparation - is a mixture or solution comprised of two or more substances including any impurities and additives required for marketing the substance.

- Protection Areas - are areas designed for the protection of storage areas and their surrounding respectively against fire.

- Stationary Tanks - are storage tanks designed not to be moved during service lifetime.

- Substance - is a chemical element, or a chemical compound including any impurities and additives required for marketing the substance.

- Underground Tanks - are stationary tanks which are surrounded on all sides with earth and located below ground level. All other tanks are aboveground tanks.

- Waste - are movable items which the owner wants to dispose of or where the orderly elimination of such items would maintain public well-being and in particular environmental protection. Movable items left by the owner to an agency responsible for elimination or to a third party, are wastes, even though they may be recycled. These items remain as waste until they or the materials gained from them are resold as useful items.

- Waste Oils - are used, semi-liquid or liquid substances, consisting totally or partially of mineral oil or synthetic oil, including oil contaminated items from empty oil containers, emulsions, and water-oil mixtures.

- Zone 0 - are areas where, under ordinary operating conditions, combustible or explosive vapor/air mixtures exist continuously or frequently and where maximum safety provisions are required because of expected serious consequences in the event of ignition of the vapor/air mixture. Hazardous areas Zone 0 comprise especially the interior of containers and pipelines.

- Zone 1 - are areas where, under ordinary operating conditions as well as during operating troubles, an occasional accumulation of combustible or explosive vapor/air mixtures in hazardous quantities may be expected. Hazardous areas Zone 1 comprise especially the area around filling points, the immediate area of outlets of ventilation systems and the collecting spaces and dome hatches of tanks.

- Zone 2 - are areas where, under ordinary operating conditions, combustible or explosive vapor/air mixtures in hazardous quantities may occur in exceptional cases, i.e., rarely and then only for a short time, for example in a wide range above an aboveground tank or in the immediate area around shut-off devices.

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-1. Installations must have current German regulations available.	Determine if the installation keeps copies of the following regulations on file: (1)(2) - Law on the Protection against Hazardous Substances (Chemiekaliengesetz) (ChemG); - Federal Water Act (Wasserhaushaltsgesetz) (WHG); - Ordinance on Hazardous Substances (Gefahrstoffverordnung) (GefStoffV); - Ordinance on the Characteristics of Hazardous Substances (Gefaehrlichkeitsmerkmale Verordnung) (GefMerKmV); - Ordinance on the Transportation of of Hazardous Goods on the Roads (Gefahrgutverordnung Strasse) (GGVS); - Catalog of Water Endangering Substances (Katalog wassergefaehrdender Stoffe); - Federal Ordinance on Combustible Liquids (Verordnung ueber brennbare Fluessigkeiten) (VbF); - Technical Rules for Hazardous Materials (Technische Regeln - TRbF/TRGS 514, 515); - State Water Act (Landeswassergesetz) (LWG); - Community Statutes (Stadt/Gemeindesatzung); - Plant Protection law (Pflanzenschutzgesetz - PflSchG).
...	...
2-2. For installations located in Hessen and Bayern the following ordinance must also be available.	Review installation files for the following ordinance: - Ordinance for the Storage and Handling of Water Endangering Substances (Verordnung ueber Anlagen zum Lagern, Abfuellen und Umschlagen wassergefaehrdender Stoffe und die Zulassung von Fachbetrieben) (VAwSF). (1)(2)
...	...
2-3. The installation should ensure that any hazardous materials are properly identified, packaged, and labeled (ChemG).	Determine if the installation actively identifies hazardous material according to ChemG. (1)(4)
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-4. Installations which produce, store, transport, or dispose of any substances which are hazardous must be constructed in such a manner that no pollution to navigable waters will occur. This also includes production, treatment, maintenance, and operational activities at the facility (WHG/LWG).	Review areas of the installation; determine if the facilities used to store, treat, transport, or dispose of are constructed in such a manner that no pollution of surrounding waters will occur. (1)(2)(14) If possible observe the filling and draining of tanks; determine if the procedures used prevent pollution. New facilities require host government (local) approval prior to construction.
...	...
2-5. Installations which use hazardous substances must determine if there is a less hazardous substance which could replace the current material being used (GefStoffV).	Review areas of the installation which use or produce hazardous substances. Determine if another product which is less hazardous could be substituted. (9)
...	...
2-6. Individuals that work with hazardous substances must be adequately protected (GefStoffV).	Survey work areas where hazardous substances are used/produced. Look for adequate ventilation, handling instructions, spill equipment, emergency phone numbers, emergency eyewash station, emergency shower, first aid kit, and information on treatment for contact with the substance. (3)(4)
...	...
2-7. Areas which use or produce hazardous substances must have 0 % of the hazard in the air. If concentrations are higher the air must be monitored for MAK, BAT, and TRK values. This information must be kept on file (GefStoffV).	Review areas where airborne hazardous substances may occur. Interview Environmental Coordinator to determine if monitoring is required for the area and if it is being done. (2) If monitoring is being performed review monitoring reports for certification and that they are kept on file for at least 30 years.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-8. Operating instructions which include a list of all the dangers associated with the hazardous substance must be provided at the workplace (GefStoffV).	Survey workplaces for adequate instructions on the handling of the substances. Ensure that emergency procedures are outlined, including first aid. Instructions on the proper disposal or treatment of the waste should also be available. (3)(4)
...	...
2-9. Employees working with hazardous substances must be adequately trained about the hazards and safety procedures (GefStoffV).	Interview supervisor to determine the extent of training given to workers. Verify through training records. (1) Discuss with employees their work environment and taskings to determine their knowledge of the substances they are handling. Determine if their knowledge is adequate.
...	...
2-10. Food, drink, or tobacco is not allowed in areas where hazardous substances are produced or used (GefStoffV).	Check work areas for food, drink, or tobacco. Find out if employees have a break room, or designated area for meals. Work areas must be clearly separated from break areas. (3)(4) Washrooms including showers should be available for the employee to ensure a clean environment for eating, drinking, or smoking.
...	...
2-11. Storage of hazardous substances should be done in such a manner as to prevent unauthorized use. Labels should adequately warn persons of the dangers associated with the substance (GefStoffV).	Inspect storage facilities to determine if there is adequate protection against unauthorized entry and use. Is POC address clearly shown? (1) Check containers for proper labels; these should include the following: - name of material; - name of compounds; - danger symbols; - directions for special dangers; - safety instructions; - name and address of producer.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-12. Storage buildings of poisonous substances must be designed to avoid water pollution (TRGS 514).	Check that storage buildings are not located in a flood plain and are resistant to high water or strong rainfall. (2) Verify that there are no drains or other escape routes to storm water systems or to the ground water.
...	...
2-13. Storage buildings should be secure (TRGS515).	Verify that unauthorized/illegal withdrawal of items can not be made from the storage building. (1)
...	...
2-14. Poisonous material should never be stored with other hazardous substances (TRGS515).	Verify that poisonous material is not stored with: (3)(4) - inflammables; - peroxides; - fluid gases; - nitrogen fertilizers.
...	...
2-15. Persons working in the storage facility should have sufficient instruction (TRGS514).	Check that personnel have been instructed on the dangers and safety measures. See if monitoring devices for working place safety are available and adjusted. (3)(4)
...	...
2-16. Storage buildings must have emergency exit sign posted and have access for fire fighters (TRGS515).	Check that exits are well marked. (4) Lighting in building should not cause temperature increase. Verify that the appropriate fire fighters are aware of the content being stored, access to the building, and area maps for further response are available.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-17. Hazardous substances should be separated by groups as assigned in TRGS515.	Verify that substances are stored properly, items stored should also meet the following specifications: (2)(4)(12) - packages should be secure; - liquids should be stored in containers that will prevent spills and in the event of a spill have sufficient containment; - spill containment must be 10% of the total stored volume or 10% of the largest container which ever is greater; - special spill equipment must be available (absorbents, containers for contaminated water); - highly reactive or flammable substances can not be stored with other items unless the quantity stored is under 1000kg, the substances are separated by a firewall, or there is a working and adequate sprinkler system.
...	...
2-18. Persons responsible for the transport of hazardous goods must supply the appropriate information to the appropriate authority or their representative (GefGutA).	Verify that the person responsible for the transportation of hazardous goods is prepared to supply samples of the hazardous substance and package specimens upon request of the appropriate authority. (14)
...	...
2-19. Hazardous substances should be treated according to the WGK number listed in the Catalog of Water endangering Substances (Katalog wassergefaehrdender Stoffe).	Determine if personnel categorize hazardous substances according to their WGK number. (3)(4)
...	...
2-20. Local water authorities are allowed to perform inspections of sites used for storage or handling of hazardous material (LWG/ local statutes).	Verify inspection records are kept and requested improvements are taken care of. Establish an internal inspection/monitoring program for hazardous material storage/handling sites. (4)
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY **REQUIREMENTS:**	**REVIEWER CHECKS:**
2-21. The application or storage of pesticides must not endanger human health, wildlife or ground water resources (PflSchG).	Verify the use of pesticides. Are pesticides on hand, approved for use, necessary to be applied (often not necessary) and applied correctly. (3)(4)
...	...
2-22. The storage of burnable substances requires permission if certain quantities have been exceeded (VbF).	Review inspection records of areas were burnable substances are stored. Have permits been obtained through the Federal Assets Office or are installation personnel responsible/certified to obtain/give permission? (1)(2)
...	...
2-23. Improper storage of hazardous material is not allowed in residential areas (LWG/VbF/Gef Stoff V).	Review inspection records to verify no improper amount of hazardous material was stored in residential areas and residents were instructed accordingly. (1)(2)
...	...
2-24. The International Montreal Agreement to protect the ozone layer requires a 50% reduction from the usage of chloro-fluorocarbons (CFCs) until the year 2000.	Verify the reduction in using CFCs has been accomplished. At the national level even stronger requirements exist and pro-active CFC recycling is being performed. (1)
...	...
2-25. Facility response plans to hazardous material releases must be adequately prepared.	Verify that installation response plans to hazardous substance releases reflect the special requirements for emergency response (including treatment) for any identified hazardous substance on the installation. (1)(2)(13) See if installation emergency response plans correspond with local and state emergency response plans on hazardous materials.
...	...

Section III

Hazardous Waste Management

Section III

Hazardous Waste Management

A. Federal Regulations

The most important waste disposal regulation relates to the law concerning the avoidance and disposal of waste (Waste Law, "Abfallgesetz", abbreviated: AbfG). With its wide definition of waste, all moveable physical objects in solid, liquid or gaseous state are included. All possible kinds of waste from household and industrial waste to hazardous waste are covered. The AbfG now includes waste oil as well, thus superseding the special law on waste oil ("Altoelgesetz"). Animal bodies and radioactive substances are not covered.

The AbfG is concerned not only with the disposal of waste, but also with its avoidance. In its main features it imposes and specifies the obligation to dispose of waste, lays out the general standards how and in what facilities to dispose, and regulates the licensing of waste disposal installations and corporations engaged in the collection and transportation of waste.

In accordance with authorizations in the AbfG, the Federal Government has enacted various ordinances in the area of waste disposal. Among them are:

- the ordinance on record keeping concerning wastes (Abfallnachweisverordnung);
- the ordinance on collection and transportation of wastes (Abfallbefoerderungsverordnung);
- the ordinance on the import of waste (Abfalleinfuhrverordnung);
- the ordinance on the categorization of certain industrial wastes;
- the ordinance on waste disposal agents for certain operations.

It should be noted that the AbfG does not give specific instructions regarding actual standards. Rather, it gives verbally described general standards.

The AbfG contains authorization for the federal Government to enact a technical Instruction on Waste Disposal that would parallel the TA Luft and TA Laerm and could specify technical requirements. This important regulation, however, is still in preparation.

B. State/ Local Legislation

In addition to expressed authorization in the AbfG for the states to enact ordinances (e.g. in Section 4 IV AbfG, authorizing the states to allow exemptions from the general duty that waste be disposed only in special installations), certain issues of minor importance that are not covered or preempted by federal legislation remain for the states to legislate.

State law determines which local authority or corporation is in charge of the disposal, for which authorities and agencies administer the waste law; it specifies regional coordination, licensing procedures and imposes requirements concerning the operation of waste disposal facilities as far as personnel and other operational matters go, excluding, however, matters of emissions.

Being charged by state and federal law with the duty of waste disposal, local public bodies, such as counties and larger cities, can issue by-laws regarding the duty to use its disposal facilities and the terms of handing over waste to the disposal system.

I. Waste Avoidance and Recycling

The new AbfG states that avoidance and recycling are equally important to disposal. The Federal Government is authorized to issue ordinances aimed at the avoidance of wastes. However, none have been enacted as of now, the Federal Government relying on voluntary restraint agreements with the industry. The obligation under the BImSchG to operate installations so that wastes are avoided through low-waste processes and recycling is another application of the principle.

All wastes have to be collected, transported, treated and stored so that possibilities of waste recycling can be utilized. Additionally, the Federal Government is authorized to issue ordinances regarding the recycling of wastes.

II. General Principles of Waste Disposal

The AbfG requires that wastes be disposed of in a way that the welfare of the general public is not impaired, particularly that:

- human health is not threatened and human well-being is not impaired;
- useful animals, birds, game and fish are not threatened;
- harmful environmental effects are not brought about by air pollution or noise;
- concerns of nature protection, landscape conservation and urban construction are safeguarded; or

- public safety and order are not otherwise threatened or disturbed.

The goals of regional development and planning must be heeded.

Further requirements shall be laid down for the disposal of waste from commercial or other economic enterprises or public facilities, which by virtue of their nature, condition or quantity are particularly hazardous to health, air and water quality, are explosive or flammable, or contain or produce pathogens of contagious diseases. The Federal Government has determined in an ordinance listing a whole array of industrial refuse, the kind of wastes that are covered by this provision.

Since the TA Abfall has not yet been enacted and no more precise standards are available, the actual requirements will depend on a case study with the help of experts whether the public welfare is impaired.

III. Duty of Disposal

Generally, the municipalities and local bodies are in charge of disposing the waste that accrues in their area. The competent bodies are determined by state law. The public body may delegate its duty to third parties or may hire contractors to execute the duty. The owner of the waste has the obligation to cede it to the body in charge. The body must take all household waste. It may exclude waste that cannot be disposed of in the manner of household waste disposal. In this case, the duty remains with the owner. In the course of his disposal the owner may hand over industrial wastes as specified in the ordinance, for collection or transport only to persons which are licensed to do that and only after receiving a declaration by the operator of a waste disposal installation that he agrees to accept the waste. All wastes may only be treated, stored and deposited in installations for this purpose.

C. Key Compliance Definitions

- Acceptance Area - is the area on the site where the wastes are accepted into the waste management facility.

- Containers - are movable open or closed enclosures such as casks, reusable containers, drums or comparable vessels.

- Containments - are permanent open or closed enclosures such as bunkers or tanks.

- Disposal Above Ground - Solid, unreactive, immobile inorganic wastes can be disposed of at above ground disposal sites. It is sometimes necessary to treat

the wastes before disposal, e.g. by dewatering, conditioning, inertization.

- Disposal of Refuse - collecting, transporting, treating, storing, and depositing of refuse.

- Operations Log - contains waste management declarations for the wastes to be disposed of at the facility, the facility's declaration log for the accepted wastes, the in-plant routing tickets, documentation in the event of non-agreement of waste deliveries, personnel and persons in positions of authority, and unusual events and significant disturbances of normal operation such as accidents, fires, machinery and equipment breakdowns.

- Pyrolysis - is a method of waste disposal for those wastes that do not decompose within a reasonable time, mainly for organic and hazardous wastes, and liquids that cannot be disposed of otherwise. This is done in a high-temperature oven converting all of the organic materials to a less hazardous form and leaving an inorganic residue.

- Receiving Area - is the area in which the wastes are delivered, weighed and identified.

- Refuse - moveable matter the owner wants to dispose of or the proper disposal of which is imperative for safeguarding the welfare of the general public.

- Residues - are recyclable residue materials as well as the wastes to be treated or deposited that are produced during waste treatment.

- Solid Waste - removable substances, which the owner wants to get rid of or the orderly elimination of which is indicted to maintain public well-being and in particular environment protection.

- Storage Area - is the area in which wastes, treatment chemicals, supplies and residues are stored for a limited time period.

- Treatment Area - is the area in which the equipment for waste treatment is located.

- Underground Disposal - high-toxicity, non-degradable wastes that cannot be pyrolyzed as well as wastes containing highly soluble substances, which in ground-level disposal facilities would pollute the groundwater, should be disposed of underground to provide long-term isolation from the biosphere. The basic methods of underground disposal are:

    1. injection of sewage and other liquid wastes into aquifers.
    2. injection of pumpable/dumpable wastes in caverns, possibly with situ consolidation (particularly in caverns in salt structures)
    3. disposal of solid wastes in mines in containers or as backfill.

- Waste - means the movable property of which the owner wishes to dispose of or the proper management of which is necessary in the public interest, especially for the protection of the environment.

- Waste Disposal (Abfallentsorgung) - includes the recovery of substances or energy from wastes and the deposit of wastes, and the collection, transport, treatment and storage necessary to do that.

- Waste Management - includes the recovery or production of materials or energy from waste (re-use and recycling of waste), depositing of waste as well as the necessary collection, transportation, treatment and storage.

- Waste Management Officer - shall supervise the handling of wastes from their generation or delivery to their final disposal. He must also supervise compliance with the statutory ordinances governing waste management and instruct the staff on the harmful environmental impact that may be caused by the waste generated or managed at the site.

- Waste Management Operator - shall appoint the Waste Management Officer in writing and support the Waste Management Officer in the accomplishment of his tasks and in particular, to the extent that is necessary for the accomplishment of his tasks, place at his disposal assistant staff, premises, facilities. equipment, etc.

- Waste Management Plan - is drawn up, for their respective region, by the state or local authority designating suitable sites for waste management facilities. The details laid down in the waste management plans may be considered binding on parties responsible for waste management.

- Work Area - is the area on the site in which the wastes are sampled or otherwise openly handled.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-1. Does the installation have current military, DoD, and FRG regulations pertaining to hazardous waste.	Determine if copies of the following are available: (1)(2) - Federal Waste Law (Abfallgesetz) (AbfG); - Law on the Protection against Hazardous Substances (Chemiekaliengesetz) (ChemG); - Federal Water Act (Wasserhaushaltsgesetz) (WHG); - Federal Ordinance for the Categorization of Wastes (Verordnung zur Bestimmung von Abfaellen); - Federal Ordinance on waste documentation (Abfallnachweis Verordnung) (AbfNachwV); - Federal Ordinance on Waste Transportation (Abfallbefoerderungs Verordnung) (AbfBefV); - Federal Ordinance on Waste Oil (Altoelverordnung) (Altoel V); - Federal Ordinance on Hazardous Substances (Gefahrstoffverordnung) (GefStoffV); - Federal Ordinance on the Characteristics of Hazardous Substances (Gefaehrlichkeitsmerkmale) (GefMerkmV); - Ordinance on the Transportation of Hazardous Goods on Roads (Gefahrgutverordnung Strasse) (GGVS); - Catalog of Water Hazardous substances (Katalog wassergefaehrdender Stoffe); - Federal Ordinance on Combustible Liquids (Verordnung ueber brennbare Fluessigkeiten) (VbF); - Technical Rules for Hazardous Materials (Technische Regeln fuer Gefahrstoffe) (TRGS 514, 515).
...	...
3-2. Installations which are located in the state of Baveria (Bayern) must also have the following regulation.	Determine if a copy of the following is available: (1)(2) Ordinance on the Storage and Handling of Water Endangering Substances (Verordnung ueber Anlagen zum Lagern, Abfuellen und Umschlagen wassergefaehrdender Stoffeund die zulassung von Fachbetrieben) (VAwSF).
...	...
3-3. Installations which are located in the state of Hessen must have the following additional state regulations.	Determin if copies of the following are available: (1)(2) - Ordinance on the Storage and Handling of Water Endangering Substances (Verordnung ueber Anlagen zum Lagern, Abfuellen und Umschlagen wasswegefaehrdender Stoffeund die zulassung von Fachbetrieben) (VAwSF); - Waste Act for the State of Hessen (Hessisches Abfallgesetz) (HAbfG); - Hazardous Waste Ordinance (Verordnung ueber die Beseitigung von Sonderabfaellen aus Industrie und Gewerbe).
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS**
3-4. Installations which are located in Rheinland Pfalz must have the following additional state regulations.	Determine if copies of the following are available: (1)(2) - State Waste Act (Landesabfallgesetz) (LAbfG); - Second Ordinance for the Implementation of the Federal Waste Act and State Waste Act (Zweite Landesverordnung zur Durchfuehrung des Abfallbeseitigungsgestzes und Landesabfallgesetzes).
...	...
3-5. Installations must manage waste in the following manner:	Review the installation waste management program determine if it provides for the avoidance, re-use or recycling, and proper disposal of waste. (2)
- minimize the amount of waste generated; - re-use or recycle waste generated; - properly dispose of waste at permitted *facilities* (AbfG).	Determine if re-use and recycling is given priority in waste management over all other forms of waste disposal.
...	...
3-6. Installations which generate waste must ensure that it is disposed of in a manner that will not impair the well-being of the public (AbfG).	Determine if the installation disposes of waste in a manner that will not cause any of the following: (1)(2) - endanger human health and impair human welfare; - endanger domestic cattle, birds, game, and fish; - affect water, soil, or useful plants in an adverse manner; - disregard the protection of the natural or built environment or; - endanger public safety.
...	...
3-7. Installations must collect, transport, and dispose of their waste through licensed disposal firms (AbfG)	Determine if the installation is using licensed collection, transport, and disposal firms for solid waste (hazardous waste). (1)(2)
...	...
3-8. Installations which transport waste in military vehicles directly to the waste disposal facility must also have a permit from the disposal facility (AbfG).	Determine if the installation transports waste in military vehicles, if so, review records for waste disposal permits. (2)(14)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-9. Installations which generate waste oil must dispose of it separately from other wastes (AbfG, AtoelV).	Review installations waste oil management program to determine how waste oil is disposed of. (2) Check a random sample of dumpsters near motor pool areas for waste oil, cans, rags, or filters.
...	...
3-10. Installations which produce waste that is hazardous must properly label it. The waste must also be collected and transported separately from other wastes (AbfG).	Determine if the installation properly labels hazardous waste and transports it separately from other forms of waste. (2)(14)
...	...
3-11. Installations must follow any state of local ordinances regarding the collection, transportation, or disposal of waste (HAbfG, LAbfG).	Review State and local requirements for the installation. (2) Determine if proper management practices are being accomplished.
...	...
3-12. Installations which transport hazardous waste in Army vehicles must have disposal permits from the proper local authorities if the waste is transported directly to the disposal facility (AbfG).	Determine if the installation uses Army vehicles to transport hazardous waste. (2) Review installation records for disposal permits from local authorities.
...	...
3-13. Installations which use contractors to transport hazardous waste off the post must ensure that either the transporter or the installation has the proper transportation and disposal permits (AbfNachwV, AbfBefV).	Determine if the installation uses contractors to haul hazardous waste. Interview personnel about procedures for verifying that the contractor has the proper permits. Review installation records for rejected waste loads, determine if the cause was due to insufficient permits.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-14. Installations transporting hazardous waste on MILCOM must use a "Begleitschein" (hazardous waste manifest). ((NOTE: When contractors are used for transport of waste, a "Begleitschein" must be used and a copy retained at MILCOM (AbfNachwV).)	Review records for copies of the Begleitschein. (1)(2) Determine if the form has been properly filled out with the corresponding waste number from the Ordinance for the Declaration of Wastes (Verordnung zur Bestimmung vo Abfaellen).
...	...
3-15. The installation should ensure that all hazardous substances are properly identified, packaged, and labeled (ChemG).	Determine if the installation actively identifies hazardous wastes resulting from operations using hazardous substances. (2)
...	...
3-16. Installations which produce, store, transport, or dispose of any substances which are hazardous must be constructed in such a manner that no pollution to surrounding waters will occur. This also included production, treatment, maintenance, and operational activities at the facility (WHG).	Review areas of the installation determine if the facilities used to store, treat, transport, or dispose of are constructed in such a manner that no pollution of surrounding waters will occur. (1)(2)(14) If possible observe the filling and draining of tanks; determine if the procedures used prevent pollution. Watch soil pollution, because it could lead to water/groundwater pollution.
...	...
3-17. Installations which produce waste oil must attempt to recycle it, for waste oils containing PCBs or other hazardous substances must be disposed of separately in an appropriate manner (AltoelV).	Check motor pool areas, and other vehicle maintenance areas for oil recycling. Look for: (2) - separate tanks for oil, transmission fluids, hydraulic (fluids cannot be mixed); - separate containers, clearly marked, for rags, cans, and filters; - good housekeeping. Examine new oil cans, transmission fluid cans for labeling which states "When this oil becomes waste, it must be disposed of at a waste oil collection facility. Mixing with incompatible oils is prohibited."
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-18. Individuals that work with waste hazardous substances must be adequately protected (GefStoffV).	Survey work areas where waste hazardous substances are used and stored. Look for adequate ventilation, handling instructions, spill equipment, emergency phone numbers, emergency eyewash station, emergency shower, first aid kit, and information on treatment for contact with the substance. (2)(4)
...	...
3-19. Areas which produce waste hazardous substances must have 0% of the hazard in the air. If concentrations are higher the air must be monitored for MAK, BAT, and TRK values. This information must be kept on file (GefStoffV).	Review areas where airborne hazardous substances may occur from hazardous wastes. Interview Environmental Coordinator to determine if monitoring is required for the area, if it is being done and who does it. (2) If monitoring is being performed review monitoring reports for certification and that they are kept on file for at least 30 years.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-20. Operating instructions which include a list of all the dangers associated with the waste hazardous substance must be provided at the workplace (GefStoffV).	Survey workplace for adequate instructions on the handling of the wasted substances. Ensure that emergency procedures are outlined, including first aid. Instructions on the proper disposal of the waste should also be available. (2)(14)
...	...
3-21. Employees working with waste hazardous substances must be adequately trained about the hazards and safety procedures (GefStoffV).	Interview supervisor to determine the extent of training given to workers. Verify through training records. (3)(4) Discuss with employees about their work environment to determine their knowledge of the substances they are handling. Determine if their knowledge is adequate.
...	...
3-22. Food, drink, or tobacco is not allowed in areas where waste hazardous substances are produced and/or stored (GefStoffV).	Check work areas for food, drink, or tobacco. Find out if employees have a break room, or designated area for meals. Clean and dirty (waste) ashes must be clearly separated. (3)(4) Washrooms including showers should be available for the employee to ensure a clean environment for eating, drinking, or smoking.
...	...
3-23. Storage of waste hazardous substances should be done in such a manner as to prevent unauthorized use. Labels should adequately warn persons of the dangers associated with the substance or waste (GefStoffV).	Inspect storage facilities to determine if there is adequate protection against unauthorized entry. Is POC address clearly shown? (1) Check containers for proper labels these should include the following: - name of waste material; - name of compounds; - danger symbols; - directions for special dangers; - safety instructions; - name and address of producer.
...	...
3-24. Storage buildings of wasted hazardous substances must be designed to avoid water pollution (TRGS 514).	Check that storage building is not located on a flood plain and is resistant to high water. (4) Verify that there are no drains or other escape routes to storm water systems or to the soil and ground water.
...	...
3-25. Storage buildings should be secure.	Verify that unauthorized/illegal withdrawal of items can not be made from the storage building. (1)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-26. Poisonous waste material should never be stored with other hazardous substances (TRGS515).	Verify that poisonous waste material is not stored with: (3)(4) - inflammables; - peroxides; - fluid gases; - nitrogen fertilizers.
...	...
3-27. Persons working in the storage facility should have sufficient instruction (TRGS514).	Check that personnel have been instructed on the dangers and safety measures. (3)(4)
...	...
3-28. Storage buildings must have emergency exit sign posted and have access for fire fighters (TRGS515).	Check that exits are well marked and that lighting in building should not cause a temperature increase. (4) Verify that the appropriate fire fighters are aware of the content being stored and how to gain access to the building.
...	...
3-29. Hazardous substances and their wastes should be separated by groups as assigned in TRGS515.	Verify that substances are stored properly; items stored should also meet the following specifications: (2)(4)(12) - packages should be secure; - liquids should be stored in containers that will prevent spills and in the event of a spill have sufficient containment; - spill containment must be 10% of the total stored volume or 10% of the largest container which ever is greater; - special spill equipment must be available (absorbents, containers for contaminated water); - highly reactive or flammable substances can not be stored with other items unless the quantity stored is under 1000kg, the substances are separated by a firewall, or there is a working sprinkler system.
...	...
3-30. Persons responsible for the transport of hazardous waste must supply the appropriate information to the appropriate authority or their representative (GefGutG).	Verify that the person responsible for the transportation of hazardous waste is prepared to supply samples of the waste hazardous substance and package specimens upon request of the appropriate supervisor or government authority. However, samples of hazardous wastes must be taken by authorized and certified personnel (e.g. Bioenvironmental or Public Health personnel). (14)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-31. Waste hazardous substances should be managed according to the WGK number listed in the Catalog of Water endangering Substances (Katalog Wasser-gefaehrdender Stoffe).	Determine if personnel categorize waste hazardous substances according to their WGK number. (3)(4)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS**
3-32. Installations which operate waste disposal facilities must be licensed (TA AbFall 2.5 (GMP)).	Review documentation for the waste facility determine if the proper documents are kept at the installation. (1)(2)
...	...
3-33. Installations that are in the process of permitting a waste disposal facility must prepare the proper documents (GMP).	Review application for the correct items, along with the form the following should be included: (1)(2) - property list; - map which surveys land zones which shows the area surrounding the facilities, or those that are directly affected by the facility; - general location map (1:25,000); - specific building plans, municipal development plans (denoted legal validity of plans); - layout of plant to a scale of 1:5,000; - list of the documents enclosed; - construction documents (for building permit); - layout plan scale 1:500; - technical specifications; - structural drawings (including ground plans and sections) scale 1:100; - proof of stability; - documents for issuance of permits either under 7 WHG or for the discharging of substances (or groups of substances) into waste water systems; - any additional documents needed.
...	...
3-34. Installations that operate waste disposal facilities may only treat, store, or dispose of wastes which they are licensed for (GMP).	Review facility license compare this with any inventory of wastes treated, stored or disposed of. (1)(2) Interview plant manager on procedures of testing wastes to assure that it can be process at the facility. Treatment at the facility must destroy, convert, separate, concentrate, and immobilize the harmful components of the waste. These treatment methods may include thermal treatment, physical/chemical.
...	...
3-35. Wastes may not be altered to avoid treatment processes (GMP).	Review waste streams at the installation, ensure that no streams are being deliberately altered (e.g. diluted) in order to avoid treatment. (2)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-36. Installations that produce waste streams must first attempt to recycle the waste before using other treatment methods (GMP).	Review installation recycling procedures. (1)(2) If a process is available for recycling a product it is considered feasible to recycle the product.
...	...
3-37. Wastes are assigned specific management processes, these processes are based on the description of the waste provided by the "owner of the waste". The waste disposal facility must make a determination from this description as to whether or not the disposal facility is license to process the waste (GMP).	Review the descriptions of the waste streams produced at the installation. (2) Determine if any processes have changed since the last description was written which would cause it to be inaccurate (from paragraph 4.4 of anl trans).
...	...
3-38. Installations which produce wastes that contain substances or a mixture of a substance which can be separated or rendered less harmful through physical or chemical treatment must utilize this process (GMP).	Review the installation waste streams for products that can make use of a physical/chemical treatment process. (2) (NOTE: If the product can be recycled this would be the preferred treatment method.)
...	...
3-39. Installations which produce waste streams that meet the certain criteria should utilize incineration as the form of treatment (GMP).	Check that incineration is used for the following: (1)(2) - waste which is self-combustible; - waste which contains organic-toxic substances that should be destroyed thermally; or, - waste which contains organic fractions, so that the assignment of another treatment process would not be feasible.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS**
3-40. Surface disposal may only be used by waste streams which have been assigned the proper value (GMP).	Determine if wastes being sent to a surface landfill are assigned the following values: D1 -D6, and D7.01 -D7.03. (1)(2)
...	...
3-41. Deposition of wastes underground may only take place if the particular waste cannot be physically/chemically treated or incinerated and provided that the waste is not explosive, flammable, or reactive with other wastes deposited there or the environment in which it is stored, or form toxic gases (GMP).	Determine if the installation disposes of any waste streams through the use of underground landfills. (1)(2) Ensure that these wastes meet the criteria for this method of disposal and appropriate authorities were involved for examination and approval.
...	...
3-42. Wastes deposited in monofills can include bulk wastes which have similar deposition behavior. The waste must have values between D1 to D7.18 if the value is higher the individual waste must be considered before it is disposed of (GMP).	Determine of the installation disposes of any waste in a monofill, if so ensure that the waste number is within the range stated and if not that it has been approved for the particular waste in question to be monofilled. (1)(2)
...	...
3-43. Installations may be subject to waste management certification for portions of the waste management declaration. This review will include checking for items that are recyclable, and whether waste streams have been properly assigned (GMP).	Determine whether or not the installation has been certified. (1)(2) Review records for recycling, and proper assignment of waste stream identification numbers. Determine how old the installations waste declaration is if it is more then three years old it can not be recertified.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-44. If the installation has any changes in the waste stream, a new waste management declaration must be filed (GMP).	Review waste stream declarations determine if any change has been made in the waste stream that a new declaration has been filed. (1)(2)
...	...
3-45. Photocopies of the waste management declaration must be kept on file for ten years (GMP).	Review records for photocopies of waste management declarations. (1)(2)
...	...
3-46. Installations which operate a waste disposal facility must have a separate waste inspection unit and a waste operation unit (GMP).	Interview waste disposal manager, determine if the facility has separate units. (2)(16) Determine if the waste inspection unit takes responsibility for permit preparation, permit acceptance, inspections. The operation unit must take responsibility for plant engineering.
...	...
3-47. An organizational chart must be kept on file at the waste disposal facility (GMP).	Review files for organizational chart. (2)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-48. The waste management facility must prepare an acceptance declaration (GMP).	This includes the following tasks: (2)(16) - consult with the waste generator about preparing the responsibility declaration; - implement any declaration tests or investigations carried out in the facility; - review declaration with regard to wastes approved for management; - establish the type, extent, and frequency of identity checks; - establish delivery conditions and safety regulations for handling; - issue acceptance certificates after confirmation of the waste management declaration by the "competent authority;" - forwarding the waste management declaration to the competent authority for the waste management facility in order to obtain confirmation of the admissibility of waste management; - prepare a photocopy of the waste management declaration for the company's own purposes and transfer the original to the waste generator. Review records for acceptance declarations. Determine if the appropriate steps listed above are being taken.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS:**
3-49. Once the waste is delivered to the facility an acceptance inspection must take place (GMP).	Check the waste manifest. (1)(12) Check the waste mangement declaration in the acceptance area of the management facility with the delivered waste for agreement with with the corresponding entries on the waste manifest. Examine the in-house routing ticket for documenting the results of acceptance inspection, assignment to transfer point or to the storage or disposal location, the handling steps (if needed) and transfer. Determine quantity of waste either in weight (preferred) or in volume. Identify waste which should include: visual inspection, sampling, identification analysis and sample storage. (NOTE: Samples must be stored at the facility for one month. After which they may be landfilled for six months.) Compare the results from the acceptance inspection and the declaration. - if these agree the waste can be accepted; - if these do not agree the items in question must be clarified by the party which signed the waste declaration; - if the facility is licensed for this waste it can remain; - if the facility is not licensed an alternative must be promptly determined. Review facility inspection procedures. Determine if they meet the listed requirements.
...	...
3-50. Any vehicles delivering waste must be inspected before leaving the facility (GMP).	Determine if the facility is inspecting the vehicles before leaving the facility. This should include: (14) - cleaning of tanks; - cleaning of vehicles; - reweighing of vehicles if needed to confirm volume of waste delivered; - in-house routing ticket checked, and turned in; - waste manifest turned in.
...	...
3-51. Personnel at the waste facility should have adequate training.	Determine if the facility personnel have been adequately trained for job specific tasks (GMP). Management personnel should have the technical knowledge; this should be evidenced by proof of training or degree.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-52. The facility must have a set of regulations, a facility manual, and an operations log (GMP).	Determine if the facility has a set of regulations which include safety. Any significant regulations must be displayed at the plant entrance. (4)
...	...
3-53. Before the facility may operate and whenever there are revisions made to the regulations a copy must be submitted to the competent authority for approval.	Determine if the facility has a plant manual which is kept up to date The manual must contain the following information: (1)(2)(12) - job descriptions; - job instructions; - inspection procedures; - maintenance procedures; - special safety regulations; - occupational health safety; - documentation procedures; - filing procedures.
...	...
3-54. Waste management facilities must have an Operations Log (GMP).	Review the facility's operations log for the following: (1)(2)(12) - waste management declarations for waste to be disposed of in the facility; - declaration log for wastes accepted by the facility; - in-plant routing tickets; - documentation of non-agreement waste deliveries (discrepancies?) as well as entries in the responsible declaration and the declaration analysis, and any other additional steps taken; - declaration book stating any residues, that are to be treated, disposed of, and or recycled, at a different location; - meteorological data - if required; - personnel and persons in positions of authority; - records of events such as fires, explosions, machinery failure. This should also include: date of incident, duration, mitigation procedures.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS**
3-55. In addition to the above waste treatment facilities should have the following as a part of the operations log.	Check for the following: (1)(2)(12) - plant operation times, shut down times, if applicable it should be according to the separate treatment operations; - treatment plan which includes data on waste type, storage area, quantity, length of treatment and treatment location for wastes; - proof of the quantity of waste per treatment location for solid, paste-type, and liquid wastes (including drums) in t/day or container units/day; - proof of the process materials used per day (includes fuel, treatment chemicals, process water etc) in t/day; - proof of resulting and utilized heat in incineration plants (GJ/year); - the type, amount, and the location of the wastes and process supplies stored in the plant; - the type, the amount, composition and time of the liquid wastes to be included, and if applicable, to be introduced; - the type and extent of maintenance procedures that are relevant for authorized operation; - Note: there may be additional inspections required for various types of waste management, these must be documented in the log.
...	...
3-56. The operations log must be maintained by qualified personnel on daily basis. Review procedures for maintaining operations log (GMP).	Determine if the facility manager checks and initials these logs daily. (1)(2)(12) Determine if the logs are kept in a secure place to prevent unauthorized access.
...	...
3-57. The operation log must be made available for inspection (GMP).	Determine if the log is available for inspection. (1)(2)(12)
...	...
3-58. The operations log must be kept for a minimum of three years. Logs pertaining to landfills must be maintained for an undetermined time frame (GMP).	Determine if the installation facility has maintained operations logs for the minimum time frame and that they are made available to the authorities on request. (1)(2)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-59. The facility must report any incidents which can have harmful effects on persons or things within or outside the facility or could result in a shut down of the facility. Such incidents must be reported by phone to the competent authority immediately (GMP).	Interview plant manager, determine if any incidents have occurred and how they were handled. (NOTE: This does not affect the provisions of the Accident Ordinance (12.BImSchV) (Stoerfall Verordnung). Incidents covered by this Ordinance must be handled accordingly.)
...	...
3-60. An overall annual review must be prepared within three months after the end of the calendar year. This evaluation of the entries recorded in the log must be in the format required by Umweltstatistikgesetz [Environmental Statistics Act] (GMP).	Review annual reports on the operations log, determine if they have been prepared in the proper format. (1)(2)(12)
...	...

Section IV

Natural & Cultural

Resources Management

Section IV

Natural and Cultural Resources Management

A. Federal Regulations

Endangered Species:

Concerning endangered species of flora and fauna the primary legislation in the FRG is as follows:

- Nature Protection Act (Bundesnaturschutzgesetz);
- Forestry Act (Bundeswaldgesetz);
- Act about Species Protection agreement ratifying the 1973 Washington Convention on flora and fauna threatened with extinction;
- Plant Protection Act (Pflanzenschutzgesetz);
- Animal Protection Act (Tierschutzgesetz);
- Wildlife Species Act (Bundesartenschutzgesetz);
- Federal Hunting Act (Bundesjagdgesetz);
- Ordinance for the Protection of Wild Animal and Plant Species, 1986;
- Federal Game Protection Ordinance, 1985.

Cultural Resources:

Currently no Federal law exists concerning the protection of cultural resources, most often referred to as monuments. But in nearly every state there does exist a law, statute, or provision for the protection of monuments.

While requirements for protection of cultural monuments are found at the State level, provisions for preservation of cultural monuments can be found in the Federal Building Act (Bundesbaugesetz). The FRG is also a participant in the "Convention Concerning the Protection of the World Cultural and Natural Heritage."

Nature protection:

The main legal framework dealing with nature protection is the Federal Nature Protection Act (Bundesnaturschutzgesetz). While this Federal act provides a framework, the actual responsibility for nature protection and land management is at the State level.

In reference to wetlands protection, the FRG is a participant in the "Treaty Concerning Wetlands especially as Habitat for Water and Shore Birds of International Significance."

B. State and Local

Endangered Species:

The States have adopted ordinances implementing the various Federal species protection acts and ordinances. But the States also protect animals or plants native to a specific geographical region. One of the most commonly protected animals at the State level are various species of deer such as the red deer or the muffle deer.

Cultural Heritage:

In the FRG the State has the primary responsibility in the protection of cultural monuments. Currently this responsibility is executed through the promulgation of an ordinance or statute protecting cultural monuments and the maintenance of a register of listed monuments.

Nature Protection:

Within the States the protection of nature in specific localities is the responsibility of local administrations, except in Berlin, Breman and Hamburg.

The State provisions identifying and classifying parcels of land as protected zones, landscape planning, land and forest management, land consolidation and allocation, and recreational land use regions are extensive and often detailed.

In addition to protected natural areas that have been identified and are managed by the State, there are also private conservation areas owned by various organizations throughout the FRG.

D. Key Compliance Definitions

- Groups of Buildings - groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art, or science.

- Habitat - the normal abode, natural home or locality of a named species or population of a named species;

  - a distinctive type of terrain, site or location, distinguished by physical, geographical, vegetational or other features.

- Monuments - architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science.

- Regions - the geographical units defined in nomenclature of territorial units for statistics(NUTS) of Eurostat, the Statistical Office of the European Community:

  - on level II for Greece, France, Italy, Portugal, Spain and the United Kingdom, and
  - on level I for other Member States.

- Sites - works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological points of view.

- Specimen - any animal or plant, whether alive or dead, of the species specified in accordance with Annex II and Annex III to this Directive, any part or derivative thereof, as well as any other goods which appear from an accompanying document, the packaging or mark of a label, or from any other circumstances, to be parts or derivatives of animals or plants of these species.

- Threatened Habitat - a type of environment characterized by a complex of abiotic conditions and a specific biotic community, exposed to the risk of disappearance or degradation because of its scarcity or because of the fragility of its ecological conditions or because of the fragility of its more specialized and characteristic species or because of its tendency to rarification. In this context "disappearance" means passage to another category in general classification of habitats and "degradation" means the reduction of its most characteristic elements without any change of category.

- Threatened Species

  - endangered species, i.e., taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating. Included are taxa whose numbers have been reduced to a critical level or whose habitats have been so drastically reduced that they are deemed to be in immediate danger of extinction; and

  - vulnerable species, i.e., taxa believed likely to move into the endangered category in the near future if the causal factors continue operating. Included are taxa of which most or all populations are decreasing because of overexploitation, extensive destruction of habitats or other environmental disturbance; taxa with populations that have been seriously depleted and whose ultimate security is not yet assured; and taxa with populations that are still abundant but are under threat under serious adverse factors throughout their range; and

  - narrow endemic species under latent threat.

COMPLIANCE CATEGORY: NATURAL & CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-1. Determine actions or changes since previous review of natural and cultural resources management.	Obtain a copy of the previous review of natural/cultural resources management. Determine whether non-compliance issues have been resolved. (2)
...	...
4-2. Copies of all relevant Federal, Laender, and local laws, regulations, ordinances and guidance documents concerning natural and cultural resources management should be maintained at the installation.	Determine whether copies of the following are kept at the installation: (1)(2) - Verordnung zum Schultz Wildebender, Pflanzennarten Bundesartenschutzverodnung (BArtSchV), Federal Nature Conservation Act, Section One; - Bundesnaturschutzgesetz (BNatSchG), Environmental Protection and Landscape Maintenance; - European Economic Community (EEC) Regulation 3626/82; - EEC Environmental Policy and law, 18/6 (1988), Draft Directive Habitat Protection of Wild Flora and Fauna.
...	...
4-3. Certain species of wild flora and fauna are subject to special protection (BArtSchV, Section 1, Article 1).	Review APPENDIX IV-1 to determine if any species listed in column 1 are present on the installation. (17)
...	...
4-4. A permit is required for the import or export of certain species of fauna and flora (BArtSchV, Section 2, Article 5).	Verify that a permit was obtained if any of the species: (17) - marked with a cross (+) in Column 4 of Table 4-2; or - listed in Column 1 of Table 4-1; - were imported or exported by the installation.
...	...

COMPLIANCE CATEGORY: NATURAL & CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
4-5. Installations are prohibited from using certain methods and/or equipment to pursue, lure, catch or kill certain wild fauna and vertebrate species (BArtSchV, Section 6, Article 13).	Determine whether any of the wild fauna species listed in APPENDIX 1 or 2 are lured caught or killed on the installation. (17) Verify that the following methods and equipment are not used: - snares, nets, traps, hooks, glue, or other adhesives; - living animals used as bait; - artificial light sources; - acoustic or electrical devices; - gas, smoke, intoxicating or toxic substances; - semi-automatic or automatic weapons with magazines that hold over two cartridges or have sighting devices; - explosives; - motor vehicles or aircraft; - boats with a driving speed of more than 5km/hour. unless the installation has been granted an exemption.
...	...
4-6. Historical landscapes are required to be preserved (BNatSchG).	Determine whether any historical landscapes are present on the installation and confirm that measures are being taken to protect them. (18)
...	...

Section V

Environmental Noise Management

Section V

Environmental Noise Management

A. Federal Legislation

The Federal Immission Control Act (Bundes-Immissionsschutzgesetz) enacted 15 March 1974 and supplemental Immission Control Acts of the states form the basis for environmental protection from noise disturbance. Building codes, city planning, environmental planning, trading, and traffic (road, rail, air and water) regulations also have elements protecting against excessive noise. Installations dealing with nuclear power and airports with jet aircraft are the only commercial and industrial exceptions to the Federal Immission Control Act. The Federal Aircraft Noise Control Act of 1971 (Gesetz zum Schutz gegen Fluglaerm) is a separate law for airports with jet aircraft.

Procedures are provided in the Federal Immission Control Act to control installations with activities producing noise detrimental to humans, animals, plants, and materials. Installations with potential for detrimental noise impact on the environment receive official approval through the appropriate "Factory Inspectorate" (Gewerbeaufsichtsamt). Installations requiring official approval can be ordered to appoint an "immission control agent" (Immissionsbeauftrager) if justified by the size and nature of the installation. The duties of an immission control agent include developing and implement beneficial manufacturing processes, controlling and supervising compliance to legal pollution limits, and educating personnel about good environmental management practices.

Technical instruction giving directions to the appropriate government agencies on acoustic standards to be met by noise producers to receive an operating license was issued in 1968 in "Technical Instruction for Providing Protection Against Noise" (TA Laerm). These have become the established standards for measuring the acceptability of noise.

The most important German regulations on noise immissions for barracks, shooting ranges, and military training areas are in the "Technical Instructions for the Protection Against Noise" (Technical Instructions - Noise, 1968) and the "VDI Guideline 2058 Judgement of Work Noise in the Neighborhood" (VDI Guideline 2058, 1973).

The Federal Aircraft Noise Control Act of 1971 requires aircraft operators and airports to minimize the adverse effects of air traffic on the public. Furthermore, this act called for the designation of noise protection areas around air fields used by jet aircraft. Two protection zones have been designed. In zone 1, buildings, such as new dwellings, are restricted in areas that are likely to be

greatly affected by noise; and individuals already living in that zone are compensated. The construction of hospitals, homes for the aged, schools, and similar institutions is prohibited in zone 2.

State noise regulations address issues such as the authorization of the state government to prohibit detrimental noise activities at an installation, authorization of communities to limit or prohibit detrimental noise activities, personal responsibility of the citizen for noise impact, protection of "night rest", time and duration of fireworks, and noise reduction plans.

C. Key Compliance Definitions

- Annoyance - is a function of several factors:

  1) the loudness of the sound;
  2) the tonal quality of the sound;
  3) appropriateness of the sound.

- Background Noises - lowest foreign noises present at the measurement location which cannot be attributed to any one noise source (they are characteristic of the locality when the noise source being evaluated is not in operation).

- Central Business Districts - central business districts mainly serve the accommodation of commercial businesses, and of central economic and administration facilities. Allowed are business, office, and administration buildings; retail businesses, saloons, restaurants, accommodation and entertainment businesses; other non-disturbing commercial businesses; religious, cultural, health, and sports installations; gas stations accompanying major parking facilities; residences for staff personnel and managers. On exception, other residences and gas stations not described above can be permitted.

- Commercial Districts - commercial districts serve primarily the accommodation of not substantially disturbing businesses. Permitted are commercial businesses of all kinds and storage facilities. Also included are business, office, and administration buildings; and gas stations. Exceptions for staff and manager housing, and religious, cultural, social, health, and sports installations can be permitted.

- Conspicuous Noise - noise that:

  - exceeds the background noise by 10 dB in all or in particular frequency bands;
  - occurs at times of rest or recuperation (for example, at night, in the evening, early morning, or during weekends);
  - stands out from the background noise through special frequency or impulse characteristics; or
  - its type is unusual or alien to the locality.

- Detrimental Environmental Impacts - immissions which, by their nature, extent, or duration are likely to endanger, substantially disadvantage, or substantially annoy the general public or neighborhood.

- Duration of Measurements (TM) - must include the characteristic noise effects and be so annotated. The duration of the measurements depend upon the regularity of the noise source and is in general short in comparison with the reference duration.

- Emissions - air pollutants, sounds (noise), vibrations, light, heat, rays, and similar environmental impacts which are emitted from some installation.

- Exclusively Residential Areas - exclusively residential areas serve residential purposes only. Buildings allowed in these areas include residences, with exceptions provided for non-disturbing shops, workshops, and accommodation businesses covering daily needs. The size of the building can be limited to two dwelling units.

- Foreign Noises - noises which occur independently from the noise sources under evaluation (traffic noises, noises originating from other installations or equipment).

- General Residential Areas - general residential areas serve predominantly residential purposes. Buildings allowed in general residential areas include residences, local stores, saloons, restaurants, non-disturbing workshops, and religious, cultural, and social facilities. Upon review and approval accommodation businesses, other non-disturbing commercial enterprises, administration and sports facilities, nurseries, gas stations, and small animal hutches can be permitted. The size of the buildings can be limited to two dwelling units.

- Immissions - air pollutants, sounds (noise), vibrations, heat, rays, and similar environmental impacts, which affect human beings, animals, plants, and other materials.

- Installations Requiring Official Approval - all installations which are potentially

able to produce detrimental environmental impacts, endanger, substantially disadvantage, or substantially annoy the general public or neighborhoods.

- Mixed Areas - mixed areas serve residences and commercial businesses which do not disturb the residential areas. Buildings allowed include residences; business and office buildings; retail stores, saloons, restaurants, and accommodation businesses; other commercial businesses; religious, cultural, social, health, and sports installations; nurseries, and gas stations. Special exceptions are possible for small animal hutches.

- Noise - is sound that annoys or which poses a threat to human well-being. People become annoyed with sounds when they interfere with some valued activity such as sleep, conversation, recreation, or concentration. Noise of sufficient magnitude can cause hearing impairment and has been linked to stress-related conditions (Development of a NMP for HQ, USAEUR).

- Other Special Areas - all areas not described in other area definitions are considered "other special areas". Of particular concern are health resorts, shopping malls, fair grounds, universities, hospitals, and harbors. Installations of the German Bundeswehr are also considered special areas (Federal Ministry of Defense, 1984).

- Rating Level - the effects of noise are evaluated in terms of the rating level (Lr), which is determined from A-weighted sound levels and takes into account the duration of the noise, the time of day, and especially the characteristics of the noise (frequency, impulse). The effect of variable noise of a particular rating level is equivalent to a constant noise source of the same level during the total reference duration.

- Recreation Areas - recreation areas are defined as areas with weekend homes, vacation homes, and campgrounds.

- Reference Duration (TB) - the guide values of the rating level are referenced to a duration of 16 hours during day-time and 1 hour during night-time. The night-time is comprised of 8 hours: it starts in general at 10 PM and ends at 6AM. (NOTE: In specific cases during the first and/or last night-time hour, the general night-time guide values may be exceeded by 5 dB(A).)

- Sound Level - depend upon the the method of measurement. A-weighted sound level (LA) is used as the unit of measurement and is described in DIN 45633, part 1. Additional subscripts indicate the method of measurement employed:

  - LAI used for IMPULSE setting, given in dB(AI);
  - LAF used for Fast setting, given in dB(AF);
  - LAT used for periodic maximum measurement method, given in dB(AT).

- Villages - the primary purpose of villages is the accommodation of agricultural and forestry businesses, and private residences. Other businesses allowed are retail stores, saloons, restaurants, and accommodation businesses; workshops; other non-disturbing commercial enterprises; installations for local administrations; religious cultural and sport installations; nurseries, and gas stations.

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-1. Determine actions or changes since previous review of noise management.	Obtain a copy of the previous review of noise management. Determine whether non-compliance issues have been resolved. (2)
...	...
5-2. Copies of all relevant Federal, Laender, and local laws, regulations, ordinances and guidance documents concerning Noise management should be maintained at the installation.	Determine whether copies of the following are kept at the installation: (19) - Bundesimmissionsschutzgesetz (BImSchG) Federal Emission Control Law, Air and Noise Pollution, 15 March, 1974; - Bundesimmissionsschutzverwaltungsvorschriften (BImSchVwV) Federal Air and Noise Pollution Regulations; - TA Laerm, Technische Anleitung zum Schutz gegen Laerm, Technical Instructions for the Protection Against Noise, 16 July 1968; - Gesetz zum Schutz gegen Fluglaerm, Federal Aircraft Noise Control Act, 1971; - Bundesgesetzblatt I, (page 503) Law on Protection from Construction Noise, 24 May, 1968; - Verband Der deutschen Ingenieure, (VDI) 2058 Part I, Beurteilung von Arbeitslaerm in der Nachbarschaft, Evaluation of Ambient Noise, August 1971; - Verband Der deutschen Ingenieure, (VDI) 2058 Section B1, Judgement of Work Noise in the Neighborhood, 1973; - Deutsche Industrie Norm (DIN) 18005, Noise Abatement in Urban Planning, May 1987; - DIN 45645, Einheitliche Ermittlung des Beurteilungspegels, Teil 1, Standardized Determination of the Rating Level for Sound Immisions, Part 1; RHEINLAND-PFALZ - State Ordinance on Noise Control, 25 October, 1973.
...	...

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:

5-3. Noise from military activities must be controlled to protect human health and welfare. Certain noise levels should not be exceeded, depending upon the area(s) that border or are contained within the installation (VDI 2058 Part 1 [draft], paragraph 3.3.1).	Verify that the following external guide values are not exceeded: (19)
	
	- exclusively commercial or industrial district (can include residences of owner/manager of the business or emergency services):
	  - 70 dB(A) AOV day and night value;
	
	- area that is predominantly industrial:
	  - 65 dB(A) AOV day value;
	  - 50 dB(A) AOV night value;
	
	- area that is neither exclusively residential or industrial, a mixed area:
	  - 60 dB(A) AOV day value;
	  - 45 dB(A) AOV night value;
	
	- areas that are predominantly residential:
	  - 55 dB(A) AOV day value;
	  - 40 dB(A) AOV night value;
	
	- exclusively residential areas:
	  - 50 dB(A) AOV day value;
	  - 35 dB(A) AOV night value;
	
	- rest areas (kurgebiet), hospitals, nursing homes and other specially posted areas:
	  - 45 dB(A) AOV day value;
	  - 35 dB(A) AOV night value.
	
	Confirm that maximum instantaneous noise levels which exceed the standard immission values by more than 30 dB(A) by day and 20 dB(A) at night are avoided and/or resolved.

...	...
5-4. When establishing compliance with the external guide values, certain measurement practices must be followed (VDI 2058 Part 1 [draft], paragraph 4.2.1).	Verify that the microphone used to assess the level of external noise is: (19) - located 0.5 meters outside the building, in front of an open window, or 3 to 4 meters away from the building, at a minimum height of 1.2 meters; - has a wind shield. Confirm that appropriate sound level meters (according to DIN 43633) are used: - precision impulse type for noise levels that change less than 10 dB/second; - simple sound level meter when only a rough estimate is required. Verify that the equipment has "FAST" and "IMPULSE" settings and has an A-weighted network.
...	...

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-5. Noise transmitted to the inside of residential buildings is also regulated and must not exceed specified values, regardless of the external guide values for the area (VDI 2058 part 1 [draft], paragraph 3.3.2).	Confirm that the following values are not exceeded within any residential buildings: (19) - 35 dB(A) day value; - 25 dB(A) night value. Verify that the measurements used to assess compliance with these levels follow the procedures listed below: - doors and windows closed; - microphones placed 1.2 meters above the floor; - microphones placed at least 1.2 meters away from any wall; - microphones placed in areas that are regularly utilized by people.
...	...
5-6. The conspicuousness of noise must be taken into account when guidelines for acceptable noise levels have not been established (VDI 2058, Part 1 [draft], paragraph 1).	Determine whether any areas which are not covered by established guidelines for noise level have been assessed for the following conspicuousness factors: (19) - noise exceeds the background noise by 10 dB or more in any or all frequency bands; - noise occurs at night, on weekends, early mornings, or on weekends; - noise stands out from background through special frequency or impulse characteristics; - is an unusual or alien type of noise for the area.
...	...

5-7. Planning new building or altering a building for a new function on property adjacent to a federal highway should incorporate measures that provide protection from annoying and unacceptable traffic noise. Certain areas and facilities must be provided protection from noise within specified limits (RLS-81).	Determine whether noise abatement measures are being implemented and/or planned for with any new construction or rehabilitation. (2)
	
	Confirm that the following levels are not exceeded (if applicable):
	
	- hospitals, schools and nursing homes;
	  - 60 dB(A) day;
	  - 50 dB(A) night;
	
	- exclusively and generally residential areas:
	  - 62 dB(A) day;
	  - 52 dB(A) night;
	
	- central business districts, villages, and mixed areas;
	  - 67 dB(A) day;
	  - 57 dB(A) night;
	
	- commercial districts;
	  - 72 dB(A) day;
	  - 62 dB(A) night.

...	...

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-8. The results of evaluations performed to assess noise levels should be maintained.	Examine noise measurement reports (see APPENDIX V-1). (19)
...	...
RHEINLAND-PFALZ	
5-9. Installations are prohibited from engaging in any operations that disturb the public peace during certain hours (State Ordinance on Noise Control paragraph 2).	Verify that operations at the installation that could disturb the public peace are not performed between 2200 hours and 0700 hours unless: (19) - they are actions taken to avoid or resolve an emergency; or - the installation has been granted an exemption (interview local authorities).
...	...

5-10. The use and operation of motor driven lawn and garden equipment is regulated (State Ordinance on Noise Control, paragraph 4).	*Confirm that the following prohibitions are complied with:* (1)
	
	- motor driven lawn mowers may only be used on workdays from:
	  - 0700 - 1300 hours and;
	  - 1500 - 1900 hours.
	
	(NOTE: This restriction does not apply to electric lawnmowers with noise reduction.)
	
	- only equipment with noise reduction is used within 50 meters of:
	  - churches;
	  - hospitals;
	  - nursing homes;
	  - childrens homes;
	  - other establishments requiring noise control.

Section VI

Pesticide Management

Section VI

Pesticide Management

A. Federal Regulations

The primary Federal regulations concerns pesticides which may be used in FRG; applicator certification; and the destruction or protection of specific flora or fauna by pesticide/herbicide use. Requirements concerning storage, disposal, and runoff are found within the regulations concerning hazardous materials, water-endangering substances, and waste disposal.

Specific regulations of interest include:

- Act Concerning Trade in DDT (Gesetz ueber den Verkehr mit DDT, 1972);
- Ordinance Concerning Hazard Indicators for Substances and Preparations According to the Chemicals Act (1981);
- Ordinance Concerning the Scope of Pesticides for Plant Protection Agents (Verordnung ueber Anwendungsverbote fuer Pflanzenschutzmittal, 1988);
- Fifth Notification Concerning the Substances and Procedures That May be Employed During Officially Required Rat Extermination (1982);
- Ordinance for the Protection of Bees From Dangers Due to Pesticides (1972);
- Ordinance on Examinations for the Diploma of Qualified Pest Control Agent (1984);
- Plant Protection Expert Knowledge Ordinance (1987);
- Ordinance Fighting Against Muskrats (1988);
- Plant Inspection Ordinance (1989);

B. State / Local Requirements

At the State level the requirements involve the adoption and implementation of the Federal Plant Protection Act. The states have also promulgated ordinances concerning the use of specific pesticide/herbicide substances such as ethylene oxide, prussic acid, and compounds which develop hydrogen phosphide. In addition to being regulated at the Federal level, the States have also promulgated pest specific regulations such as provisions for controlling warble flies and the destruction of crows.

The states have also promulgated regionally specific ordinances within their individual jurisdictions. One example is in the State of Bavaria, the Ordinance for the Protection of Trees in the State Capital Munich, 1976.

C. Key Compliance Definitions

- Affected/Infected Articles - plants, plant products or other articles which are, or could be the carriers of certain harmful organisms.

- Balance of Nature - its components, namely earth, water, air, types of animals, types of plants, as well as the interaction of the structure of effects existent between them.

- Cultivated Substrates - earth/soil and other substrates in solid or liquid form which serve as room for the roots of plants.

- Harmful Organisms - animals, plants and micro-organisms in all stages of development which can cause significant damage to plants or to the products of plants, as well as the muskrat. Viruses and similar pathogens are considered to equate to micro-organisms; illnesses not caused by harmful organisms are considered to equate to harmful organisms.

- Integrated Plant Protection - a combination of procedures in which the use made of chemical plant-protection-media (pesticides, fungicides, etc.) is limited to those amounts which are necessary and where primary care is given to measures of a biological, bio-technical or plant-breeding nature as well as to measures.

- Introduction Into (Public) Use - the offering, holding stocks ready for issue, offering for sale and any manner of handing-over to other parties.

- Plant Products - products originating from plants which are not treated or processed other than by simple procedures such as drying, chopping, crushing, grinding, etc., with the exclusion of processed wood.

- Plant Protection - the protection of plants from harmful organisms and non-parasitic damage; the protection of products made from plants against harmful organisms (protection of stored stocks). Includes the use made of and the protection afforded to such animals or plants or micro-organisms with which the control of harmful organisms can be undertaken.

- Plant Protection Equipment - appliances and equipment which are designed for the emitting of plant-protection-media.

- Plant Protection Media - materials which are designed to:

  1) protect plants against harmful organisms or non-parasitic damage;
  2) protect plant products against harmful organisms;
  3) protect plants or plant products against animals, plants or micro-organisms which are not harmful organisms;
  4) influence the life-processes of plants including nourishment (growth regulators);
  5) hinder the germination/sprouting of plant products; and
  6) kill plants off or rid areas of plant growth or keep areas free of plant growth (without these materials falling under 1-5 above).

  listed from 1 - 5 above so as to alter their characteristic or their effects.

- Plants - living plants and parts of plants including fruits and seeds which are intended for cultivation purposes.

- Plant Strengthening Media - materials which are solely designed to increase the resistance of plants to organisms without these materials exerting any harmful effects upon either the health of people and animals or the balance of nature.

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-1. Determine actions or changes since previous review of pesticide management. (NOTE: The term "PESTICIDE" used in this protocol refers to both insecticides and herbicides.)	Obtain a copy of the previous review of pesticide management and determine whether non-compliance issues have been resolved. (2)
...	...
6-2. Copies of all applicable Federal, Laender and local regulations directives, and guidance documents on pesticide management should be maintained at the installation.	Determine whether copies of the following documents are kept at the installation: (20) - Katalog wassergefaehrdender Stoffe, Catalog of Water Endangering Substances; - Statute Concerning Dealing with DDT, 15 September, 1986; - Verordnung ueber Anwendungsverbote fuer Pflanzenschutzmittel (Pflanzenschutz-Anwendungsverordnung) 27 July, 1988; - Verordnung ueber die Verwendung von Phosphorwasserstoff zur Schaedlingsbekaempfung, Ordinance Concerning the use of Hydrogen Phosphoride for Pest Control, 6 April, 1936.
...	...
6-3. The production, introduction, export, transport, utilization, or acquisition of 1.1.1-Trichlor-2 through 4 (chlorphenyl-aethan) and its isomers (DDT) products, or any materials that contain DDT is forbidden (Statute Concerning Dealing With DDT, 15 September, 1986, paragraph 1).	Confirm that the installation does not use or acquire DDT or any of its products, including food made from animals exposed to DDT and agents used for cleaning, dying, etc if they are remainders from DDT products. (20)
...	...

Section VII

Petroleum Oil and Lubricant (POL) Management

Section VII

POL Management

A. Federal Legislation

The Law Concerning Measures to Assure the Disposal of Waste Oil (Waste Law) or Abfallgesetz (AbfG) now includes waste oil. Consequently, it supersedes the special law on waste oil, Altoelgesetz, and regulates disposal of waste oil and oil residues. If an individual, organization, or business accumulates more than 500 kilograms of waste oil per year, accurate records must be maintained of its accumulation and disposal. Fees on raw oil products are put in a fund to reimburse the cost of waste oil disposal within the guidelines of the law. However, AbfG does not give specific instructions as to actual standards, but verbally describes general standards. Technical instructions are still in preparation.

Technical regulations with general building provisions for aboveground and underground tanks exist in the Technical Regulations for Combustible Liquids. The Technical Ordinance on Plants Which Serve the Storage, Filling and Transport on Land of Combustible Fluids contains regulations for storage and dispensing of fuels.

B. State Legislation

Where there is express authorization in the AbfG for the states to enact ordinances, certain issues of minor importance may be legislated by the state.

C. Key Compliance Definitions

- Air Pollution - are changes to the natural composition of the air, especially through smoke, soot, dust, gas, aerosols, steam, or substances giving off smell.

- Clean Air Plan - is prepared when harmful effects are expected by air pollution within the whole or parts of a heavily polluted area. It shall contain:

  1) the kind and extent of the air pollution established and expected to cause harmful effects on the environment;
  2) the findings as to the causes of the air pollution; and
  3) measures to diminish the air pollution and precautionary measures.

- Combustible Liquids - are substances with a flash point and which are neither solid nor viscous, which have a steam pressure of 3 kg/m^2 or less at 50 ^{o} C, and which belong to one of the following groups:

  1) Group A: liquids with a flash point not exceeding 100 ^{o} C, which do not have the properties of Group B in regard to water solubility, namely:

     Hazard Class I : liquids with a flash point below 21 ^{o} C;
     Hazard Class II : liquids with a flash point between 21 ^{o} C and 55 ^{o} C;
     Hazard Class III : liquids with a flash point between 55 ^{o} C and 100 ^{o} C.

  2) Group B: liquids with a flash point below 21 ^{o} C which are soluble in water in any proportion at 15 ^{o} C, or their combustible liquid components which are soluble in water in any proportion at 15 ^{o} C.

- Creep Distance - is the horizontal distance measured from the point of discharge as traversed by a vapor/air mixture heavier than air. If the creep distance is interrupted by an immovable, impermeable obstruction made of non-combustible materials, the distance along this obstruction is then added to the length of the creep distance.

- Emissions - are the air pollution, noise, vibrations, light, heat, rays and similar phenomena emitted from an installation.

- Harmful Effects on the Environment - are intromissions which, according to their nature, bulk or duration, may by their nature cause dangers, significant disadvantages or substantial annoyances to the general public or the neighborhood.

- Heavily Polluted Areas - are areas in which air pollutants arise or are to be expected, which because of the frequency of their appearance, their high degree of concentration, or the danger of the combined effects of different air pollutions may cause harmful effects on the environment to a particular degree. The heavily polluted areas are designated by law ordinance of the Land Governments.

- Intromissions - includes air pollution, noise, vibrations, light, heat, rays and similar interferences with the environment which have an effect on human beings as well as animals, plants or other things.

- Maximum Permissible Storage Quantities - are regulated under Technical Regulations for Combustible Liquids and are set according to location of storage facility, type of container, and hazard class of liquid.

- Movable Tanks - are containers used for storage and transportation of greater volume than movable receptacles.

- Movable Receptacles - are storage and transportation containers (such as drums, barrels, cans, and bottles) designed for having their location changed and having a capacity not exceeding:

  - 445 liters for liquids of Group A, Hazard Class I and II (rupture-proof);
  - 780 liters for liquids of Group B (rupture-proof); and
  - 2.2 liters for non-rupture-proof movable receptacles.

- Pipelines Within Operation Areas - are pipelines within operating areas, including piping and distribution stations, for the transportation of combustible liquids, insofar as the pipelines do not exceed the limits of the operation area or do not pertain to a storage facility for combustible liquids.

- Standard of Technology - is such a status of development of progress procedures, devices or operating methods as appears to assure the practical effectiveness of a measure designed to limit emissions. In determining the standard of technology, comparable procedures, devices and operating methods that have been successfully tried in operations shall in particular be utilized.

- Stationary Tanks - are storage tanks designed not to be moved during service.

- Substances Deleterious to Water - are crude oils, benzines (gasolines), diesel fuels and fuel oils, acids, and other solid, liquid, or gaseous substances likely to contaminate waters or otherwise adversely affect them by alteration of their qualities. (Such other substances shall be determined by the Federal Government by way of a statutory decree subject to the approval of the Bundesrat.)

- Substances Hazardous to Water - are solid, liquid and gaseous substances, in particular:

  - acids, lyes;
  - alcalic metals, mineral and tar oils and their products;
  - fluid and water soluble hydrocarbons.

  which can alterate the physical, chemical, or biological characteristics of waters in a detrimental way.

- Uses of Water - includes the introduction or discharge of matter into surface waters, introduction and discharge of substances into coastal waters, the discharge of matter into underground water, or any measures which are likely to cause , either permanently or to a not merely insignificant degree, harmful changes in the physical, chemical or biological constitution of water.

COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
7-1. Determine actions or changes since previous assessment of POL Management.	Review previous POL Management assessment to determine if non-compliance assessment issues have been resolved. (1)(2)
...	...
7-2. The installation should maintain a current file of FRG and State regulations, laws, and ordinances pertaining to POL management.	Establish that a file which contains applicable laws, regulations, and ordinances is maintained at the installation and includes the following: (1) (2) - Wasserhaushaltsgesetz (WHG) Federal Water Act; - Abfallgesetz (AbfG) Federal Waste Disposal Law; - Altoelverordnung (AltoelV) Federal Ordinance on Waste Oil; - Verordnung ueber brennbare Fluessigkeiten (VbF) Federal Ordinance on Combustible Liquids; - Technische Richtlinien fuer brennbare Fluessigkeiten (TRbF) Technical Regulations for Combustible Liquids; - 100 and 200 general safety; - 112 gas stations; - 141; - 142 tank container; - 143 moveable containers; - 211; - 212; - 220 tanks; - 221; - Landeswassergesetz (LWG) State Water Act; - State Ordinances on Storage of Water Endangering Liquids; - VAwSF - Hessen; - VAwS - Nordrhein-Westfalen; - VLwF - Baden Wurtenberg; - Local statutes (including waste, POL surface drainage, etc.).
...	...
7-3. Petroleum products which are not utilized for their intended purpose should be reclaimed, recovered, and disposed of as waste and stored properly in accordance with the Federal Water Act and state or local ordinances (Federal Waste Disposal Law (AbfG) and applicable ordinances).	Check accumulation points to confirm that containers are properly marked and in good condition. (2)(10) Check vehicle hobby shops to verify that used crankcase oils/lubricants are being collected. Determine that used petroleum products are collected, segregated, and disposed of according to the Federal; Waste Disposal Law and applicable ordinances. Check hazardous waste protocols for applicable regulations. Check if accumulation points constructed or storage sites used for POL products comply with proper guidelines (see 7-2) and avoid POL penetration into the ground.

COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
...	...
7-4. Appropriate waste oils may be recycled but not mixed (AltoelV).	Check that appropriate waste oil types are recycled: (2) - motor and transmission oil; - hydraulic, turbine oil. (Other waste oil can be recycled if free of hazardous substances that aggravate the recycling process.) Verify that motor and transmission oils are never mixed with hydraulic, and turbine oils.
...	...
7-5. Recyclable oils must not contain more than 20 mg PCB/kg and 2 grams of total halogens (AltoelV).	Verify oils designated for recycling do not exceed standards for hazardous concentrates. (2)
...	...
7-6. Synthetic oils containing PCBs must be collected, transported, and disposed separately from other waste oils (AltoelV).	Verify that synthetic oil containing PCB is not mixed with other waste oil. (2)
...	...
7-7. Manifests for the transportation and disposal of waste oils must be kept (AbfG and State ordinances).	Verify that copies of the manifests are maintained. (1)(2) (See Hazardous Waste Section.)
...	...
7-8. Spills of petroleum products may have to be reported to the host nation water authorities by appropriate procedures (State Water Act).	Follow procedures outlined in the "Installation Spill Response Plan." (2) Determine if spills have occurred by interviewing DEH Fire Chief. (5) Examine records in spill incident files to verify that proper notification has occurred and that follow up reports were prepared as required.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
7-9. Drainage water which is determined to contain petroleum products in harmful quantities must be treated prior to discharge to meet applicable water quality standards (Federal Water Act, WHG).	Determine if discharges containing harmful quantities of petroleum products were properly treated, recovered, or disposed of by inspecting records and interviewing personnel. (1)(2)(3)
...	...
7-10. Wash water and fuel sludges resulting from periodic tank cleansing should not be discharged to surface waters, sewers, or to the ground; discharge of such materials must comply with all FRG and local environmental regulations.	Confirm that residues from tank cleaning operations are disposed of properly: (1)(2)(3) - wash water which does not contain detergent; - wash water is discharged over an oil/water separator into the sewer; - sludges are pumped out periodically and disposed of as a special waste. Confirm that tank bottom residues were disposed according to the Federal Waste Disposal Law (AbfG) and applicable ordinances.
...	...
7-11. Above ground storage tanks should be provided with a catch basin if the capacity exceeds 300 liters (VbF).	Inspect above ground storage tanks with capacity over 300 liters to verify that adequate containment is provided. This includes portable tanks and other containers that have been stored at a site for an extended period. (10)
...	...
7-12. Above ground storage is prohibited within Zone IIIB of water protection areas if the capacity of the tank exceeds 100,000 liters (State Ordinance on Storage of Water Endangering Substances).	Verify that tanks with capacities over 100,000 liters are not located within Zone IIIB areas. (1)(10)
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
7-13. Installation of Underground Storage Tanks with a capacity above 40,000 liters is prohibited in Zone IIIA of water protection areas (State Ordinances on Storage of Water Endangering Substances).	Verify all tanks with a capacity greater than 40,000 liters are not located in Zone IIIA of water protection areas. (1)(2)
...	...
7-14. Storage is prohibited within Zone II of water protection areas (State Ordinance on Storage of Water Endangering Substances).	Verify that no POL storage occurs in Zone II. (1)(2)
...	...
7-15. Above ground storage facilities must be inspected every 5 years. Inspection by Technischer Ueber- wachungsverein (TUEV) is recommended (State Ordinance on Water Endangering Substances).	Determine that all tanks are inspected and deficiencies corrected. (1)(2)(10)
...	...
7-16. Underground tanks must be inspected in accordance with number 15 and in water protection areas every two and a half years (State Ordinance on Water Endangering Substances).	Verify that inspections are being done every two and a half (2 1/2) years in water protection areas. (1)(2)(10)
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
7-17. Building, installation, maintenance, repair, or cleaning of POL facilities must be done by specialized firms or by qualified in-house personnel (Federal Water Act (WHG), paragraph (article) 19(i)(1)).	Verify that all work done on POL facilities is done by qualified personnel or contractor. (1)(2)(10)
...	...
7-18. Storage facilities must be inspected: prior to start-up; following substantial change in the storage facility; prior to reactivation of a plant which has been out of use for more than one year; inspection is ordered; to prevent possible water pollution; and after a plant has been closed down (Federal Water Act (WHG), paragraph (article) 19(i)(2)).	Note any occurrences that would require an inspection. (2)(10) Verify that the inspections have been performed.
...	...
7-19. Filling and draining of tanks at POL facilities must be watched closely and safety installations and equipment must be inspected prior to the commencement of the work (Federal Water Act (WHG), paragraph (article) 19(k)).	Interview personnel to determine that they know the duties to be performed during filling and draining. (10) Check that safety equipment is in good condition.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-20. Installations with underground storage tanks containing petroleum are subject to leak detection, prevention, and correction requirements (TRbF 106).	Examine records and the area to confirm the following: (1)(2)(10) - maintenance of a leak detection system for each tank or group of tanks; - inventory control system in conjunction with a tank; - maintenance of monitoring or tank testing records; - procedure for taking corrective action when required; - host nation response procedures.
...	...
7-21. Installations may not install any new underground tank unless cathodically protected or designed to prevent any release (TRbF 106).	Examine new steel underground tanks to determine that they are cathodically protected or designed to prevent release. (1)(2) Examine that tank and safety devices are approved types.
...	...
7-22. Installations with underground tanks taken out of operation are required to remove the tanks or clean and fill them with sand or other solid materials (TRbF 180, 280).	Verify that any UST taken out of operation has been properly filled or removed from the ground. (2)(10)
...	...
7-23. Buried piping at installations should have a protective wrapping and coating and should be cathodically protected if soil conditions warrant (TRbF 131, 231, and TM 5-343, Ch. 9).	Check records and interview personnel to confirm buried piping is properly protected from corrosion. (1)(2) If cathodic protection methods are used, insure that they are appropriate and applied correctly. Verify that detected leaks and failures are being reported.
...	...
7-24. All above- and below- ground fuel piping systems should be regularly examined, and any suspected leaks should be investigated immediately (TRbF 131, 231, and TM 5-343, Ch. 9).	Review personnel and interview appropriate personnel to verify that regular inspections have been conducted. (1)(2)(10) Inspect above ground items such as flange joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces and determine that their general condition is assessed on a regular basis. Examine records to verify that confirmed leaks have been reported and leaking pipes are either repaired or replaced.

COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
...	...
7-25. Off-installation pipelines should be inspected regularly (TRbF 131, 231).	Examine records to confirm inspections are performed. (1)(2)(10) Determine by interviewing appropriate personnel that detected leaks and failures have been reported and leaking pipes have been repaired or replaced. (3)
...	...
7-26. Combustible fluids at airfields should not be stored in areas accessible to public traffic or in plane taxiing areas.	Check that public traffic is banned from areas of storage and only authorized vehicles are allowed access to area. (2)(4)(10) Check that storage tanks are not near taxi lanes used by aircraft.
...	...
7-27. Combustible fluids should not be stored at airfields in surface tanks in amounts exceeding 30,000 lbs.	Check that capacity of surface tanks is less than 30,000 lbs. (2)(10)
...	...
7-28. New oil containers must have proper labeling to ensure that proper disposal takes place after use (Altoel V).	Examine new oil cans, transmission fluid cans for labeling which states "When this oil becomes waste, it must be disposed of at a waste oil collection facility. Mixing with incompatible oils is prohibited." (2)(10)
...	...
7-29. Installation of Underground Storage Tanks with a capacity above 40,000 liters is prohibited in Zone IIIA of water protection areas (State Ordinances on Storage of Water Endangering Liquids).	Verify all tanks with a capacity greater than 40,000 liters are not located in Zone IIIA of water protection areas. (1)(2)(10)
...	...
7-30. Underground tanks must be inspected in accordance with paragraph (e)(5) in water protection areas every two years.	Verify that inspections are being done every two years in water protection areas. (1)(2)(10)
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Germain	
REGULATORY **REQUIREMENTS:**	**REVIEWER CHECKS:**

Section VIII

Solid Waste Management

Section VIII

Solid Waste Management

A. Federal Regulations

The most important waste disposal regulation relates to the law concerning the avoidance and disposal of waste (Waste Law, "Abfallgesetz", abbreviated: AbfG). With its wide definition of waste, all moveable physical objects in solid, liquid or gaseous state are included. All possible kinds of waste from household and industrial waste to hazardous waste are covered. The AbfG now includes waste oil as well, thus superseding the special law on waste oil ("Altoelgesetz"). Animal bodies and radioactive substances are not covered.

The AbfG is concerned not only with the disposal of waste, but also with its avoidance. In its main features it imposes and specifies the obligation to dispose of waste, lays out the general standards how and in what facilities to dispose, and regulates the licensing of waste disposal installations and corporations engaged in the collection and transportation of waste.

In accordance with authorizations in the AbfG, the Federal Government has enacted various ordinances in the area of waste disposal. Among them are:

- the ordinance on record keeping concerning wastes (Abfallnachweisverordnung);
- the ordinance on collection and transportation of wastes (Abfallbefoerderungsverordnung);
- the ordinance on the import of waste (Abfalleinfuhrverordnung);
- the ordinance on the categorization of certain industrial wastes;
- the ordinance on waste disposal agents for certain operations.

It should be noted that the AbfG does not give specific instructions regarding actual standards. Rather, it gives verbally described general standards.

The AbfG contains authorization for the federal Government to enact a technical Instruction on Waste Disposal that would parallel the TA Luft and TA Laerm and could specify technical requirements. This important regulation, however, is still in preparation.

B. State / Local Legislation

In addition to expressed authorization in the AbfG for the states to enact ordinances (e.g. in Section 4 IV AbfG, authorizing the states to allow exemptions from the general duty that waste be disposed only in special installations), certain issues of minor importance that are not covered or preempted by federal legislation remain for the states to legislate.

State law determines which local authority or corporation is in charge of the disposal, for which authorities and agencies administer the waste law; it specifies regional coordination, licensing procedures and imposes requirements concerning the operation of waste disposal facilities as far as personnel and other operational matters go, excluding, however, matters of emissions.

Being charged by state and federal law with the duty of waste disposal, local public bodies, such as counties and larger cities, can issue by-laws regarding the duty to use its disposal facilities and the terms of handing over waste to the disposal system.

I. Waste Avoidance and Recycling

The new AbfG states that avoidance and recycling are equally important to disposal. The Federal Government is authorized to issue ordinances aimed at the avoidance of wastes. However, none have been enacted as of now, the Federal Government relying on voluntary restraint agreements with the industry. The obligation under the BImSchG to operate installations so that wastes are avoided through low-waste processes and recycling is another application of the principle.

All wastes have to be collected, transported, treated and stored so that possibilities of waste recycling can be utilized. Additionally, the Federal Government is authorized to issue ordinances regarding the recycling of wastes.

II. General Principles of Waste Disposal

The AbfG requires that wastes be disposed of in a way that the welfare of the general public is not impaired, particularly that:

- human health is not threatened and human well-being is not impaired;
- useful animals, birds, game and fish are not threatened;
- harmful environmental effects are not brought about by air pollution or noise;
- concerns of nature protection, landscape conservation and urban construction are safeguarded; or

- public safety and order are not otherwise threatened or disturbed.

The goals of regional development and planning must be heeded.

Further requirements shall be laid down for the disposal of waste from commercial or other economic enterprises or public facilities, which by virtue of their nature, condition or quantity are particularly hazardous to health, air and water quality, are explosive or flammable, or contain or produce pathogens of contagious diseases. The Federal Government has determined, in an ordinance listing a whole array of industrial refuse, the kind of wastes that are covered by this provision.

Since the TA Abfall has not yet been enacted and no more precise standards are available, the actual requirements will depend on a case study with the help of experts whether the public welfare is impaired.

III. Duty of Disposal

Generally, the municipalities and local bodies are in charge of disposing the waste that accrues in their area. The competent bodies are determined by state law. The public body may delegate its duty to third parties or may hire contractors to execute the duty. The owner of the waste has the obligation to cede it to the body in charge. The body must take all household waste. It may exclude waste that cannot be disposed of in the manner of household waste disposal. In this case, the duty remains with the owner. In the course of his disposal the owner may hand over industrial wastes as specified in the ordinance, for collection or transport only to persons which are licensed to do that and only after receiving a declaration by the operator of a waste disposal installation that he agrees to accept the waste. All wastes may only be treated, stored and deposited in installations for this purpose.

C. Key Compliance Definitions

- Acceptance Area - is the area on the site where the wastes are accepted into the waste management facility.

- Containers - are movable open or closed enclosures such as casks, reusable containers, drums or comparable vessels.

- Containments - are permanent open or closed enclosures such as bunkers or tanks.

- Disposal Above Ground - solid, unreactive, immobile inorganic wastes can be disposed of at above ground disposal sites. It is sometimes necessary to treat

the wastes before disposal, e.g. by dewatering, conditioning, inertization.

- Disposal of Refuse - collecting, transporting, treating, storing, and depositing of refuse.

- Operations Log - contains waste management declarations for the wastes to be disposed of at the facility, the facility's declaration log for the accepted wastes, the in-plant routing tickets, documentation in the event of non-agreement of waste deliveries, personnel and persons in positions of authority, and unusual events and significant disturbances of normal operation such as accidents, fires, machinery and equipment breakdowns.

- Pyrolysis - is a method of waste disposal for those wastes that do not decompose within a reasonable time, mainly for organic and hazardous wastes, and liquids that cannot be disposed of otherwise. This is done in a high-temperature oven converting all of the organic materials to a less hazardous form and leaving an inorganic residue.

- Receiving Area - is the area in which the wastes are delivered, weighed and identified.

- Refuse - moveable matter the owner wants to dispose of or the proper disposal of which is imperative for safeguarding the welfare of the general public.

- Residues - are recyclable residue materials as well as the wastes to be treated or deposited that are produced during waste treatment.

- Solid Waste - removable substances, which the owner wants to get rid of or the orderly elimination of which is indicted to maintain public well-being and in particular environment protection.

- Storage Area - is the area in which wastes, treatment chemicals, supplies and residues are stored for a limited time period.

- Treatment Area - is the area in which the equipment for waste treatment is located.

- Underground Disposal - high-toxicity, non-degradable wastes that cannot be pyrolyzed as well as wastes containing highly soluble substances, which in ground-level disposal facilities would pollute the groundwater, should be disposed of underground to provide long-term isolation from the biosphere. The basic methods of underground disposal are:

  - injection of sewage and other liquid wastes into aquifiers;
  - injection of pumpable/dumpable wastes in caverns, possibly with situ consolidation (particularly in caverns in salt structures);
  - disposal of solid wastes in mines in containers or as backfill.

- Waste - means the movable property of which the owner wishes to dispose of or the proper management of which is necessary in the public interest, especially for the protection of the environment.

- Waste Disposal (Abfallentsorgung) - includes the recovery of substances or energy from wastes and the deposit of wastes, and the collection, transport, treatment and storage necessary to do that.

- Waste Management - includes the recovery or production of materials or energy from waste (re-use and recycling of waste), depositing of waste as well as the necessary collection, transportation, treatment and storage.

- Waste Management Officer - shall supervise the handling of wastes from their generation or delivery to their final disposal. He must also supervise compliance with the statuatory ordinances governing waste management and instruct the staff on the harmful environmental impact that may be caused by the waste generated or managed at the site.

- Waste Management Operator - shall appoint the Waste Management Officer in writing and support the Waste Management Officer in the accomplishment of his tasks and in particular, to the extent that is necessary for the accomplishment of his tasks, place at his disposal assistant staff, premises, facilities. equipment, etc.

- Waste Management Plan - is drawn up, for their respective region, by the state ot local authority designating suitable sites for waste management facilities. The details laid down in the waste management plans may be considered binding on parties responsible for waste management.

- Work Area - is the area on the site in which the wastes are sampled or otherwise openly handled.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-1. Installations must have current German regulations available	Determine if the installation has the following ordinances available: (1) - Federal Waste Law (Abfallgesetz) (AbfG); - Federal Ordinance on Waste Transportation (Abfallbefoerderungs Verordnung) (AbfBefV); - Code of Practice for Wrecked Automobiles (Autowrack-Merkblatt).
...	...
8-2. Installations located in the state of Hessen must also have the following ordinance.	Determine if the installation has copies of the following: (2) - Waste Act for the State of Hessen (Hessisches Abfallgesetz) (HAbfG).
...	...
8-3. Installations located in the state of Rhineland Pfalz must also have the following ordinance.	Determine if the installation has copies of the following: (1) - State Waste Act (Landesabfallgesetz) (LAbfG).
...	...
8-4. Installations located in the state of Rheinland Pfalz must obtain a permit from the competent authority if they operate a disposal area/plant or if they have received restriction/limitation notices for certain waste categories (LAbfG).	Determine if the installation has received permits or notices from the competent authority. Review the permit or notice, comparing it to the waste operations of the installation. (1)
...	...
8-5. Installations located in Rheinland Pfalz must separate waste that is poisonous or waste that requires special handling from domestic waste (LAbfG).	Review installation waste management practices for separation. Determine if the installation is separating poisonous waste and waste that requires special handling from domestic waste. (1)
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-6. Installations must manage waste in the following manner: - minimize the amount of waste generated; - re-use or recycle waste generated; - properly dispose of waste at permitted facilities (AbfG).	Review the installation waste management program determine if it provides for the avoidance, re-use or recycling, and proper disposal of waste. (1) Determine if re-use and recycling is given priority in waste management over all other forms of waste disposal.
...	...
8-7. Installations which generate solid waste must ensure that it is disposed of in a manner that will not impair the well-being of the public (AbfG).	Determine of the installation disposes of waste in a manner that will not cause any of the following: (1) - endanger human health and impair human welfare; - endanger domestic cattle, birds, game, and fish; - affect water, soil, or useful plants in an adverse manner; - disregard the protection of the natural or built environment; - endanger public safety; or - ensure disposal slips have been filled out.
...	...
8-8. Installations must collect, transport, and dispose of their waste through licensed disposal firms (AbfG).	Determine if the installation is using licensed collection, transport, and disposal firms for solid waste. (1) Ensure that disposal slips were signed by the oil disposal site and were reviewed by the installation to verify proper fuel disposal by the licensed disposal firm (Chamber of Custody Verification).
...	...
8-9. Installations which transport waste in military vehicles directly to the waste disposal facility must also have a permit from the disposal facility (AbfG).	Determine if the installation transports waste in military vehicles, if so, review records for waste disposal permits. (1)
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
8-10. Automobiles without a license, which are parked somewhere longer than four weeks, with no plans for reuse for its original purpose or which will not be treated in a waste treatment plant are considered waste and should be disposed of properly (AbfG, Autowrack-Merkblatt).	Determine if the installation has any automobiles without a license plate, parked somewhere for longer than four weeks. (14) Determine if the automobiles have been purged before disposal of all fluids. Confirm that the on-base or off-base car salvage yard is licensed.
...	...
8-11. Installations which produce waste that is hazardous must properly label it. The waste must also be collected and transported separately from other wastes (See Hazardous Waste Protocols for more detail) (AbfG).	Determine if the installation properly labels hazardous waste and transports it separately. (1)
...	...
8-12. Installations must follow any state or local ordinances regarding the collection, transportation, or disposal of waste (HAbfG, LAbfG).	Review State and local requirements for the installation. (14) Determine of proper management practices are being accomplished.
...	...
8-13. Installations located in the state of Rheinland Pfalz producing waste must obtain a permit from the competent authority (LAbfG).	Determine if the installation has received permits from the competent authority. Review the permit, comparing it to the waste operations of the installation. (1)
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-14. Installation located in Rheinland Pfalz which dispose of agricultural or horticultural waste through burning must follow the guidelines of the First State Regulation for the Implementation of the Waste Disposal Act.	Determine if the installation uses burning as a method to clear open areas. (1) If the area is more then three cubic meters, determine if the installation has given the local police authorities the following information: - the type and quantity of waste; - the location of the site. If a report was made determine if the burning took place at least three days after the report was sent and no more than twenty days. Ensure that the burning was done according to Rheinland Pfalz and Local Ordinances: - 100 meters away from woods, moors and heaths; - 50 meters away from buildings and traffic routes; - 10 meters away from other field edges, or cultivation; - mixing of other wastes with plant wastes is prohibited; - plants and plant parts should be placed into piles and separated by tilled rows; - burning must not take place between 1800 and 800 hours or on Sundays or Holidays; - burning must be continuously supervised by someone 18 or older: - the burned area must be completely extinguished before leaving the area.
...	...
8-15. BADEN-WUERRTTEMBERG Vegetable waste outside of licensed waste disposal installations (Bayern) may be disposed of by composting or burning (Section 4 IV AbfG).	Check that vegetable wastes, including forest wastes, which accrue on land used for agriculture, forestry and gardening are disposed of by leaving them lying, plowing them under or other ways of letting them rot provided that no nuisance results through odor. (2) (NOTE: Outside of inhabited areas these wastes may also be burnt if no other way of disposal is suitable. Various safety precautions and time restrictions apply and ecological concerns have to be heeded.)

Section IX

Special Programs

Section IX

Special Programs

A. Federal Legislation

Currently the Special Pollutants Section contains protocols for asbestos, PCBs, PCTs and vinyl chlorides.

The primary sources of provisions concerning asbestos are found in the TRGS (Technische Richtlinien fuer Gefahrstaffe). These provisions concern determination if asbestos is present and the concentration levels that are present; record keeping and notification requirements; and removal and disposal techniques. The majority of requirements are found in TRGS 517 "Technical Standards for Hazardous Materials - Asbestos" and TRgA 124 "Release Level for Asbestos".

B. State/Local Requirements

Currently there are no known State requirements concerning asbestos, PCBs, PCTs, or vinyl chlorides.

C. Key Compliance Definitions

- Asbestos-containing Hazardous Materials - are asbestos, asbestos-containing substances and preparations, and asbestos containing products, during the use of which asbestos-containing dust is produced or released.

- Asbestos-containing Preparations - are mixtures, to which asbestos is selectively added, e.g. asbestos kieselgur mixtures for producing filter beds.

- Asbestos-containing Products - are made from asbestos-containing substances or preparations, e.g. asbestos-containing brake linings.

- Asbestos-containing Substances - are mixtures containing asbestos as a contaminant, e.g. asbestos-containing talcum powder.

- Facility for the Management of Waste Containing Special Pollutants - includes the contiguous land and any structure, other appurtenances or improvements on the land which are used for treating, storing or disposing of waste containing special pollutants. Such a facility may contain several units for the treatment, storage, or disposal of such wastes.

- Handling or Use of Asbestos - is the production, consumption, storage, keeping, treatment, processing, filling, refilling, mixing, destruction, and transport inside the plant of asbestos within the meaning of Article 3 No. 5 and 8 of the Law of Chemicals. Use also includes the rendering of a service, such as cleaning, maintenance, rehabilitation, and demolition work as well as the disposal of residual substances.

- Technical Guiding Concentration - is the concentration of a substance in the air in a work area which can be reached according to the level of technology. The employer must take care that the concentration stays below this level. Since the risk of health impairment cannot be entirely precluded if the technical guiding concentration level is observed, concentrations must be aimed at, by continued improvements in the technical conditions and technical protective measures, which are as much below the technical guiding concentration as possible.

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
9-1. Determine actions or changes since previous review of Special Pollutants (Asbestos, PCBs, PCTs, and VC).	Examine previous Special Pollutants review to determine if non-compliance review issues have been resolved. (2)
...	...
9-2. Copies of all applicable regulations, directives, and guidance documents on Special Pollutants should be maintained at the installation.	Determine that copies of the following regulations are maintained and kept current on the installation: (1)(2)(3) - Gefahrstoffverordnung (GefStoffV) Decree on Hazardous Materials; - Technische Richtlinien fuer Gefahrstoffe (TRGS) 517, Technical Standards for Hazardous Materials, "Asbestos;" - TRGS 100, (Initiation Threshold for Hazardous Substances); - TRGS 102 (Technical Guiding concentrations for Hazardous Work Materials).
...	...
9-3. The installation may also be required to have other guidance documents on file.	Determine whether the installation has copies of the following: (2) - TRGS 900 (Maximum concentrations in work areas and biological tolerance limits for work materials); - TRGS 400 (Requirements for measuring points for the performance of measurements of hazardous substances in the air in the work area); - TRGS 402 (Ascertainment and evaluation of the concentration of hazardous substances in the air in the work area); - TRGS 403 (Evaluation of mixtures of substances in the air in the work area); - TRGS 507 (Surface treatment in rooms and containers); - TRGS 100 (Initiation thresholds for hazardous substances); - TRgA 601 (Substitutes for asbestos); - TRgA 124 (release level for asbestos); - TRgA 560 (Air recirculation when handling carcinogenic work materials); - Standard Publication number ZH 1/140 (Safety regulations for air pollution prevention in work areas); - ZH 1/134 (Breathing protection instruction sheet); - ZH 1/606 (List of tested respiratory protection devices); - ZH 1/120.30 (Procedure for the determination of Chrysotile Asbestos and other asbestos work); - ZH 1/120.31 (Procedure for the determination of fibers intruding the lungs); - ZH 1/512 (Processing of asbestos-cement products); - "Spray asbestos and other asbestos products with a weak bond" edited by the Institut fur Bautechnik Berlin; - ZH 1/616 (Safety rules for dust-emitting hand-operated machines and equipment for processing asbestos-cement products.

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-3. (continued)	- Federal Institute for Industrial Safety/Workers Protection (Bundesanstalt fuer Arbeitsschutz) GA 26 (Rehabilitation of asbestos-containing component parts); - Federal Institute for Industrial Safety/Workers Protection (Bundesanstalt fuer Arbeitsschutz) S 25 (Safety with regard to the use of asbestos/list of practical guidelines); - Unfall verhuetungs-vorschriften (UVV General Regulations)VBG 1; - VBG 119 (UVV Health-endangering Mineral Dust); - VBG 126 (UVV Waste Disposal).
ASBESTOS	
9-4. Installations that handle, produce, contain or use asbestos or asbestos containing materials must comply with certain regulations (TRGS 517, number 2.1).	Determine whether the installation handles, produces, contains or uses any form of asbestos including: (1)(2)(24) - actinolite; - amosite; - anthophyllite; - chrysotile; - crocodolite; - tremolite. Determine whether the installation performs any of the following activities: - treatment of asbestos-cement pipes; - treatment of brake and clutch linings; - demolition of structures with fire protection insulation; - dismantling or refurbishing vehicles; - stripping insulation; - stripping partitions, floor coverings, etc; - cleaning and removing roof coverings; - rehabilitation work.
...	...
9-5. Installations with asbestos or asbestos containing materials must determine if the content of asbestos in the work area meets the specifications for classification as a hazardous carcinogenic substance (TRGS 517, number 1.3).	Determine whether the installation has asbestos or asbestos containing materials in any of the following: (24) - a mass content in the hazardous material greater than or equal to 1% (Class II/ Highly Hazardous); - a mass content in the hazardous material less than 1% but greater than 0.1% (Class III/hazardous); - less than 0.1% and initiation threshold can be exceeded (Class III regulations apply); or - asbestos occurring as a fine dust during handling.
...	...

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
9-6. Installations with asbestos or asbestos containing materials that meet the criteria for hazardous carcinogenic substances must keep the concentration of such substances in the air at or below specified levels (TRGS 517, number 2.3.2 - 2.3.4).	Determine whether the installation is in compliance with the Technische Richtkonzentration (TRK)/technical guiding concentration for the air in the work area according to the applicable level for each substance specified in ZH 1/120.31. (See APPENDIX IX-1.) (4)(24) Verify that measuring certificates of the monitoring of the TRK are prepared and kept on file. Determine whether the installation has any asbestos or asbestos-containing substances that have a concentration less than 0.1% and that have exceeded the initiation threshold according to TRG 402.
...	...
9-7. Installations that utilize off-base companies for the removal of asbestos-containing materials must contract with firms that are knowledgeable and familiar with the hazards and proper procedures required for safe removal, hardening, and coating of asbestos-containing materials (TRGS 517, number 7.5, paragraph 2).	Confirm that appropriate firms are contracted. (24) The installation must ensure that the officer responsible for writing contracts is aware of and knowledgeable of the FRG, State, and local regulations that must be followed when off-base companies are utilized for asbestos removal.
...	...

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-8. If the installation performs in-house removal of asbestos, Federal, State and local laws and regulations must be observed. If the concentration of the asbestos or the asbestos-containing substance in the air in the work area exceeds the initiation threshold, additional measures for health protection are required (TRGS 517, number 5.2).	Determine if the installation engages in any of the activities listed in Table 1 of 5.2.3 of the most current edition of TRGS 517, which lists methods and activities where initiation threshold is expected to be exceeded. (24) Determine whether the initiation threshold is exceeded according to the TRK value listed in TRG 402. (1)(2) Determine whether during control measurements the mean values during a shift are smaller than 1/4 of the TRK value. (1)(2) Example: Measured value: 2 million fibers per cubic meter (crocodolite), except duration of exposure 30 minutes, rated as a 1-hour exposure. Calculation: 2 million : 8 = 250,000 fibers/m3. Result: the initiation threshold for crocodolite is exceeded. The initiation threshold is considered to be exceeded if the TRK value is not being permanently observed. (1)(2) If the duration of the exposure is shorter than the length of the shift, the measured values of the exposure measurements are to be converted into the shift length. Exposures of less than 1 hour are treated like a 1 hour exposure. (1)(2)
...	...
9-9. Certain notification procedures are required whenever handling of friable asbestos-containing hazardous materials occurs (TRGS 517, number 3).	Determine whether an immediate notification was given to: (4)(24) - the responsible local, county or state authority; - institution providing statutory accident insurance (carbon copy); - affected employees (or to works council if applicable).

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
9-9. (continued)	(NOTE: In the case of repetitive work with the same equipment under the same working conditions when handling asbestos-cement products with a specific gravity of less than 1 g/cm3, only a one-time notification is required.) Examine a copy of the notification for the following information: - property and quantity of the asbestos-containing hazardous material; - the manufacturing method or the work to be performed; - the protective measures to be used; - the number of personnel who handle asbestos-containing hazardous materials; - the manufactured products; - size of the surface area in rehabilitation work.
...	...
9-10. Installations may be exempt from the notification of requirements and Article 18 (duty of supervision) and Article 28 (medical checkup) of the Gef StoffV under certain conditions (TRGS 517, number 3.4).	Determine whether the installation has used methods and equipment approved by authorities or trade associations to stay below the initiation threshold. (4)(24) (Note: this exemption does not apply to demolition and rehabilitation work since the initiation threshold is usually exceeded during this type of activity.) Check the facility to verify that the approval note is posted at the place of work. (4)(24)
...	...
9-11. Installations are required to evaluate planned work activities for the possibility of the use and handling of asbestos-containing hazardous materials and follow certain precautionary procedures (TRGS 517, number 5.1, paragraph 1).	Determine whether the installation has addressed the possibility of asbestos-containing hazardous material handling and use prior to beginning any planned work. (1)(2) Determine whether the installation has explored the use of alternate materials in TRgA 601 or the "Survey Of Substitutes For Asbestos And Asbestos-Containing Products Available On The Market." (2) Confirm that all necessary information concerning the possible hazards involved in the use or handling of the asbestos-containing hazardous materials has been reviewed (including information from the producer and/or importer) prior to beginning work. (1)(2) Verify that all possible hazards from handling or using asbestos-containing hazardous materials are addressed and appropriate measures planned to avert any possible hazards arising from the use or handling prior to beginning planned work or hiring personnel for the planned work. (1)(2)(3)
...	...

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-12. Installations are required to determine the level of asbestos dust, asbestos containing fine dust in the air in the work area, as well as the concentration of other hazardous materials (TRGS 517, number 5.2).	Verify that the installation has determined whether the technical guiding concentration (TRK) has been reached and/or whether the initiation threshold has been exceeded for any activity that could introduce asbestos dust or asbestos-containing fine dust. (1)(2)(3) Confirm that the installation has assessed and evaluated the concentration of other hazardous materials in the air in the work place pursuant to TRGS 403. (1)(2)(3) Verify that if measurements are assigned, the measurements are taken only from those external measuring points specified in the catalog published by the Federal Minister of Labor in the Bundesarbeitsblatt. Confirm that the records of the measurements are maintained at the installation for 30 years. (1)(2)(3)
...	...
9-13. Installations may be required to prepare operating instructions and provide training to personnel based upon these instructions in accordance with Article 20, GefStoffV (TRGS 517, number 5.3).	Verify that personnel handling asbestos-containing hazardous materials receive instructions on proper operating procedures: (2)(3) - prior to beginning work; - at least yearly thereafter. Confirm that the instructions include: (2)(3) - proper work methods; - potential hazards; - work schedule for demolition work; - proper handling of protective clothing and equipment; - disposal methods; - proper emergency procedures.
...	...
9-14. Installations may be required to appoint a coordinator who is authorized to give instructions to contractors and/or their employees in order to ensure potential hazards or endangerment of personnel is avoided (TRGS 517, number 5.4, paragraph 1).	Verify that a authorized coordinator has been assigned for each planned undertaking. (2)(24) Confirm that the coordinator has informed all personnel and their employers working in rooms containing asbestos or asbestos containing materials or doing follow-up work after the removal of such substances of the possible hazards these substances present and the appropriate protective measures, as specified in TRGS 517, to take to avoid contamination.
...	...

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-15. Installations may also be required to coordinate with any other contractors or workers in the same area to avoid any possible contact with any asbestos containing hazardous materials (TRGS 517, number 5.4, paragraph 3).	Verify that any other personnel working in the affected area are informed of the hazards of the substances and steps are taken to avoid concurrent work in the same area at the same time. (2)(24)
...	...
9-16. Prior to beginning work, installations are required to appoint at least one supervisor who is knowledgeable of the type of work involved, the potential hazards, and required protective measures (TRGS 517, number 5.5, paragraph 1).	Confirm that at least one supervisor was appointed prior to beginning the planned work. (2)(24) Verify that the supervisor(s) is adequately trained and informed about the type of work planned. The supervisor is responsible for ensuring that: - work does not begin before the procedures written in the operating instructions (and work schedule, if necessary) are fulfilled; - the working methods defined in the operating instructions are followed; - employees use the designated protective clothing; - the work area is marked (and closed off, if necessary) to keep unauthorized personnel out of the work area.
...	...
9-17. During work with asbestos or asbestos-containing dust, certain precautionary measures must be observed (TRGS 517, number 6).	Verify that the following precautions are taken during the work operations: (2)(3)(4)(24) - quantity of asbestos used is limited; - suitable containers are used for storage and during transport; - asbestos is collected and disposed in properly marked containers (see Appendix 1, No 2.5.1.1 GefstoffV); - equipment, facilities and rooms are cleaned regularly to remove asbestos dust; - asbestos-containing fine dust is not emitted from the work area.
...	...
9-18. If release of asbestos containing dust cannot be prevented, certain requirements must be met (TRGS 517, number 7.2).	Confirm that the installation meets the following requirements when working with asbestos or asbestos containing dust: (3)(4)(24) - the Technische Richtkonzentration (TRK) is not reached (See number 5); - air in and around the work area must be monitored for asbestos dust; - the air in the work area must be collected and carcinogenic materials removed before it is recirculated;

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY **REQUIREMENTS:**	**REVIEWER CHECKS:**
9-18. (continued)	(NOTE: If movable dust collectors are used, they must be type-tested and meet the requirements in ZH 1/487 category C for effectiveness. This regulation does not apply to demolition work or removal of asbestos-containing materials.) - the air containing asbestos dust may be discharged into the open air if the concentration of asbestos or asbestos-containing fine dust does not exceed the limited value of 0.1 mg/m3 (according to the TA Luft); - simultaneous exposure to other carcinogenic hazardous substances (diesel exhaust, etc) must be avoided.
...	...
9-19. A work schedule must be prepared prior to beginning demolition work on any structure or removing asbestos-containing materials from buildings, equipment or ships (TRGS 517, number 7.5, paragraph 1).	Confirm that a work schedule was prepared prior to starting any of the specified activities. (1)(2)(24) Examine the work schedule for measures that protect employees in the work area.
...	...
9-20. Certain types of asbestos must be removed prior to demolition activities (TRGS 517, number 7.5, paragraph 3).	Confirm that asbestos containing materials, spray asbestos, and any other asbestos product with a similarly weak bond are removed and disposed of prior to demolition. (1)(2)(24)
...	...

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
9-21. Installations that perform MAJOR WORK (defined generally as disposal work performed on large surfaces of structures or component parts, such as the removal of asbestos-containing spraying compounds at roof trusses, walls, ceilings, etc)requires that certain procedures must be followed (TRGS 517, number 7.5, paragraph 5).	Determine whether the installation has performed any MAJOR WORK. Confirm that the following procedures were followed: (1)(24) - work area is separated from other areas; - air from the work area is suctioned off and discharged into the open air through filters so that the asbestos fine dust content in the exit air is at or below 0.1 mg/m3; - entrance to the work area is via sanitary tunnels used as cleaning locks. (NOTE: If a large number of employees are involved in the project, an additional special cleaning man-lock with a blow-off device and vacuum maintenance by suction must be used.) - asbestos containing or contaminated materials that cannot be removed by suction must be treated and packed for disposal within the work area. Discharge from strongly contaminated areas must be conducted through a materials lock, in which the residual fibers are bonded, washed, or suctioned off; - when spray asbestos is removed on a large scale, a high-efficiency vacuum cleaner with approved features must be used (See "Spray asbestos and other asbestos products with a weak bond").
...	...
9-22. Installations that are involved in MINOR WORK (such as removal of individual plugging compounds) must follow specific protective measures depending whether the work is performed using a wet or a dry process (TRGS 517, number 7.5, paragraph 6).	Determine whether the installation uses the wet or dry process when performing MINOR WORK. (1)(24) If the work is performed using the wet process, verify that: - waste material is immediately packed in tear resistant plastic sacks and hauled away; - residue is suctioned off with a type-tested dust collector. If the dry process is used, verify that the following additional requirements are met: - dust is immediately suctioned off from the point of origination; - point of origination is covered with plastic foil to make it dust-tight.
...	...

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-23. Installations that remove asbestos-cement products must follow certain practices to ensure the least destructive and dust forming removal possible (TRGS 517, number 7.5, paragraph 7).	Determine whether the following practices are complied with during the removal of asbestos-cement products: (1)(24) - component parts unscrewed; - unscrewable component parts are broken out only after they are wetted; - all fragments are kept moist; - palletize boards at the demolition spot; - small parts are put into containers; - all asbestos-cement parts are are carried to the containers and/or transport vehicle (not thrown); - fiber binding parts that contain asbestos dust (glass-wool mats, carpet, floorings) must be wetted and disposed of like asbestos; - waste is wetted before it is hauled away.
...	...
9-24. Asbestos-containing waste must be collected in the work area and in suitable containers (TRGS 517, number 7.7).	Verify that asbestos-containing waste is collected at the work area in containers. (1)(24) Verify that containers are filled in such a way that refilling after closure is avoided. Check for the following suitable containers: - for fine-grained waste - sturdy plastic bags; - for coarse or slab-shaped waste - containers closed with tarpaulins; - for spray asbestos-containing waste - the disposal equipment. Examine containers for proper marking (See Appendix 1, No 2.5.1.1 GefStoffV).
...	...
9-25. Asbestos and asbestos-containing materials, waste, and/or liquids may only be deposited at approved waste dumps. (NOTE: Spray asbestos-containing waste and other fine-grained waste must be bound with cement before dumping (TRGS 517 number 7.7.2).)	Determine whether the installation has coordinated with local waste management authority about approved handling and packaging guidelines and followed those guidelines. (1)(24) Verify that asbestos waste is deposited only at an approved waste dump.
...	...

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
9-26. Installations are required to provide personal protective equipment to ensure the safety of employees handling asbestos if the initiation threshold is reached or exceeded (TRGS 517, number 8).	Confirm that only those personnel who have undergone medical checkups within the periods fixed in Appendix V GefstoffV are assigned to work in areas where the initiation threshold has been exceeded. (1)(3)(4)(24) Personnel may not work longer than 8 hrs/day and no longer than 40 hours/week for four-shift operations, 42 hrs/week on an average of four successive weeks if the initiation threshold is exceeded. Verify that personal protective outfits are provided and kept in good condition. (NOTE: For major demolition and rehabilitation work, personnel must be provided with disposable protective suits which must be worn and then disposed of at the end of shift.) Confirm that personnel are required to use the protective outfits. Verify that it has been determined prior to beginning work which personal protective outfits must be used.
...	...
9-27. Approved respiratory protection devices are required under certain circumstances (TRGS 517, number 8.2).	Determine whether personnel are required to wear a respiratory protection device if the initiation threshold has been exceeded. (3) Verify that the following respiratory protection devices were used under the following conditions: - if there is no risk of oxygen deficiency and: - the 10-fold amount of the TRK value is not exceeded - a filtering device with particle filters of class P 2; - the 50-fold amount of the TRK value is not exceeded - a filtering device with particle filters of class P 3 in conjunction with half mass; - the 200-fold amount of the TRK value is not exceeded - a filtering device with particle filters of class P 3 with full masks; - if there is a risk of oxygen deficiency or the occurrence of other pollutants must be expected, or the 200-fold amount of the TRK value is exceeded - devices which function independently of the ambient atmosphere (oxygen breathing apparatuses). Determine that all respiratory protection devices are stored, cleaned and maintained in accordance with the Respiratory Protection Instruction Sheet (ZH 1/134). Verify that the respiratory protection devices are only put on and taken off outside of the dust-endangered room.
...	...

COMPLIANCE CATEGORY: SPECIAL PROGRAMS German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
9-28. Certain protective measures must be taken for personnel handling asbestos-containing hazardous materials (TRGS 517, number 9).	Verify that the following procedures are followed for those personnel who handle asbestos-containing hazardous materials: (4)(24) - personnel do not eat, smoke or drink in the work area; - a separate area is established for personnel to eat, smoke and drink; - separate locker room for work and leisure clothes are provided (if necessary), and are separated by a shower room; - work and protective clothing are provided and cleaned (and destroyed if necessary by the installation/employer); - if no disposable suits are worn, regular cleaning of work clothes is provided at each interruption of work, breaks, and at the end of the shift; - work clothes that have been handed in for cleaning must be placed in properly marked containers (See Appendix 1, No. 2.5.1.1 GefStoffV); - if work clothes are to be transported to laundry facility, they must be placed in properly marked containers prior to transport and the laundry personnel must be notified of the health hazards caused by inhalation of the asbestos fine dust.
...	...
9-29. The installation is required to provide certain information to personnel and local works council concerning health hazards and monitoring of the TRK (TRGS 517, number 12).	Determine whether the installation provided the following information to the local works council and personnel involved in handling asbestos-containing hazardous materials:(1)(3)(4)(24) - the records of the results of measuring the TRK; - immediate notification if the TRK or the initiation threshold is exceeded and how it was exceeded; - consult with personnel and works council on measures to be taken (in the case of emergency, immediate notification of what measures were taken); - copies of the measuring certificates (monitoring the TRK) must be accessible.
...	...

Section X

Water Quality Management

Section X

WATER QUALITY MANAGEMENT

A. Federal Legislation

In the Federal Republic of Germany the federal government has the power to enact framework legislation concerning water, but the administration of water is done through the States.

A primary piece of Federal legislation for both drinking water and waste water is the Federal Water Act (Wasserhaushaltsgesetz). But this legislation only becomes enforceable in conjunction with the Water Act of the State under consideration.

For drinking water, important pieces of Federal legislation also include the Federal Drinking Water Ordinance (Trinkwasserverordnung) and the Drinking Water Treatment Ordinance.

Minimum requirements for waste water discharge are identified in the General Administrative Regulations, specified by industry or effluent type.

Additional important sources of Federal provisions are the Sewage Sludge Ordinance and the Water Supply Guarantee Act and accompanying ordinances.

- Sewage Sludge Ordinance (in connection with Section 15 II AbG.)

Compliance with this ordinance is required by whoever:

- operates a sewage treatment plant with a capacity of 300kg BSB5 (raw) per day, equivalent to 5000 citizen units, if sewage sludge is supplied for application on soil used for agriculture, forestry or horticulture;
- operates a sewage treatment plant smaller than stated above treating not only sewage from households and similar unproblematic sewage, if sewage is supplied for application on soil used for agriculture, forestry or horticulture;
- applies sewage sludge from an installation mentioned above on soil used for agriculture, forestry or horticulture.

Record Keeping - Operators of sewage treatment plants have to fill out an invoice as to the sewage sludge ordinance whenever sewage sludge is supplied or applied and hand over the invoice to the applier. The operator has to keep copies of the invoices for 5 years. This also applies to the owner's own land.

Prohibitions

- application of raw sludge used for agriculture, forestry or horticulture is prohibited;
- application of sewage sludge on truck farming or fruit growing land is prohibited;
- application of sewage sludge on soil used for forestry is prohibited; exceptions may be granted;
- application of sewage sludge on soil used for agriculture or horticulture is prohibited if certain concentrations of heavy metals in the sewage sludge are exceeded;
- application of sewage sludge on soil used for agriculture requires a permit if certain concentrations of heavy metals in the sewage sludge are exceeded;
- within 3 years, not more than 5 tons of dry mass per hectare may be applied through sewage sludge.

While provisions concerning the navigational uses of water in the FRG are not included in this protocol, it should be noted that these provisions are extensive at the Federal, State, and local water association level.

The primary law concerning the avoidance and disposal of waste is the Waste Law, Abfallgesetz (abbreviated AbfG). AbfG does not cover radioactive substances and substances that are discharged into waters or sewage disposal facilities, but does include waste oil, having superceded the special law on waste oil, Altoelgesetz.

The Abwasserabgabengesetz (AbwAG) pertains to the charges levied for discharging waste water into waters, and defines waste water as water changed in its properties by domestic, commercial, agricultural or other use and the water running off in conjunction with such uses, as well as water running off from built up or paved surfaces following precipitation.

Other sections of this manual should be consulted for AbfG and other appropriate regulations concerning Hazardous wastes (Section III) Waste Oils/POLs (Section VII), Solid wastes (Section IX), and Agricultural Pollutants/Pesticides (Section VI).

B. State Regulations

Each State has it own Water Act. Within the states there are also ordinances and decrees identifying specific bodies of water or mineral springs as protected areas. There are also decrees concerning the details of construction, operation, and monitoring of waste water treatment and discharge facilities.

Since the protection of ground water is a major issue in the FRG, the regulation of storage tanks is often viewed as a water protection issue than as a hazardous materials/waste storage issue. An example of this would be the following provisions from Baden-Wurttenberg "Decree for the recognition of non-metallic inside coatings for steel containers used for the storage of water-endangering fluids as other effective water protection measures."

The States also pass provisions for: the implementation of the Water Guarantee Act and the Water Management Act; permitting processes and requirements for drinking water treatment and sewage sludge treatment; and the agricultural use of sewage.

Requirements concerning the transportation and storage of hazardous materials in relationship to water are extensive on both the Federal and state levels.

An additional source of guidance and/or restriction can be the local water association.

C. Key Compliance Definitions

- Discharging - is the immediate and direct conveyance of waste water into a water body. Conveyance into the subsoil shall be regarded as discharging into a water, with the exception of conveyance into the ground within the framework of agricultural soil treatment.

- Waste Water - is water changed in its properties by domestic, commercial, agricultural, or other use and the water running off in conjunction therewith in dry weather (polluted water) as well as water running off from buildup or paved surfaces following precipitation (rain waste) and can include the following:

  - sanitary waste water discharge directly to a receiving stream, or through an on-base treatment facility;

  - sanitary or industrial waste water discharge to an off-base treatment plant;

  - storm water runoff from industrialized areas of the installation to a receiving stream or water body.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
DRINKING WATER	
10-1. Determine actions or changes since previous review of drinking water management.	Obtain a copy of the previous review report and determine whether non-compliance issues have been resolved. (1)(2)
...	...
10-2. A copy of all applicable regulations, directives and guidance documents on Drinking Water Management should be maintained and kept current at the installation.	Determine that copies of the following are kept at the installation: (1)(2) - Trinkwasserverordnung, 22 May, 1986, Federal Drinking Water Ordinance; - Drinking Water Treatment Ordinance, 19 December, 1959; - Wasserhaushaltsgesetz (WHG), Federal Water Act; - Technical Regulations, Schedule W 102, February 1975, "Regulations Covering the Protection of Drinking Water Sources, Part I, Protection Areas for Ground Water;" - Technical Regulations, Schedule W 102, February 1975, "Regulations Covering the Protection of Drinking Water Sources, Part II, Protection Areas for Dammed Drinking Water Reservoirs;" - Wassergesetz fuer Baden-Wurttenberg in der Fassung, 26 April, 1976 (GBl S 369); - Gesetz ueber die Organisation der Abwasserreinigung (Abwasserverbandsgesetz), 18 November, 1975 (GesBl S 763); - Hessisches Wassergesetz, 6 July, 1960 (GVBl S 69), last amendment: 4 September, 1974 (GVBl I S 361); - Landeswassergesetz (LWG) Rheinland-Pfalz, 1 August, 1960 (GVOBl Schl -H S 39), last amendment: 21 January, 1972 (GVBl S 2).
...	...
10-3. Installations that maintain their own wells or drinking water sources should comply with the substantive portions of regulations set forth in Trinkwasserverordnung and Wasserhaushaltsgesetz (Water Act).	Determine whether the installation maintains a well or drinking water source or uses the water supply from off-base sources. (2)(3) If the installation supplies its own water, confirm that the applicable regulations in the Federal drinking Water Ordinance are complied with.
...	...
10-4. Installations may be required to obtain a license for water use (WHG, Article 2).	Determine whether the installation is required to have a license. (1)(2)(7) Formal procedures are performed by BVA or STOV. Verify that the license (if applicable) defines the limits of water use allowed by the permit and was granted through formal procedure.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY **REQUIREMENTS:**	**REVIEWER CHECKS:**
...	...
10-5. Licenses may also contain additional requirements for water use (WHG, Article 4).	Examine the license. Determine whether any conditional requirements are specified including: (1)(2)(7) - establish measures to to assess the condition of water before and after use to determine harmful effects; - establish measures to reduce the damage caused by use: - contribute to the cost of renewing water to its original condition. (NOTE: Additional requirements can be added to the license at any time as deemed necessary by the authorities to ensure public safety and health [WHG Article 5].)
...	...
10-6. Licenses may also be limited or revoked under certain conditions (WHG, Article 5).	Determine that the installation has not exceeded the limits of its license by either: (1)(2) - changing the purpose under which the license was obtained; or - exceeds the use limits as defined in the license.
...	...
10-7. Installations that have been granted a license for water use may be required to accept official supervision of the facilities, devices and procedures pertaining to water usage (WHG, Article 21, para 1).	Determine whether officials have access to examine and test: (1)(2) - lands; - records; - tools. and access to employees to provide for the public safety. (NOTE: supervision of facilities and equipment serving the defense of the country are under the authority of the Federal Minister for Defense (except in the Land of Berlin) and may exempt or redefine these requirements [WHG, Article 21, para 4].)
...	...
10-8. Surface waters may be used without a license if certain conditions are met. (WHG, Article 24).	Confirm that if the installation has not obtained a license for use of surface waters, that the following conditions are met: (1)(2) - no adverse effect from use; - no substantial flow reduction; - water supply is not adversely effected.
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-9. The creation, removal, or substantial rearrangement of waters or their banks are subject to State and local regulations and land planning laws (WHG, Article 31).	Determine whether the installation has any activities planned that will create, remove or substantially rearrange waters or their banks. (1)(2) Verify that the local water authorities and HQ USAFE were consulted prior to implementation of the procedure, and that the local water supply and distribution frame work for the region was also taken into account. (NOTE: The local communities may also require supervision for any activity that penetrates the ground below a certain depth and that may effect water supply (WHG, Article 35). Consult local water authorities for applicable regulations.)
...	...
10-10. Installations must assess whether any water protection areas exist within their community boundaries.	Determine whether local water authorities have been contacted concerning the location of water protection areas. (2)(7) Confirm that installation has copies of Federal, State, and local laws and regulations applicable to the water protection areas contained in the community boundaries.
...	...
10-11. Installations with dammed drinking water reservoirs must set up and delineate protection areas (Technical Regulations - Schedule W 102 - February 1975, Regulations Covering the protection of Drinking Water Sources, Part II, Protection Areas for Dammed Drinking Water Reservoirs).	Protection areas are delineated on a case-by-case basis (Number 4.2). Confirm that preliminary field work was carried out by specialists prior to establishing the boundary areas of the protection area. (2)(7) Determine whether the following factors were taken into account when determining the protection areas: - type and kind of soils; - geologic formations; - hydrological and limnological conditions; - already existing and planned utilization of the area; - form and boundary of the intake area.
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-12. Care must be taken to avoid placement of dammed reservoirs near particular focal point dangers and to avoid contaminants and pollutants that could enter the reservoir (Number 3, Technical Regulations -Schedule W 102- February, 1975, Regulations Covering the Protection of Drinking Water Sources, Part II, Protection Areas for Dammed Drinking Water Reservoirs).	Confirm that the installation is aware of and has taken steps to prevent pollution of the reservoir pollutants and focal point dangers including: (1)(2)(3) - factory waste water; - storage areas for water polluting substances; - radioactive substances; - the effects of mining; - domiciles, traffic areas, cemeteries; - fertilizers or insecticides; - maneuvers or practice drills of the military; - take-off and landing areas for air traffic.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-13. The protection area must be subdivided into protective zones, according to the type and locality of the focal danger points (Technical Regulations -Schedule W 102- February, 1975, Regulations Covering the Protection of Drinking Water Sources, Part II, Protection Areas for Dammed Drinking Water Reservoirs, Number 4.3).	Verify that the protection area has been divided into protective zones: (2)(7)(17) - Zone I - reservoir and bank zone; - Zone II - particular protective zone; - Zone III - general protective zone. Determine whether different measures for protection are needed within the protective zones, and if the zones have been further subdivided (eg., Zone II A and Zone II B).
...	...
10-14. Zone III extends from the boundary of the intake area to the outer boundary of Zone II and should provide full protection against contaminants and pollutants, particularly radioactive and chemical substances which do not separate out of the water completely during natural biological and hydrological activity (Technical Regulations -Schedule W 102- February, 1975, Regulations Covering the Protection of Drinking Water Sources, Part II, Protection Areas for Dammed Drinking Water Reservoirs, Number 5).	Examine Zone III for the following forbidden practices within its boundaries: (1)(2)(3) - exceeding the existing or permitted build-up area; - hospitals and/or therapeutic centers; - sewage treatment plants that allow the waste water or sewage to irrigate, seep, or drain off onto the land, including run-off; - underground irrigation of sewage, sand filter drains; - waste water or sewage pits; - burying of radioactive or polluting substances; - introduction into the reservoir tributaries of waste water or sewage, even if such water has been treated; - oil refineries, metal works, chemical plants, or nuclear reactors; - salt mines and non-ferrous metal ore mines; - any type of drilling operation; - storage or dumping of radioactive or polluting substances; - dumps for wrecked automobiles; - open storage or utilization of pesticides or herbicides; - depots or marketing centers for heating or fuel oil; - transport pipelines for polluting substances; - use of extracted polluting substances for building roads (tar, some bitumens and slag); - take-off, landing, and approach areas for air traffic; - military buildings and maneuver and practice drill areas; - the washing of cars and the changing of motor oil near aboveground water sources; - watering and/or driving cattle through aboveground water sources; - the breeding of fish, or fishponds where fish are fed; - herding cattle, cattle-pens, or keeping cattle in large numbers; - clearing land and other similar operations which could accelerate erosion.
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-15. Certain utilization activities within Zone III are conditionally permitted (Technical Regulations -Schedule W 102- February, 1975, Regulations Covering the Protection of Drinking Water Sources, Part II, Protection Areas for Dammed Drinking Water Reservoirs, Number 5.1.1).	Inspect Zone III for the following conditional activities: (2) - agriculture, provided fertilization is carried out in such a way so as to prevent run-off into the tributaries or reservoir, even during floods and so that no soil erosion takes place; - agricultural business, provided that stable manure, liquid manure, and sewage sludge are collected so that they cannot seep into the ground nor flow along the soil surface; - houses within clearly delineated areas, provided that the waste water is collected by leak-proof pipes and is removed from the intake area of the reservoir; - permanent buildings used for forestry or similar purposes if the waste water is disposed of in such a way that it does not endanger the reservoir; - roads and other necessary traffic related construction, provided that the necessary safety measures are taken to protect the reservoir and its tributaries during building and operation of the roadway; - aboveground storage of heating and fuel oil for domestic use and diesel oil for agricultural use provided that necessary safety measures are taken during transport, storage, and utilization; - building sites and stores for building materials, provided the necessary safety measures are taken during the operation and removal of the polluting substances.
...	...
10-16. Zone II extends from the boundary of Zone III to the outer boundary of Zone I. Should no Zone III be needed, the outer boundary of Zone II is the boundary of the intake area. The width of Zone II of above-ground tributaries must be at least 100 meters on each side (Technical Regulations -Schedule W 102- February, 1975, Regulations Covering the Protection of Drinking Water Sources, Part II, Protection Areas for Dammed Drinking Water Reservoirs, Number 5.2).	Examine Zone II for the following forbidden practices within its boundary: (2) - the installations, activities, and processes described for Zone III; - buildings, particularly of agricultural or industrial installations, stable buildings, or silage containers; - installations and measures which encourage and increase the influx of people into the area (other than employees) particularly roads, motor-sport, sporting facilities, camping sites, parking lots or weekend houses; - camping by or bathing in above ground water sources; - washing cars and changing motor oil; - cemeteries; - mining for ores and minerals; - explosions; - traffic or freight installations; - building sites; - agriculture (except for grassland); - use of organic fertilizers; - open storage or improper use of mineral fertilizers; - silage containers; - small gardens or horticultural centers; - fishponds; - storage of heating, fuel, or diesel oil; - transportation of radioactive or polluting substances; - sewage treatment plants (clarifying plants).
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-17. Zone I should give full protection against direct pollution of the water in the reservoir. Its boundary comprises the dammed reservoir (including primary basins and banks and banks which border on the maximum water level of the reservoir. The banks must be wide enough to offer at least 100 meters in horizontal protection (Number 5.3, (Technical Regulations -Schedule W 102- February, 1975, Regulations Covering the Protection of Drinking Water Sources, Part II, Protection Areas for Dammed Drinking Water Reservoirs).	Examine the Zone I boundaries for the following activities, installations, etc that are not permitted: (2) - all the installations, processes, etc listed under Zones II and III; - boating, water sports, or bathing in the reservoir and primary basins; - motorized and pedestrian traffic; - any agricultural use; - use of any insecticides, pesticides, or any substances that protect or regulate plant growth.
...	...
10-18. Water in the reservoir and its tributaries must be tested regularly (Number 7.4, Technical Regulations -Schedule W 102- February, 1975, Regulations Covering the Protection of Drinking Water Sources, Part II, Protection Areas for Dammed Drinking Water Reservoirs).	Confirm that the installation has tested the water in the reservoir and its associated tributaries on a regular basis. The testing should include the following information: (3) - physical properties of the water; - chemical composition; - biological and bacteriological composition. Verify that the results of these tests are evaluated and kept on file at the installation.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
WASTE WATER	
10-19. Determine actions or changes since previous review of wastewater management.	Obtain a copy of the previous review report and determine whether noncompliance issues were resolved.
...	...
10-20. Copies of all applicable regulations, directives, and guidance documents on Waste water Management should be maintained and kept current at the installation.	Determine that copies of the following documents are kept at the installation: - Wasserhaushaltsgesetz (WHG) Federal Water Act; - Ueber Abgaben Fuer das Einleiten von Abwasser in Gewaesser Abwasserabgabengesetz (AbwAG); - Excerpt Of The Abwasserabgabengesetz (AbwAG), issued March 5, 1987; - Gesetz uber die Vermeidung und Entsorgung von Abfallen, Abfallgesetz (AbfG), Waste Avoidance and Waste Management Act; - Klaerschlammverordnung (AbfKlaerV) Sewage Sludge Ordinance, AbfG; - 48. Abwasser VwV, 48th General Administrative Regulations Concerning the Requirements for Introducing Wastes into Water (Utilization of Specific Hazardous Materials: - 40. Abwasser VwV, 40th General Administrative Regulation Concerning Minimum Requirements for the Discharge of Waste Water into Surface Waters; - 39. Abwasser VwV, 39th General Administrative Regulation Concerning Minimum Requirements for the Discharge of Waste Water into Surface Waters; - 36. Abwasser VwV, 36th General Administrative Regulations concerning Minimum requirements for the discharge of Waste Water into Surface Waters (Hydrocarbons). * Gesetz Ueber Abgaben Fuer ... - 31. Abwasser VwV - "31st General Administrative Regulations Concerning the Minimum Requirements for the Discharge of Waste Water into Surface Water (Water Purification, Cooling Systems", (9-13-83); - 22. Abwasser VwV - "22nd General Administrative Regulations Concerning the Minimum Requirements for the Discharge of Wastewater into Water Bodies (Mixed Wastewater)," (5-19-82);

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-20. (continued)	- 1. Abwasser VwV, 1st General Administrative Regulation Concerning the Minimum Requirements for the Introduction of Waste Water into Municipal Waters; - Rheinland-Pfalz Water Hazardous Substances: Catalog of Water Hazardous Substances, 6 January, 1984; - State Regulation Concerning the Duty to Obtain a Permit for the Discharge of Substances Dangerous to Water into a Waste Water Facility and Its Supervision;
...	...
10-21. Waste management, including sewage wastes, are also regulated at the State and government level, including designation of suitable sites for waste management facilities (Article 6, Waste Avoidance and Waste management Act).	Verify that the installation has contacted the proper local authorities and is aware of the requirements and regulations at the State level for Waste Water Management. Information: Installations can receive any required regulations or statutes from their local government counterparts.
...	...
10-22. Prior to constructing a waste treatment plant (including sewage treatment) the objectives and requirements of regional development and regional planning at State and local level must be observed by the installation (Waste Avoidance and Waste Mangement Act, Article 2, paragraph 1).	Determine whether the installation has constructed (or has plans to install) a waste water treatment plant. Verify that the local and State level regulations were followed in planning the location and operating parameters of the waste water treatment plant.
...	...
10-23. The location of discharge points is subject to regulation by the Federal Government (WHG, Article 3, paragraph 1).	Determine whether the installation has any discharge points. Verify that the installation has determined that alternate methods (in particular purification plants) have been investigated and have been found not to achieve the same degree of pollution control.
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-24. The siting of discharge points may also regulated by the State, and subject to the consent or permission of local/State water authorities (WHG, Article 2, paragraph 1).	Determine whether the laws of the appropriate province designate whether consent or permission by the proper authorities is required and whether it has to be or was obtained by the installation. Permissions are kept on file by the local/county Federal Assets Office (BVA) or Military District (STOV). They also request permissions for the US Forces.
...	...
10-25. Installations which discharge wastewater into waters may be required at the request of the State water authority to have an official permit (AbwAG, Article 4).	Determine whether the installation discharges waste water into waters. Determine whether the installation has been requested by the State water authority to obtain a permit. Review a copy of the permit for the following data, in mean values to be maintained (standard values) and values that may not be exceeded (maximum values): - maximum amount of polluted water permitted annually; - amount of settleable solids; - amount of oxidizable substances; - degree of toxicity. (NOTE: If there is no reason to expect settleable solids, oxidizable substances, or a degree of toxicity, or if the amount of mercury in the waste water is less than 1 kilogram and the amount of cadmium is less than 10 kilograms annually, the requirement to set definite values in the official permit is waived.)
...	...
10-26. Compliance with the official permit may be assessed by the State or State-acknowledged agencies (AbwAG, Article 4, Paragraph 4).	Determine whether compliance with the official permit is assessed by the State. Verify that the official permit is reviewed yearly (if applicable).
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-27. The reference values in the official permit may be changed under certain conditions by the State or State acknowledged Agencies (AbwAg, Article 4, Paragraph 4 and 5).	The State District (Bezirksregierung) may apply higher reference values in the official permit if more than one of the maximum values determined in the official permit is exceeded per year. Confirm that if higher reference values are applied, they are calculated as the aggregate of the reference value indicated in the official permit and the arithmetical mean of the differences by which the value measures exceed the maximum value set in the official permit. If the installations will be discharging a reduced volume of wastewater or will maintain reduced standard values while not exceeding correspondingly lower maximum values for three months or more, they can inform the authority to reduce temporarily the number of units of noxiousness. The deviation obtained must be at least 25% of the waste water volume or of the applicable standard.
...	...
10-28. Sending States Policy.	The US Forces pay only for measurable services rendered versus fees linked to an indirect unit of measure (e.g. sewage fees as percentage of known water consumption could be payable but surface water run-off fees as percentage of sewage from unidentifiable areas is not).
...	...
10-29. Communities may be required to determine the level of noxiousness of wastewater discharge prior to disposal or discharge into a sewer. With the exception of rain water and small wastewater discharge, the values used to determine the number of units of noxiousness are taken from the official permit (AbwAG, Article 3).	Confirm that the level of noxiousness of wastewater has been assessed according to the requirements outlined in APPENDIX X-1. (NOTE: Waste water discharged into coastal waters and estuaries of surface waters leading into the sea are exempt from considering the toxicity for fish if it is considered toxic solely due to the content of salts that are similar to the principal components in sea water.) Verify that one or more of the following methodologies and practices were used to determine the units of noxiousness in the waste water discharge: - the volume of settleable solids is determined after a 2-hour settling period; - the chemical oxygen demand (COD) is determined in accordance with the dichromate procedure, silver sulfate being applied as a catalyst; - mercury and cadmium levels are determined by atomic adsorption spectrometry; - test to determine the toxic effect in fish utilize the species orfe (Leuciscus idus melanotus) as the test fish and apply varying degrees of waste water dilution.
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY **REQUIREMENTS:**	**REVIEWER CHECKS:**
10-30. Installations which operate a sewage treatment plant or apply or supply sewage sludge for use on soil used for agriculture, forestry, or horticulture may be required to comply with certain record-keeping regulations and prohibitions (Sewage Sludge Ordinance, AbfG Article 15, paragraph 2). ...	Determine whether the installation is involved in one of the following activities: - operates a sewage treatment plant with a capacity of 300 kg BOD5 (raw) per day, equivalent to 5000 citizen units, if sewage sludge is supplied for application on soil used for agriculture, forestry, horticulture; - operates a sewage treatment plant smaller than stated above treating not only sewage from households and similar unproblematic sewage if sewage sludge is supplied for application on soil used for agriculture, forestry, horticulture; - applies sewage sludge from an installation mentioned above on soil used for agriculture, forestry, or horticulture. Verify that an invoice (Lieferschein) has been filled out whenever sewage sludge is supplied or applied. Examine a random sample of copies of the invoice for the following information: - address of the buyer; - results of the analysis; - signature of the operator of the sewage treatment plant. Confirm that a copy of the invoice (Lieferschein) is given to the applier. Verify that the installation maintains copies of all invoices for 5 years. (NOTE: installations who apply sewage sludge to their own land are also required to comply with these regulations.) Determine that the following practices are complied with: - untreated sludge is not applied on soil used for agriculture, forestry, or horticulture; - sewage sludge is not applied on truck farming or fruit growing land; - sewage sludge is not applied on soil used for forestry (exceptions may be granted); - sewage sludge is not applied on soil used for agricultural if certain concentrations of heavy metals in the sludge are exceeded; - within 3 years, not more than 5 tons of dry mass per hectare is applied through sewage sludge. ...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-31. Installations whose waste water discharge comes primarily from drinking and operational water purification, circulation cooling systems from factories and industrial processes, and any other type of steam production are required to meet certain requirements before discharging the waste water into water. (31st General Administrative Regulations Concerning the Minimum Requirements for the Discharge of Waste Water into Surface Water (Water Purification, Cooling Systems, September 13, 1983 31 Abwasser VwV). (NOTE: These regulations do not apply to fresh water cooling systems, water purification systems designed for the reutilization of water, or smoke stack washing.) ...	Determine that the minimum requirements for waste water discharge from water purification and cooling systems set forth in APPENDIX X-3 are complied with. (2)(25) Specific analysis methodologies must be used to obtain the results used to assess compliance with the minimum requirements for discharge. Verify that the following analysis methods were used for each substance: - Deposited substances - DIN 38 409-H 9-2 (issued July 1980); - COD for the deposited sample - DIN 38 409-H 41 (issued December 1980); - Active chlorine from the filtered test (glass fiber filter) - DEV G 4.1 b (7. issuance 1975, not with a vacuum); - Hydrazine from the filtered test - DIN 38413-P1 (issued March 1982); - Phosphorous collected from the non-deposited homogeneous test - DEV D 11.2 (7. issuance 1975); - Vanadium collected from the non-deposited homogeneous test - analog DIN 38 406-E 21 (issued September 1980). (NOTE: Compliance can also be attained if the arithmetic mean does not go over the values from the last 5 federal water surveys. Studies must be less than 3 years old to be considered in compliance.) ...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-32. All installations whose waste water discharge contains contaminated materials that come from different sources and are classed together for general clean up purposes must meet specific minimum requirements (22.Abwasser VwV, 22nd General Administrative Regulations Concerning the Minimum Requirements for the Discharge of Waste Water into Water Bodies [Mixed Waste water], May 19, 1982). (NOTE: Waste water discharge that meets the definition in Article 7, paragraph 1 of the WHG or that meet the minimum requirement of that law as a combined calculation are exempt from these requirements.)	Determine whether the installation meets the following minimum requirements for mixed waste water discharge: (2)(25) - disposable materials - 0.5 ml/l in the sample; - chemical oxygen requirement (COD) - discharge value in a 2 hour mixed test that causes a decrease of at least 75 v.H. (NOTE: COD decrease is measured by the difference between the amount of contaminated flow into the control waste water treatment plant and the water flowing out over a 24 hour period.) Confirm that the following (or equivalent) analysis methodologies were used to calculate the data used to assess compliance with the minimum discharge requirements for mixed waste water discharge: - Disposable Substances - DIN 38409-H9-2 (issued July 1980); - Chemical oxygen need from the removed sample - DIN 38409-H-41 (issued December 1980). (NOTE: Compliance can also be attained if the arithmetic mean does not go over the values from the last 5 federal water surveys. Studies must be less than 3 years old to be considered in compliance.)
...	...
10-33. Installations that discharge waste water into waters (within the meaning of Article 1, paragraph 1 of the Federal Water Act) may be subject to a charge levied by the states (AbwAG, Article 1).	Determine whether the installation discharges waste water into any waters. (2)(25) Determine whether the appropriate charges are paid (if applicable) or if the installation has been given an exemption. Exemptions authorized by the Federal Government by statutory ordinance with consent of the Bundesrat to avert any significantly detrimental economic development may not remain in force (either in full or part) after December 31, 1989 (AbwAG, Section 3, paragraph 6). (NOTE: The installation may request that the responsible authorities determine the noxiousness of settleable solids by weight of such solids provided that the number of cubic meters of such solids generated annually is greater than 5 times larger than the number of tons of dry substance generated annually.)
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-34. Installations that discharge sewage into waters (within the meaning of Article 1, paragraph 1 of the Federal Water Act) may be subject to a charge levied by the states (excerpt of the AbwAG, issued March 5, 1987).	Determine whether the installation discharges sewage into any waters. (2)(25) Charges are dependent upon the toxicity of waste. The leading parameters used to assess the toxicity of the waste include: - COD (Chemical Oxygen Demand); - POX (Purgeable Organic Halogen Compounds); - HM (Heavy metals [Hg, Cd, Ni, Pb, Cu] and their compounds; - FT (Fish Toxicity). Verify that the appropriate charges are paid (if applicable). (See statement under item 10.)
...	...
10-35. The installation may be required to pay duties on rain water discharged through a public sewer system, which must be assessed for number of units of noxiousness by the installation (AbwAg, Article 7, Article 11, paragraph 2).	Determine whether the installation discharges rain water into a public sewer system. (2)(25) Verify that the installation calculates the units of noxiousness by assessing the number of inhabitants connected to the system and taking 12% of that number (the number of inhabitants may be estimated). Confirm that the installation submits all the calculations and documentation used to calculate the units of noxiousness to the responsible authority through their responsible landlord (BVA or STOV). (NOTE: The State may reduce or exempt waste water discharge charges if the rain water is reduced through retention or by treatment in a waste water sewage treatment plant.)
...	...
10-36. The installation may be required to pay duties on small discharge of domestic (and similar type) sewage (AbwAG, Article 8 and Article 11, paragraph 2).	Determine whether the installation discharges domestic sewage. (2)(3)(25) Verify that the installation calculates the units of noxiousness for their domestic sewage discharge by taking 1/2 the number of inhabitants connected to the public sewer system. If this is impossible to determine, the number may be estimated by the State. Confirm that the installation submits all the calculations and associated documents used to assess the units of noxiousness.
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
10-37. The State may also require the installation to pay waste water duties in lieu of dischargers who discharge on an annual average less than 8 cubic meters of sewage per day from domestic households (AbwAG, Article 9). ...	Determine whether the installation has domestic sewage dischargers who discharge less than 8 cubic meters day, annually. (2)(25) Confirm that the waste water discharge duties levied for such discharge is equal to that determined by the State. ...