

European Commission, Brussels



**ASSESSING LEGAL COMPLIANCE WITH AND IMPLEMENTATION OF THE WASTE
ACCEPTANCE CRITERIA AND PROCEDURES
BY THE EU-12**

No. ENV.G.4/FRA/2007/0066

FINAL REPORT

31 August 2010

BiPRO

Beratungsgesellschaft für integrierte Problemlösungen

Content

1	Background and objectives	5
2	Methodology and project approach	7
3	Summary evaluation of legal implementation and practical application ..	12
3.1	Key elements of the WAC Decision	12
3.2	Overview of WAC Decision implementation by national legislation	15
3.2.1	<i>Detailed evaluation of state of implementation with respect to Acceptance Procedures.....</i>	<i>18</i>
3.2.2	<i>Detailed evaluation of state of implementation with respect to Acceptance Criteria.....</i>	<i>25</i>
3.3	State of Implementation in practical landfilling procedures	43
3.3.1	<i>Overview of WAC Decision implementation in daily practice.....</i>	<i>43</i>
3.3.2	<i>Detailed assessment of WAC Decision implementation in daily practice by landfill class.....</i>	<i>43</i>
3.4	Experts opinions and proposals for amendment of the WAC Decision	51
3.4.1	<i>Experts opinions</i>	<i>51</i>
3.4.2	<i>Identified gaps in the WAC Decision</i>	<i>52</i>
3.5	Conclusions and Recommendations	53

Overview of Tables

Table 3-1:	Overview of implementation of 2003/33/EC procedures in Member State legislation (EU-12) in 2009.....	16
Table 3-2:	Overview of implementation of 2003/33/EC acceptance criteria in Member State legislation (EU-12) in 2009	17
Table 3-4:	Overview of PAH limit values set by MS.....	30
Table 3-7:	Accepted waste types per landfill site.....	43
Table 3-7:	Overview of divergences of national legislation of criteria for underground storage to the WAC Decision.....	52

Overview of Figures

Figure 2-1:	Methodology for legal analysis	7
Figure 2-2:	Evaluation scheme for assessment of legal compliance	8
Figure 2-3:	Assessment criteria for the national legislation.....	9
Figure 2-4:	Working steps for landfills site visits and compliance check	10

Overview of Infoboxes

Infobox 3-1:	WAC Decision key elements are regards acceptance procedures	13
Infobox 3-2:	WAC Decision key elements are regards acceptance criteria	14
Infobox 3-3:	WAC Decision key elements are regards sampling and testing standards.....	15
Infobox 3-4:	Wording WAC Decision chapter 1.1.1	19
Infobox 3-5:	Wording WAC Decision chapter 1.1.2	20
Infobox 3-6:	Wording WAC Decision chapter 1.1.3	21
Infobox 3-7:	Wording WAC Decision chapter 1.1.4	22
Infobox 3-8:	Wording WAC Decision chapter 1.2	23
Infobox 3-9:	Wording WAC Decision chapter 1.3	24
Infobox 3-10:	Wording WAC Decision chapter 2	26
Infobox 3-11:	Wording WAC Decision chapter 2.1.1	27
Infobox 3-12:	Wording WAC Decision chapter 2.1.1	27
Infobox 3-13:	Wording WAC Decision Chapter 2.1.2.1	28
Infobox 3-14:	Provisions/wording WAC Decision chapter 2.1.2.2.	30
Infobox 3-15:	Wording WAC Decision chapter 2.2.1	32
Infobox 3-16:	Wording WAC Decision chapter 2.2.2	33
Infobox 3-17:	Wording WAC Decision chapter 2.2.3	35
Infobox 3-18:	Wording WAC Decision chapter 2.3.1	36
Infobox 3-19:	Wording WAC Decision chapter 2.3.2	36
Infobox 3-20:	Wording WAC Decision chapter 2.3.3.	38
Infobox 3-21:	Wording WAC Decision chapter 2.4.1	39
Infobox 3-22:	Wording WAC Decision chapter 2.4.2	40
Infobox 3-23:	Wording WAC Decision chapter 3	41
Infobox 3-24:	Wording WAC Decision chapter 2.5	42
Infobox 3-25:	Wording WAC Decision Appendix A, chapter 1.2	42

1 Background and objectives

About 30 years ago, the first legislation in the field of environmental policy including waste policy came into force. In the context of increasing awareness of negative environmental and health impacts of anthropogenic activities, the environmental policy established key areas to be covered in legislation. Since then a large number of legal obligations have been set in order to limit or better reduce the negative impacts and to protect the environment and human health.

One of the most prominent policy areas in this respect is waste policy, due to the grave environmental and social impacts it may entail. In consequence, corresponding European Legislation sets standards for the handling, transport, treatment and disposal of waste for the purpose of reducing the negative effects to human health and to the environment. Therefore, Member States shall take appropriate measures for implementation and practical enforcement including the establishment of the necessary administrative and technical infrastructure, permitting, operation procedures, monitoring and effective control.

The **Waste Framework Directive 2008/98/EC (former 2006/12/EC)** sets the legal framework and basic definitions, relevant for waste management. Priority within the European waste hierarchy is given to prevent waste generation. Reuse, recycling and recovery options should be realised whenever suitable in order to reduce the consumption of primary resources and the amount of waste. However, a huge amount of waste is currently landfilled.

Concerning the disposal of waste in landfills, the **Directive 1999/31/EC on the landfill of waste** and the **Decision 2003/33/EC** on acceptance criteria set standards for the authorisation, design, operation, closure and aftercare of landfills.

First, the Landfill Directive had to be applied for new landfills only, and since July 2009 even existing landfills have to fully comply with the set requirements. Inter alia, landfills have to establish the provisions related to waste characterisation and the acceptance of waste in different landfill categories as defined in Annex II to the Landfill Directive.

The acceptance criteria and the acceptance process are further specified in **Council Decision 2003/33/EC** (hereinafter referred to as WAC Decision). This includes a detailed description of waste characterisation procedures, limit values for waste composition and leaching behaviour as well as acceptance procedures to be executed at each landfill site. The decision entered into force on 16 July 2004 and the limit values have to be applied in all Member States since 16 July 2005.

Within the last years, important efforts have been taken in order to meet the recently established legal requirements. However, infringement cases, complains and petitions received by the European Commission show, that there are deficits in implementation. Especially the practical enforcement of the WAC Decision raises difficulties for the involved stakeholders. Therefore, the project aims to monitor the state of implementation of the Landfill Directive (Annex II) and the WAC Decision. In this context – and in order to prevent infringement cases – high priority is given on close cooperation with Member State authorities and affected stakeholders to facilitate correct application of the EU waste legislation.

Within this project, the implementation of EU requirements by national legislation and the compliance on the ground with the provisions of the WAC Decision is analysed for each MS.

In addition, MS specific problems shall be identified to enable the European Commission to further investigate and, if necessary, to act appropriately to enable and achieve implementation.

In particular, the following tasks have been accomplished within the project:

- Assessment of legal compliance of the EU-12 Member States as regards Annex II to the Landfill Directive and the WAC Decision;
- Site visits to three representative landfills in BG, PL, RO;
- Site visits to two representative landfills in CZ, HU
- Site visits to one representative landfill in CY, EE, LV, LT, MT, SI, SK;
- Country reports comprising aspects from the legal analysis and the landfill visits.

Project results will be presented to all competent MS representatives during a TAC meeting in Brussels end of this year.

2 Methodology and project approach

In this chapter, the conceptualised methodological approach is explained shortly. As the project concentrates on the assessment of the level of implementation and compliance with the WAC Decision in each Member State, a legal analysis of national legislation was realised as a first step. In addition the daily practice in the Member States has been evaluated in a second step as additional indicator for practical implementation of EU requirements.

Methodology for assessment of legal compliance

As illustrated in Figure 2-1, the legal analysis (WP 1) is a successive approach method to identify key elements of the WAC Decision and to develop a standardised control scheme.

Identification of key elements

In the first step, key elements of the WAC Decision have been identified within a developed and standardised control concept.

Afterwards, the relevant legal documents have been collected and accordingly analysed.

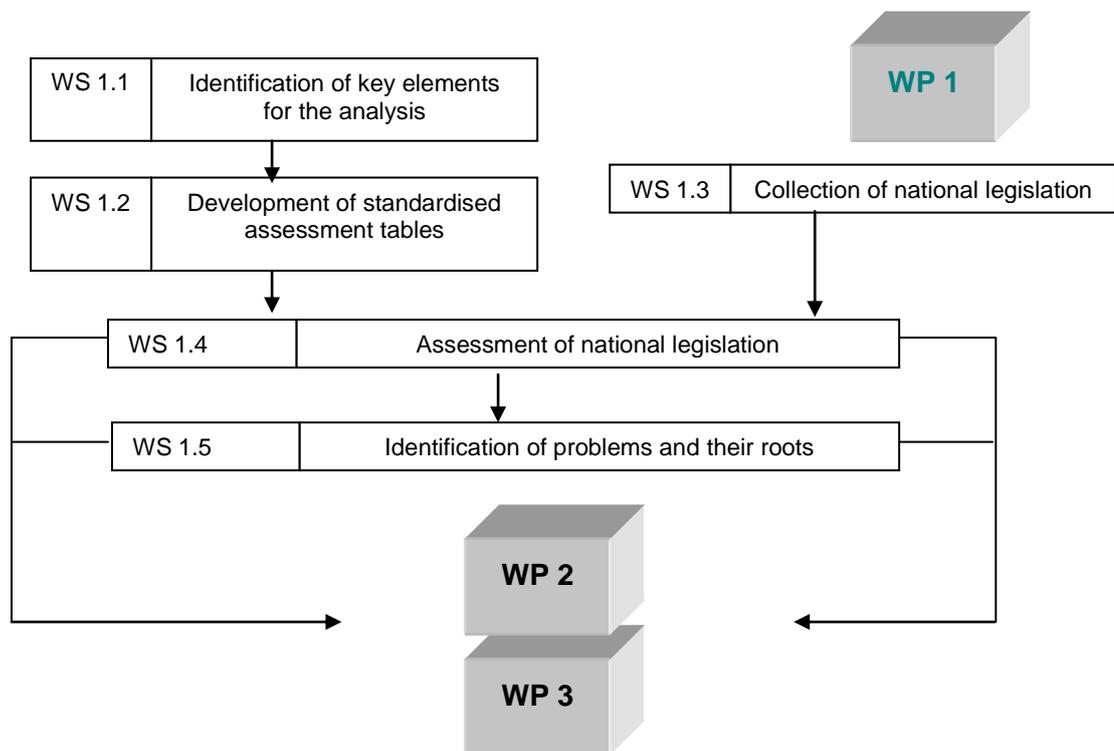


Figure 2-1: Methodology for legal analysis

The identification of key elements for the legal analysis is based on a thorough step-by-step examination of Annex II to the Landfill Directive and the WAC Decision to extract all relevant aspects for the evaluation. The key elements are allocated to the categories: basic characterisation, compliance testing and on-site verification comprising waste acceptance criteria for landfills for inert waste, criteria for landfills for non-hazardous waste, as well as sampling and analysis.

Standardised evaluation procedure

The evaluation procedure was realised in two steps and designed in a way to systematically compare each paragraph of the WAC Decision with the national legislation (see Figure 2-2). The detailed evaluation template is provided in the Annex, (table 2-1: “Standardised table for the assessment of implementation”). This standardised approach is helpful to ensure that the assessments are comparable and that all aspects are taken into consideration for each MS. The assessment tables comprise the information on the corresponding paragraph of the relevant national legislation and the analysing results. A short description of the text and especially of divergent aspects is added in short remarks for each MS. Additionally, aspects implemented by national legislation are listed. Furthermore, the table indicates if a Member State has not established specific rules related to a certain category of the EU legislation.

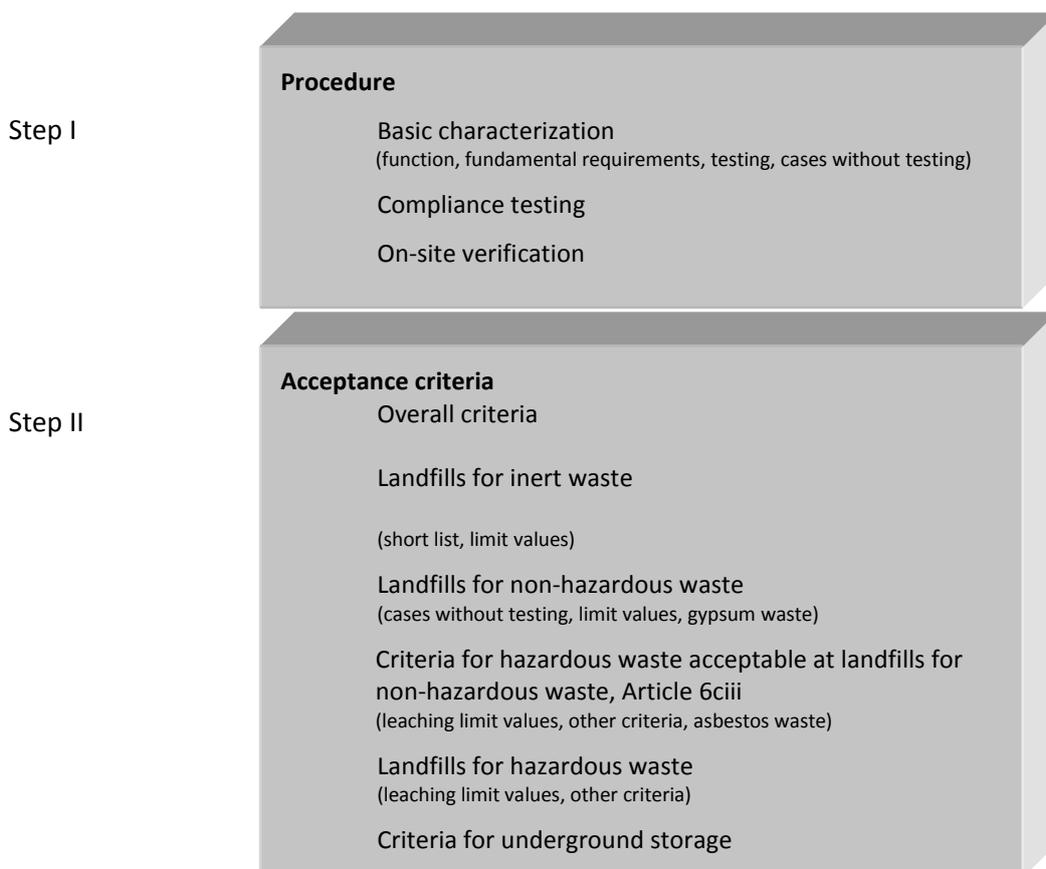


Figure 2-2: Evaluation scheme for assessment of legal compliance

Assessment of national legislation

The legal assessment was realised by means of the standardised and above described assessment form. Additionally, the assessment includes a summary table comparing the individual results of Member States (see Annex). Therefore, MS are allocated to categories depending on their individual national legislation to evaluate consistency and to identify divergences.

The implementation level of the WAC Decision in all countries is categorised according to the following scheme:

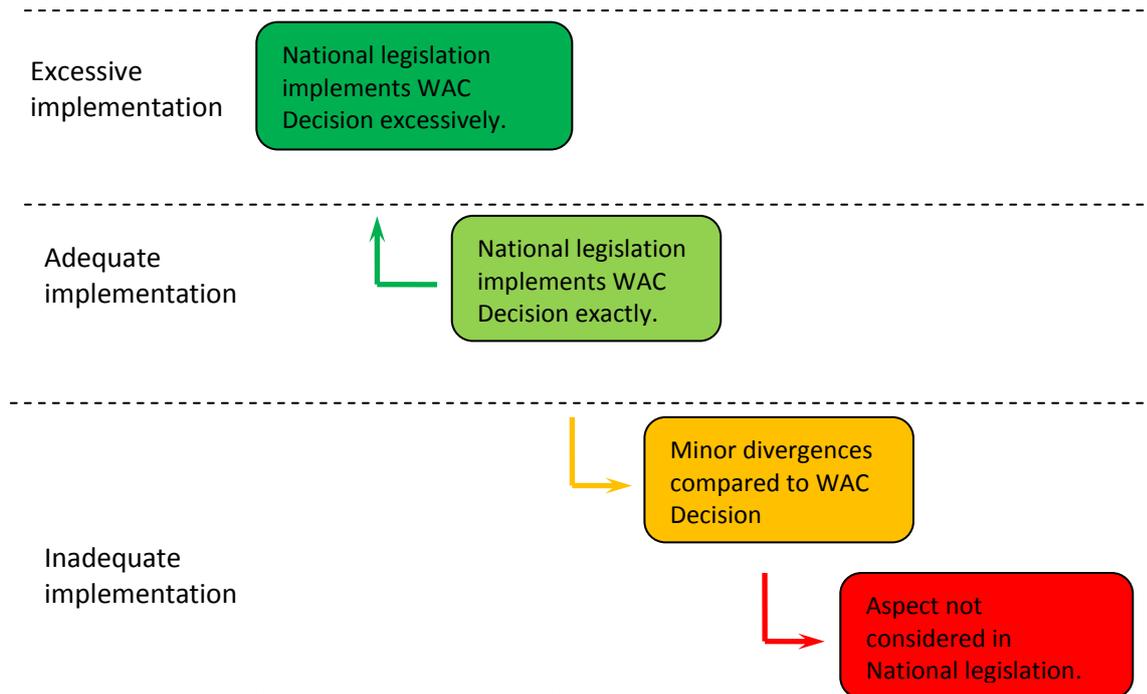
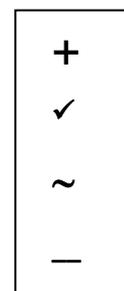


Figure 2-3: Assessment criteria for the national legislation

In case of divergences, it was checked whether specific local implementation difficulties exist or if procedures from other Member States could be adopted.

To characterise the implementation, the following symbols were used to indicate the quality of implementation for each key parameter:

- More stringent requirements
- Full implementation
- Deficit/divergence with minor impact
- Not implemented



Methodology for information collection, cooperation and reporting

The collection of national legislation documents was realised by using archived materials (e.g. from previous projects as awareness raising seminars on waste legislation in several MS), by contacting representatives of national competent authorities, by requesting the relevant national legislation and by gathering corresponding information via internet.

Competent authorities for data collection

In order to prepare an assessment of legal compliance and country visits, the competent expert in the national authority of each EU-12 Member State has been identified as primary cooperation partner (see Annex III). All experts indicated in the list have been contacted in autumn 2009 with a general questionnaire (see Annex III). The first e-mail and the attached questionnaire were intended to shortly introduce the issue and to get an expert opinion on the relevant legislation as a means to well target the investigation and the assessment. Depending on the administrative infrastructure of MS additional authorities, associations, companies and landfill operators have then been contacted on suggestion of the primary contact person. After a first evaluation of legislation and subordinated documents expert interviews have been performed to clarify open questions and to discuss details of provisions on national level. In Greece and Italy data collection, legal analysis and site visits have been performed by local subcontractors.

Site visits

The preparation of the site visits was performed in an incremental approach (see below) with the competent Member State authorities as the principal cooperation partners. Whenever possible, the project team organised the selection of representative landfills together with the identified contact persons of the competent authorities. In addition national waste management associations showed to be competent cooperation partners in some of the Member States.

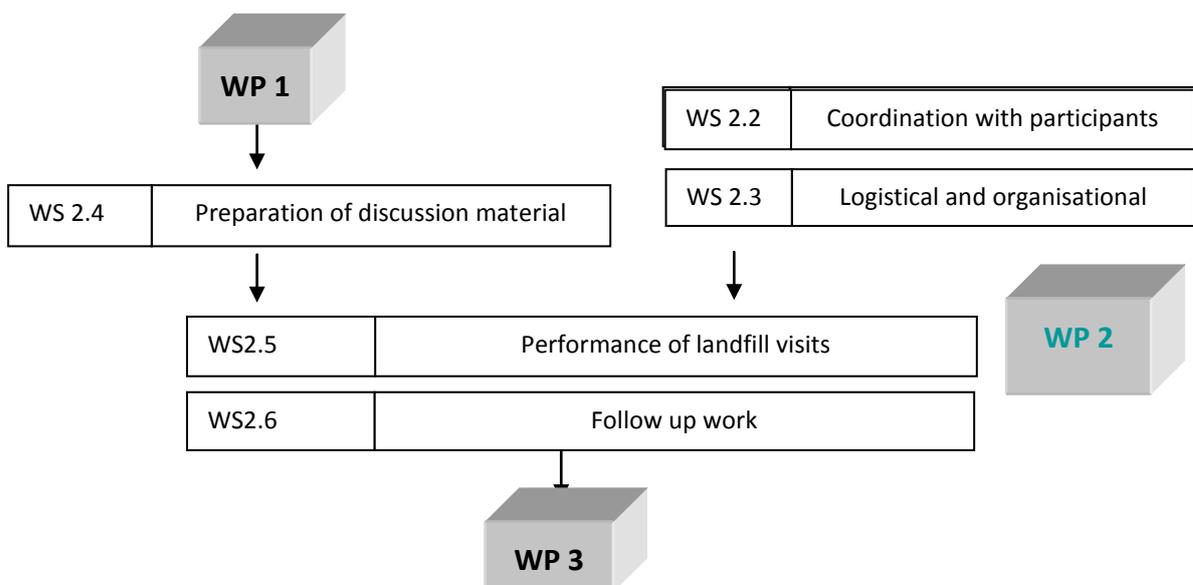


Figure 2-4: Working steps for landfills site visits and compliance check

In general, national authorities were invited to participate in site visits and meetings with the competent contact persons were organised when possible. In practice however, participation of national authorities in the majority of countries focussed on comments to the legal assessment performed, telephone and e-mail conversation and support for contacts with landfill operators.

The site visits included the preparation of supportive discussion material based on the legal analysis of the Member States (WP 1). This assessment was already finalised before visiting selected landfills and representatives of national competent authorities, in order to prepare specific questions.

During the site visits, a special focus was put on practical enforcement of the legal requirements (e.g. documentation of the basic characterisation, the methods and schemes used for compliance testing and the on-site acceptance procedures including the visual control procedures (see Annex III)).

Site visits were arranged in a language regime that allowed effective communication of all participants. Languages used in practice were English and also Bulgarian, Czech, Estonian, Greek, Polish, Romanian, Russian and Slovak. The project team could provide the corresponding language competence in English, Greek and Russian. Whenever necessary the site visits were organised with interpreting services.

Country reports, summary evaluation and recommendations

The country reports comprise the legal analysis and the experiences gained within the landfill visits. Country reports describe relevant national provisions and current practice in the visited landfills in detail and contain short summarising assessments of the state of legal implementation and practical application. Thus, they allow to compare different approaches taken, to justify certain divergences between national law and EU legislation text and to identify examples of good practice either in legislation or in daily practice.

Country reports form the basis for the summary evaluation and assessment of the state of implementation in EU-12 and are compiled as Annex to this report. Prior to inclusion into this report each summary of site visits and each country report was send to involved national cooperation partners for comments and approval and suggestions have been incorporated to the extent possible.

Recommendations are based on the comparative overview table related to the state of implementation as well as a compilation of major deficits derived from the individual country reports. In addition, they are based on identified good practice examples.

In Bulgaria the authorities used synergies with a current Twinning Project for organization of the site visits and visits have been performed jointly with experts from the two projects focusing on the different aspects of landfill they were interested in.

3 Summary evaluation of legal implementation and practical application

This chapter provides a condensed description of the state of implementation of WAC Decision requirements in the EU-12. This description is based on an in-depth analysis of relevant national legislation in force and other relevant subordinated documents and site visits to landfills in all Member States. Assessment of legal implementation and practical application is based on the key elements of the WAC Decision.

Hence the chapter is divided in a short presentation of key elements to take into consideration in the investigation, a legal analysis and an evaluation of site visits.

The legal assessment has been based on the documents provided by national authorities in response to a systematic request for relevant legislation and any additional document in place specifying waste management provisions apart from national/regional legislation by means of a short questionnaire and additional expert interviews. In case of identified "short-comings" national/regional authorities were contacted again to discuss the existence of possible other documents, specifying the missing information and draft country reports which formed the base for this summary evaluation, were disseminated to national authorities for comments.

The existence of additional documents such as guidelines, handbooks, circulars, etc has been mentioned in country reports and these documents have been included into the evaluation whenever possible and necessary to fill potential deficits and gaps. A full evaluation of any additional document not referred to in national legislation or not mentioned by Member State authorities as relevant was not performed, because such an overall European analysis would have exceeded the scope of this project.

3.1 Key elements of the WAC Decision

The assessment of the state of implementation of WAC Decision requirements by national law and current practice in the visited Member States was based on the key elements of the European Decision 2003/33/EC such as basic characterisation, compliance testing, on-site verification and acceptance criteria for the different landfill classes as compiled below.

Procedure for the acceptance of waste at landfills

Basic characterisation (function): The basic characterisation constitutes a full waste description for the purpose of a safe disposal, which is necessary for all types of waste. The proceeding shall provide information on waste composition and its behaviour in the landfill. Furthermore, it shall allow an assessment of waste against limit values and a determination of key variables as well as the frequency for compliance testing. Depending on the basic characterisation, the waste is accepted at the according landfill class. The waste producer or, in default, the person responsible for its management, is in charge to ensure that the information is correct. The Member States shall define the period for the operator to keep records of the required information.

Fundamental requirement for basic characterisation: This section lists the information necessary to fulfil the basic characterisation. Inter alia, it comprises information on the waste production, composition, appearance, source and origin of the waste.

Testing: Testing requirements are a crucial element of basic characterisation, which can be regarded as a general obligation for each type of waste. The content of the characterisation, the extent of laboratory testing and the relationship between basic characterisation and compliance checking depends on the type of waste generation. It is differentiated in regularly and not regularly generated wastes.

Cases where testing is not required: This section defines the cases where testing of the waste is not required.

Compliance testing: Compliance testing has to be done periodically (at least once a year) to check regularly arising waste streams. The relevant parameters to be tested are determined in the basic characterisation. Compliance testing shall at least consist of a batch leaching test and shall correspond to some of those used for basic characterisation. Member States shall define the period for the operator to keep records of the required information.

On-site Verification: Each load of waste delivered to a landfill site shall be visually inspected before and after unloading. Additionally, the required documentation shall be checked. Member States shall determine the testing requirements for on-site verification, and where appropriate rapid test methods. Furthermore, MS to determine the period for sample keeping.

Infobox 3-1: WAC Decision key elements are regards acceptance procedures

Waste Acceptance Criteria

In general, Member States shall define criteria for compliance with limit values set.

Criteria for landfills for inert waste: Criteria for inert waste landfills include a list of wastes accepted without testing, leaching limit values and limit values for the total content of organic waste. Guidance is provided with respect to criteria to comply with limits set. Member States shall determine which of the test methods and limit values shall be used. In addition, they shall set limit values for PAHs.

Criteria for landfills for non-hazardous waste: This section contains the possibility to create subcategories of landfill for non-hazardous waste and set limit values. In addition, it specifies the types of waste acceptable without testing and the procedures required in this case. Besides, it sets limit values for non-hazardous waste accepted in the same cells like stable non-reactive hazardous waste. Member States are requested to decide about the methods used for determination and the criteria applied for monolithic waste. Furthermore, restrictions and procedures are defined for gypsum waste.

Criteria for hazardous waste acceptable at landfills for non-hazardous waste: This element contains the definition of stable, non-reactive waste, leaching limit values for granular hazardous waste acceptable at landfills for non-hazardous waste and other criteria such as the content in TOC, pH and ANC. Member States shall determine which of the test methods and limit values shall be used. In addition, they shall set criteria for monolithic waste to provide the same level of environmental protection, criteria to ensure sufficient physical stability and bearing capacity and criteria to ensure that monolithic wastes are stable and non-reactive. Furthermore, specific procedures and requirements are set for asbestos waste.

Criteria for waste acceptable at landfills for hazardous waste: Criteria set comprise leaching limits for granular waste and limits for LOI, TOC and ANC. This includes guidance for measurement and procedures in case certain limits are exceeded. Member States shall determine which of the test methods and limit values shall be used and shall set criteria for monolithic waste to provide the same level of environmental protection.

Criteria for underground storage: The major acceptance criterion for underground storage is the site specific safety assessment as specified in Annex A. This safety assessment has to prove the long-term isolation of the wastes from the biosphere, taking into account e.g. local geological, geo-mechanical and hydro-geological conditions during the operational and post-operational phase. In addition, quite a number of wastes have to be excluded from underground storage due to associated risks. MS may issue lists of wastes acceptable. The set criteria have to be fulfilled by wastes under storage conditions. Furthermore, procedural requirements such as secure separation from mining activities, classification in groups of compatibility etc. have to be considered and addressed. There are specific regulations for salt mines and hard rock formations. The limit values and criteria set in the corresponding landfill chapters (see above) have to be met at underground storage sites for inert and non-hazardous waste. The compatibility with the safety assessment is the key criterion for underground storage sites for hazardous waste. If compatible, acceptance criteria for hazardous waste landfills do not apply. However, the waste must be subject to acceptance procedures including basic characterisation, compliance testing and on-site verification.

Infobox 3-2: WAC Decision key elements are regards acceptance criteria

Sampling and test methods: Sampling and testing may only be carried out by independent and qualified experts. Laboratories have to prove experience and efficient quality assurance systems. In this context, MS can decide upon the responsibility by selecting one of the two options. Furthermore, MS are obliged to draw up sampling plans for basic characterisation, compliance testing and on-site verification pursuant to the recently developed CEN sampling standard. Besides this, the methods set out in the decision have to be used in general. As long as formal CEN standards are not available; however, MS are allowed to use either national procedures and standards or the draft CEN standard when this has reached the prEN stage. Tests and analyses for which CEN standards are not yet available have to be approved by the competent authority

Infobox 3-3: WAC Decision key elements are regards sampling and testing standards

In order to be able to gather appropriate information and to standardise and facilitate data collection, all specific parameters and aspects discussed in 2003/33/EC under these topics, have been compiled in a list as basis for the assessment of the actual level of implementation (see Annex III).

3.2 Overview of WAC Decision implementation by national legislation

The evaluation of the compliance of national provisions with the WAC Decision shows two clear categories of implementation level:

Category 1: The WAC Decision requirements are not yet implemented by specific national legislation, but implementation is restricted to referral to article 16 and Annex II to the Landfill Directive or directly to the WAC Decision.

Category 1 comprises Malta, Estonia, Lithuania and Slovakia.

Competent authorities in Malta argue that such referral assures compliance with EU requirements, because the WAC Decision is directly applicable. Therefore, Malta does not have a relevant legislation in place.

Estonia, Lithuania and Slovakia have referrals to either general or specific sections of the WAC Decision.

It however, has to be noted that in these cases all decisions mandated to Member States in the WAC Decision are not put into place, so that a full implementation status cannot be attributed to these countries. Competent authorities in the Slovak Republic reported that they intend to up-date the national legislation accordingly.

Results in category one however, have to be further differentiated. Slovakia stated to prepare a legislation to implement the WAC Decision after the site visit in cooperation with the ministry. The elaboration and ratification are retarded due to the fact that competent authorities were not aware of the incomplete implementation. On the other hand no such efforts are ongoing as far as known at the moment in Malta. Further, Malta does not indicate a clear reference to the WAC Decision as the other MS provide.

Category 2: The WAC Decision has been transposed into national legislation, with several minor or more important differences as concerns specific details

Category 2 comprises the other Member States, which dispose of national legislation transposing the WAC Decision. However, also in this group of countries in several cases certain specific aspects of the WAC Decision are not fully adopted.

The following tables provide an overview of the status of implementation of WAC Decision requirements by national legislation of the EU-12 according to the explanation in chapter 2.

##PETER Tabellen kontrollieren

Implementation of the Decision 2003/33/EC												
	Bulgaria	Cyprus	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Malta	Poland	Romania	Slovenia	Slovakia
1. Acceptance Procedures												
1.1 Basic characterisation												
1.1.1 Function of basic characterisation	Dark Green	Amber	Dark Green	Amber	Dark Green	Amber	Red	Red	Dark Green	Amber	Amber	Red
1.1.2 Fundamental requirements for basic characterisation of the waste	Dark Green	Dark Green	Amber	Amber	Dark Green	Amber	Amber	Red	Dark Green	Amber	Amber	Red
1.1.3 Testing	Dark Green	Amber	Amber	Amber	Dark Green	Amber	Red	Red	Dark Green	Dark Green	Dark Green	Red
1.1.4. Cases where testing is not required	Dark Green	Dark Green	Dark Green	Amber	Dark Green	Amber	Amber	Red	Dark Green	Dark Green	Amber	Red
1.2 Compliance testing	Dark Green	Dark Green	Amber	Amber	Dark Green	Amber	Amber	Red	Dark Green	Amber	Amber	Red
1.3 On site verification	Dark Green	Dark Green	Amber	Dark Green	Dark Green	Amber	Amber	Red	Dark Green	Amber	Dark Green	Red

Table 3-1: Overview of implementation of 2003/33/EC procedures in Member State legislation (EU-12) in 2010

Bright green = identical, dark green = more stringent; amber = slight differences; red = not covered

As illustrated in the table above, implementation of EU requirements related to acceptance procedures is at least basically achieved in the majority of EU-12 Member States. Often the WAC Decision wording is even literally transposed into national legislation.

Minor divergences occur in several cases in the context of fundamental requirements of basic characterisation (certain points not mentioned), of compliance testing (specification of frequency, number of substances to test, specification on application of leaching test) and of on-site verification (visual inspection or sampling/testing obligation).

For further details see chapter 3.2.1.

As regards acceptance criteria, implementation by national legislation is largely achieved in the majority of EU-12 Member States (see Table 3-3).

Implementation of the Decision 2003/33/EC												
	Bulgaria	Cyprus	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Malta	Poland	Romania	Slovenia	Slovakia
2. Acceptance Criteria												
2.1 Criteria for landfills for inert waste												
2.1.1 List of wastes acceptable at landfills for inert waste without testing												
2.1.2 Limit values for waste acceptable at landfills for inert waste												
2.1.2.1 Leaching limit values												
2.1.2.2 Limit values for total content of organic parameters												
2.2 Criteria for landfills for non-hazardous waste												
2.2.1 Waste acceptable at landfills for non-hazardous waste without testing												
2.2.2 Limit values for non-hazardous waste co-disposed with stable non reactive hazardous waste												
2.2.3 Gypsum waste												
2.3 Criteria for hazardous waste acceptable at landfills for non hazardous waste, Art 6 c iii												
2.3.1 Leaching limit values												
2.3.2 Other criteria												
2.3.3 Asbestos waste												
2.4. Criteria of waste acceptable at landfills for hazardous waste												
2.4.1 Leaching limit values												
2.4.2 Other criteria												
2.5 Criteria for underground storage												

Table 3-2: Overview of implementation of 2003/33/EC acceptance criteria in Member State legislation (EU-12) in 2010

Bright green = identical, dark green = more stringent; amber = slight differences (might also comprise a combination of stricter regulation and specific divergence) or no existing specific legislation in place; red = not covered

As illustrated in the table above, compliance with EU requirements related to acceptance criteria is largely achieved in the majority of EU-12 Member States, with the WAC Decision wording in many cases being fully transposed into national legislation.

The number of divergences is smaller than for the basic procedural principles.

Divergences in contrast to the acceptance procedures comprise both certain deficits in adoption of EU requirements (fields marked in amber) and more stringent requirements at national level (fields marked in dark green).

It has to be noted that amber fields might comprise a combination of stricter requirements and minor deficits. Hence assessment in this case has to be made with care.

Aspects where national legislation tends to show certain divergences are:

- Lists of acceptable waste at inert waste landfills
- Limit values for total organic content in inert landfill
- Limits for non-hazardous waste in case of co-disposal with hazardous waste
- Leaching limits **and other criteria for hazardous waste at class B and class C landfills**

Major aspects which tend to be not addressed in national legislation are as follows:

- Criteria for monolithic waste and the warranty that the monolithic waste has the same level of environmental protection as given for granular waste. In many cases a separation of waste into granular and monolithic waste is not specified by national legislation;
- Criteria for stability and non-reactivity of hazardous waste to be landfilled on a class B landfill;
- Criteria for physical stability and bearing capacity of waste.

On the other hand EU-12 Member States set additional or divergent national provisions as regards:

- ANC and BNC ratio is measured;
- No permission of higher limit values;
- List of inert wastes exempted from testing.

As regards sampling and testing, all Member states are CEN National Members and a number of Member States make direct reference to the WAC Decision and therefore use the CEN standards. Only a few MS provide national standards and some give advice how to proceed in case no CEN standards are available yet.

For more details see chapter 3.2.1.

3.2.1 Detailed evaluation of state of implementation with respect to Acceptance Procedures

In the following, an overview of the implementation of the WAC Decision by national legislation and relevant divergences of the requested implementation is given. Hence, the different sections of the Annex to the WAC Decision are represented and in order to differentiate between overall results and MS specific divergences these are listed in detail.

3.2.1.1 Function of basic characterisation

According to the WAC Decision (see wording below) the basic characterisation shall provide all information necessary to assess the acceptability of a specific waste at the certain landfill class by means of written information and chemical analysis if relevant. In addition, it shall be used to

determine critical parameter and frequency of compliance testing and the waste producer shall be responsible and the operator shall keep a record for a certain period.

...

- (a) **Basic information on the waste** (type and origin, composition, consistency, leachability and — where necessary and available — other characteristic properties)
- (b) **Basic information for understanding the behaviour of waste in landfills** and options for treatment as laid out in Article 6(a) of the Landfill Directive
- (c) Assessing waste against limit values
- (d) **Detection of key variables** (critical parameters) for compliance testing and options for simplification of compliance testing (leading to a significant decrease of constituents to be measured, but only after demonstration of relevant information).

Characterisation may deliver ratios between basic characterisation and results of simplified test procedures as well as frequency for compliance testing.

If the basic characterisation of waste shows that the waste fulfils the criteria for a landfill class as laid down in section 2 of this Annex, the waste is deemed to be acceptable at this landfill class. If this is not the case, the waste is not acceptable at this landfill class.

The producer of the waste or, in default, the person responsible for its management, is **responsible** for ensuring that the characterisation information is correct.

The operator shall **keep records** of the required information for a period to be defined by the Member State.

Infobox 3-4: Wording WAC Decision chapter 1.1.1

Based on the evaluation of national legislations it can be stated that the wording of the WAC Decision concerning function of basic characterisation is literally implemented by some Member States (BG, RO, CY and PL). Sometimes the wording has changed, but includes all requirements to accordingly implement the function of the basic characterisation (CZ, HU, RO). In Cyprus all requirements for the function are transposed, however, smaller divergences could be identified.

In Estonian legislation, the function of the basic characterisation is only indirectly implemented by a general reference. In several other cases the basic characterisation is only transposed rudimentary or not at all (LV, MT, SK). In Latvian legislation it is stated that the basic characterisation including its function, fundamental requirements, testing and cases where testing is not required shall be implemented by permits and recommendations. However, this is not a proper legal transposition and has to be regarded as not implemented.

If the requirements for the basic characterisation are transposed into national legislation, usually a time for record keeping is set ranging from 3 to 10 years but also until the end of the aftercare phase for 30 years. In Romanian legislation, time for record keeping is not set as it is stated that the regional authority has to determine this period.

Based on the evaluation of national legislation it can be stated that the wording of the WAC Decision concerning function of basic characterisation is literally implemented by some Member States (BG, RO, CY and PL).

Some major divergences could be identified as some specifications are not properly transposed. For example Cyprus missed to indicate who is in charge and responsible for basic characterisation and also did not set any specific minimum requirements. Also Estonia does not provide a proper implementation of this section as only a vague referral to the WAC Decision is made.

3.2.1.2 *Fundamental requirements for basic characterisation of the waste*

The WAC Decision specifies in detail the information that shall be provided for the basic characterisation, as presented below:

- ...
- (a) Source and origin of the waste
 - (b) Information on the process producing the waste (description and characteristics of raw materials and products)
 - (c) Description of the waste treatment applied in compliance with Article 6(a) of the Landfill Directive, or a statement of reasons why such treatment is not considered necessary
 - (d) Data on the composition of the waste and the leaching behaviour, where relevant
 - (e) Appearance of the waste (smell, colour, physical form)
 - (f) Code according to the European waste list (Commission Decision 2001/118/EC) (1)
 - (g) For hazardous waste in case of mirror entries: the relevant hazard properties according to Annex III to Council Directive 91/689/EEC of 12 December 1991 on hazardous waste (2)
 - (h) Information to prove that the waste does not fall under the exclusions of Article 5(3) of the Landfill Directive
 - (i) The landfill class at which the waste maybe accepted
 - (j) If necessary, additional precautions to be taken at the landfill
 - (k) Check if the waste can be recycled or recovered

Infobox 3-5: Wording WAC Decision chapter 1.1.2

Most of the Member States implemented the basic characterisation and thereto related requirements, but miss to consider specific aspects of the fundamental requirements.

The section is literally implemented by Bulgaria, Cyprus and Poland.

Observed deficits in other Member States are as follows:

- Subsection k) of Section 1.1.2 of the Annex to the WAC Decision is not fully transposed into Czech legislation. Also Hungary implemented the full section accordingly except for point k) which is only partially implemented as recycling is not particularly mentioned, but economical re-use of the waste. According to the competent authorities this will be added to the amendment of the decision. Romania did not transpose point h) into national legislation; therefore waste due to section 5(3) of the landfill directive is not excluded from disposal.
- In some Member States this section is only indirectly implemented by referrals to the WAC Decision (EE) or by permits and recommendations (LT). Also in Maltese legislation the fundamental requirements are only requested by permits or completely missing. Slovenia requests the main part of this section in a form sheet for the basic characterisation. However, this is not a legal document.
- In Latvia the fundamental requirements are only defined for hazardous waste.
- Slovakia did not transpose this section into national legislation.

3.2.1.3 *Testing*

The WAC Decision chapter on testing comprises quite complex and detailed provisions. This includes the general testing obligation and the obligation to provide chemical information about the waste composition as well as the differentiation between procedures for regularly generated and not

regularly generated waste¹ with the requirement to focus on compositional range and variability of characteristic properties.

As a general rule waste must be tested [...]. In addition to the leaching behaviour, the composition of the waste must be known or determined by testing. The tests used for basic characterisation must always include those to be used for compliance testing.

The content of the characterisation, the extent of laboratory testing required and the relationship between basic characterisation and compliance checking depends on the type of waste. A differentiation must be made between:

- (a) wastes that are regularly generated in the same process;
- (b) wastes that are not regularly generated.

[...]

For [(a)]wastes the basic characterisation will comprise [...] especially the following:

- compositional range for the individual wastes,
- range and variability of characteristic properties,
- the leachability of the wastes determined by a batch leaching test and/or a percolation test and/or a pH dependence test,
- key variables to be tested on a regular basis.

If the waste is produced in the same process in different installations, information must be given on the scope of the evaluation. Consequently, a sufficient number of measurements must be taken to show the range and variability of the characteristic properties of the waste. [...].

For wastes from the same process in the same installation, the results of the measurements may show only minor variations of the properties of the waste in comparison with the appropriate limit values. The waste can then be considered characterised, [...] unless significant changes in the generation process occur.

Waste from facilities for the bulking or mixing of waste, from waste transfer stations or mixed waste streams from waste collectors, can vary considerably in their properties. This must be taken into consideration in the basic characterisation. Such wastes may fall under case (b).

(b) Wastes that are not regularly generated

[...]. Each batch produced of such waste will need to be characterised. [...] no compliance testing is needed.

Infobox 3-6: Wording WAC Decision chapter 1.1.3

In several Member States all aspects of the WAC Decision chapter on testing requirements (namely the different procedures between regularly and not regularly generated wastes) are more or less literally transposed in national legislation. A literal implementation can be observed in Bulgarian, Cypriote, Hungarian, Polish, Romanian and Slovenian legislation.

In Estonia this section is only indirectly implemented by referrals to the WAC Decision (EE) and in Lithuania by permits and recommendations.

Observed deficits:

- In Czech legislation the issue of regularly and not regularly generated waste is not discussed in particular, but legislation requests a demonstration of variability.
- The testing requirements are not implemented in Latvian, Maltese and Slovak legislation.

¹ Including facilities for the bulking or mixing of waste, from waste transfer stations or mixed waste streams from waste collectors.

Although the wording of the WAC Decision is largely adopted in most of the EU-12 Member States, it is in general not further specified how to determine the “compositional range and variability of characteristic properties”.

In this context the obligation, to annually re-new the basic characterisation as requested in a number of Member States, could be regarded as practical mean to determine and assess the variability of regularly generated wastes.

3.2.1.4 Cases where testing is not required

The WAC Decision allows the exemption from the testing obligation in case of three different occasions as presented in the box below.

Testing for basic characterisation can be dispensed with in the following cases:

- (a) the waste is on a list of wastes not requiring testing as laid down in section 2 of this Annex;
- (b) all the necessary information, for the basic characterisation, is known and duly justified to the full satisfaction of the competent authority;
- (c) certain waste types where testing is impractical or where appropriate testing procedures and acceptance criteria are unavailable. This must be justified and documented, including the reasons why the waste is deemed acceptable at this landfill class.

Infobox 3-7: Wording WAC Decision chapter 1.1.4

The three possibilities for exemptions provided for in the WAC Decision are more or less literally implemented by national legislation in six of the twelve the Member States (BG, CY, CZ, HU, PL, RO).

Observed deficits:

- Estonia and Lithuania indirectly implement this section by referral or permits and recommendations.
- Latvia misses to transpose section 1.1.4 b) of the annex to the WAC Decision into national legislation.
- In Slovene legislation the list excluding waste types from testing is extended.
- In Maltese and Slovak legislation the requirements are not set.

3.2.1.5 Compliance testing

The WAC Decision shortly stipulates the function of compliance testing and its relation to basic characterisation with the possibility to restrict to key parameter and a batch leaching test. Further important aspects are the frequency, the record keeping and the fact that wastes exempted from testing in basic characterisation are also exempted from any other testing (compliance, on-site).

When waste has been deemed acceptable [...] it shall subsequently be subject to compliance testing to determine if it complies with the results of the basic characterisation and the relevant acceptance criteria [...].

The function of compliance testing is periodically to check regularly arising waste streams.

The relevant parameters to be tested are determined in the basic characterisation. Parameters should be related to basic characterisation information; only a check on critical parameters (key variables), [...] is necessary. The check has to show that the waste meets the limit values for the critical parameters.

The tests used for compliance testing shall be one or more of those used in the basic characterisation.

The testing shall consist at least of a batch leaching test. For this purpose the methods listed under section 3 shall be used.

Wastes that are exempted from the testing requirements for basic characterisation [...] are also exempted from compliance testing. They will, however, need checking for compliance with basic characterisation information other than testing.

Compliance testing shall be carried out at least once a year and the operator must, in any event, ensure that compliance testing is carried out in the scope and frequency determined by basic characterisation.

Records of the test results shall be kept for a period that will be determined by the Member State.

Infobox 3-8: Wording WAC Decision chapter 1.2

Member States in general adopt the wording of the WAC Decision in their national legislation. This comprises the possibility to restrict to key parameter and to a batch leaching test and the fact that wastes exempted from testing in basic characterisation are also exempted from any other testing. However, several Member States did not transpose accordingly this section into national legislation including Malta, Estonia, Lithuania and Slovakia.

The frequency for compliance testing in most cases is fixed to one year. Periods for record keeping sometimes depend on the type of landfill and waste and range from one month to 30 years.

Observed deficits:

- In Czech legislation a batch leaching test is not set as obligatory for compliance testing;
- Estonian and Lithuanian legislation only indirectly implement this section by referral and permits;
- Latvian legislation misses to set a time for record keeping;
- This section is hardly transposed into Maltese legislation as frequency, sample keeping and minimum requirement of a batch leaching test are not set;
- According to Romanian legislation, regional authorities have to determine the time for record keeping;
- In Slovenia, a time for record keeping for documents evidencing the quality of the waste received at the facility is not set.

Best practice:

- In Czech legislation compliance testing of all regular and repeatedly irregularly generated waste – delivered by operators of a waste collection and purchasing facility – is performed twice a year.

3.2.1.6 On-site verification

As concerns on-site verification the focus of WAC Decision requirements is the control of required documentation and visual inspection. Periodic sampling is another key obligation.

In addition the decision allows verification at the point of departure in certain cases and requests MS to determine on-site testing requirements (see Infobox 3-9).

Each load of waste delivered to a landfill shall be visually inspected before and after unloading. The required documentation shall be checked.

For waste deposited by the waste producer at a landfill in his control, this verification may be made at the point of dispatch.

The waste may be accepted at the landfill, if it is the same as that which has been subjected to basic characterisation and compliance testing and which is described in the accompanying documents. If this is not the case, the waste must not be accepted.

Member States shall determine the testing requirements for on-site verification, including where appropriate rapid test methods.

Upon delivery, samples shall be taken periodically. The samples taken shall be kept after acceptance of the waste for a period that will be determined by the Member State (not less than one month [...]).

Infobox 3-9: Wording WAC Decision chapter 1.3

On-site verification is the aspect of acceptance procedures where consistency with the WAC Decision text shows some deficits. Differences do not affect the check of documentation, but focus on visual inspection, sampling and testing.

Bulgaria, Cyprus, Estonia, Hungary, Poland and Slovenia have literally implemented this section.

Observed deficits:

- In the Czech Republic, it is not explicitly stipulated that a visual inspection has to be performed before and after unloading;
- Lithuania only indirectly implements this section by permits and recommendations;
- Latvian legislation only stipulates sampling and sample keeping for hazardous waste;
- According to Romanian legislation regional authorities have to determine the time for sample keeping;
- Lack of implementation in Maltese and Slovak legislation.

Assessment of observed deficits:

From the practical point of view the restriction to one visual inspection appears to be reasonable, due to the fact that most vehicles are closed and inspection before unloading would largely restrict to the top layers in case standardised collection vehicles are used and waste has undergone pre-treatment. In contrary, it would make sense in countries with low separation at source in order to sort out bulky waste, metals, green waste and WEEE at the landfill entry.

The lack of sampling and testing obligations is a crucial deficit, which should be clarified and justified. No testing would be in accordance with WAC Decision requirements for exempted wastes (inert, MSW, testing impracticable), but not as regards other waste which in theory are acceptable at the landfill classes with testing. So far, there is no indication that Member States without sampling obligation or without definition of storage periods restrict waste acceptance exclusively to wastes on short lists or other exempted wastes.

In Romanian legislation, theoretically the requirements for on-site verification are accordingly implemented even if the regional authorities are thereafter in charge for determining the time for sample keeping.

In addition, it should be discussed and decided upon whether the WAC Decision sampling obligation in relates to analysis or whether it is an independent obligation to comply with.

3.2.2 Detailed evaluation of state of implementation with respect to Acceptance Criteria

The majority of EU-12 Member States implemented the WAC Decision requirements concerning the acceptance criteria. In general, the classification of the landfills is in line with the WAC Decision. In Czech Republic and Hungary additional subcategories for class B landfills have been defined.

Some major deficits could be identified in Latvian legislation.

Slovak legislation refers to 2.1.2 of the Annex to the WAC Decision, but a specific referral is missing for most of the relevant sections (e.g. other criteria, gypsum waste and asbestos waste) and the requested criteria are not set.

Malta did not transpose the requirements for the acceptance criteria into national legislation.

As concerns acceptance criteria, divergences focus on missing obligation to evaluate the ANC, missing PAH limit value, lack of specific criteria for monolithic waste as well as physical stability and bearing capacity. Some Member States also defined additional restrictions.

3.2.2.1 Acceptability of higher limit values

Chapter 2 of the Annex to the WAC Decision (see Infobox 3-10) specifies the cases, where higher limits than those set in the Decision can be permitted, and where not and requests Member States to report about such permits.

In certain circumstances, up to three times higher limit values for specific parameters listed in this section [...] are acceptable, if

- the competent authority gives a permit for specified wastes on a case-by-case basis for the recipient landfill, taking into account the characteristics of the landfill and its surroundings, and
- emissions (including leachate) from the landfill, taking into account the limits for those specific parameters in this section, will present no additional risk to the environment according to a risk assessment.

Member States shall report to the Commission on the annual number of permits issued under this provision. [...].

Member States shall define criteria for compliance with the limit values set out in this section.

Further limitations:

No possibility for exemption for:

- DOC in sections 2.1.2.1, 2.2.2, 2.3.1 and 2.4.1, (i.e. class A, B und C)
- BTEX, PCBs and mineral oil in section 2.1.2.2, (class A)
- TOC and pH in section 2.3.2 (class B in case of co-disposal)
- LOI and/or TOC in section 2.4.2 (class C)

Possible increase of the limit value for TOC in section 2.1.2.2 (class A) to only two times the limit value

Infobox 3-10: Wording WAC Decision chapter 2

Following the analysis of corresponding national legislation it can be stated, that most MS having implemented the WAC Decision provisions related to waste acceptance criteria, accordingly transposed the requirements to accept higher limits and have incorporated provisions to establish registers about such permits in order to be able to report the information to the EU Commission.

Observed deficits:

- The TOC value can be exceeded in case of landfills for co-disposal of hazardous and non-hazardous waste (CZ);
- An exceedance of higher limit value is only allowed if a water treatment plant is installed then it can be even higher than 3 times (the regulation has passed a technical notification of the European Commission) (PL);
- Obligation to notify such permits to the EC, is not explicitly mentioned (SI).

Examples of good practice:

- For inert waste landfills the TOC and hydrocarbon C₁₀-C₄₀ are not allowed to be exceeded (CZ);
- No higher limit values are allowed by national legislation (LV).

3.2.2.2 List of wastes acceptable at landfills for inert waste without testing

WAC Decision chapter 2.1.1 defines in detail under which conditions a number of wastes can be exempted from the testing obligation (see Infobox 3-11). Important features are the knowledge about the origin and the exclusion of a contamination with other substances.

Wastes on the [...] short list [...] can be admitted without testing at a landfill for inert waste. The waste must be a single stream (only one source) of a single waste type. Different wastes contained in the list maybe accepted together, provided they are from the same source. In case of suspicion of contamination (either from visual inspection or from knowledge of the origin of the waste) testing should be applied or the waste refused. If the listed wastes are contaminated or contain other material or substances such as metals, asbestos, plastics, chemicals, etc. to an extent which increases the risk associated with the waste sufficiently to justify their disposal in other classes of landfills, they may not be accepted in a landfill for inert waste. If there is a doubt that the waste fulfils the definition of inert waste [...] or about the lack of contamination [...], testing must be applied. [...]

Waste not appearing on this list must be subject to testing

Infobox 3-11: Wording WAC Decision chapter 2.1.1

WAC Decision short list and provisions:

1. Glass based fibres (101103) in case without organic binders
2. Glass (150107, 170202, 191205) and 200102 (if separately collected)
3. Concrete (170101), Bricks (170102), Tiles and ceramics (170103) and mixtures thereof (170107) in case the are:
 - (*) Selected construction and demolition waste: with low contents of other types of materials (like metals, plastic, soil, organics, wood, rubber, etc). The origin of the waste must be known.
 - No C & D waste from constructions, polluted with inorganic or organic dangerous substances, e.g. because of production processes in the construction, soil pollution, storage and usage of pesticides or other dangerous substances, etc., unless it is made clear that the demolished construction was not significantly polluted.
 - No C & D waste from constructions, treated, covered or painted with materials, containing dangerous substances in significant amounts.
4. Soil and stones (170504) but excluding topsoil and peat and contaminated soil and (200202) if restricted to garden and park waste and excluding topsoil and peat.

Infobox 3-12: Wording WAC Decision chapter 2.1.1

In general, the acceptance criteria concerning waste to be disposed without testing at landfills for inert waste are fully implemented in the national legislations transposing the requirements for inert waste landfills. Only in some Member States divergences exist which represent both a more stringent acceptance of waste and a not fully compliant implementation of the WAC Decision requirements.

Observed deficits:

- The footnote (*) is only partially transposed into national legislation (HU);
- It is not set that waste may be accepted without testing if it is a single stream (one source) of a single type and that different wastes may be accepted together provided they are from the same source (HU; PL);
- In the WAC Decision two supplements are part of the footnote of the table for the short list, which exclude C&D waste polluted with inorganic or organic substances or containing dangerous substances in significant amounts. These supplements are implemented by Latvian legislation by defining that inclusions may not exceed 15% of the total waste.

However an additional footnote demands that waste which can be accepted without compliance testing has to be in accordance with national legislation;

- A specific and clear referral is not made to this section (MT, SK)²
- The short list is extended with the additional EWCS 01 03 06, 01 04 08, 01 04 12, 19 12 09 (SI);
- The footnote of 17 01 01, 17 01 02, 17 01 03 and 17 01 07 is shortened (SI).

Examples of good practice:

- The short list including waste exempted from testing is shortened as the waste code 19 12 05 is missing (CZ);

3.2.2.3 *Leaching limit values for inert waste*

As concerns leaching limits for inert waste, the definition of the appropriate test method and the adoption of potential exemptions are the critical parameter for the correct implementation of WAC Decision requirements.

Member States shall determine which of the test methods (see section 3) and corresponding limit values in the table should be used.

(*) If the waste does not meet these values for sulphate, it may still be considered as complying with the acceptance criteria if the leaching does not exceed either of the following values: 1 500 mg/l as CO at L/S = 0,1 l/kg and 6 000 mg/kg at L/S = 10 l/kg. It will be necessary to use a percolation test to determine the limit value at L/S = 0,1 l/kg under initial equilibrium conditions, whereas the value at L/S = 10 l/kg maybe determined either by a batch leaching test or by a percolation test under conditions approaching local equilibrium.

(**) If the waste does not meet these values for DOC at its own pH value, it may alternatively be tested at L/S = 10 l/kg and a pH between 7,5 and 8,0. The waste maybe considered as complying with the acceptance criteria for DOC, if the result of this determination does not exceed 500 mg/kg. (A draft method based on prEN 14429 is available).

(***) The values for total dissolved solids (TDS) can be used alternatively to the values for sulphate and chloride

Infobox 3-13: Wording WAC Decision Chapter 2.1.2.1

Besides, the Member States (Malta, Slovakia) which did not yet put in place specific legislation, the majority of countries have directly adopted the WAC Decision limits. As concerns, additional possibilities or limitations to permit higher limit values see chapter 3.2.2.1.

Observed deficits:

- The section is only implemented by referral to the WAC Decision; however, a specific referral is missing (SK);
- Lack of implementation (MT);

² If this means that waste may only be accepted with testing it would be a more stringent approach and could be classified as good practice. However, based on current knowledge, such testing is not in place, so that it has to be considered a deficit.

- In Poland higher leaching limit values are possible due to additional exemptions in case the leachate is collected and channelled to a sewage treatment plant (however the regulation has passed a technical notification of the European Commission);

Examples of good practice:

- Footnotes (*) and (**) are not implemented and therefore additional exemptions for sulphate and DOC not allowed (CZ);
- Possible higher limit value for sulphate is not implemented (LT);
- Difference concerning the footnote of the table (as the footnotes concerning higher limit values for sulphate and DOC have not been adopted) (PL);

3.2.2.4 Limit values for total content of organic parameters (inert waste)

Inert wastes have to meet limits for:

1. TOC: (*) In the case of soils, a higher limit value maybe admitted [...], provided the DOC value of 500 mg/kg is achieved at L/S = 10 l/kg, either at the soil's own pH or at a pH value between 7,5 and 8,0.
2. BTEX
3. PCB (7 congeners)
4. Mineral oil (C10 to C 40)
5. PAHs (Member States to set limit)

Infobox 3-14: Provisions/wording WAC Decision chapter 2.1.2.2.

Most of the MS have fully implemented the WAC Decision limits by their national legislation. In Slovak legislation it is only vaguely referred to the WAC Decision. As regards potential divergences concerning permits for higher BTEX, PCB, mineral oil and TOC limits see chapter 3.2.2.1.

Observed deficits:

- A PAH limit value is not set (CY, EE, LV, MT; RO, SK);
- The footnote (*) is not fully transposed as the pH is missing (CZ);
- According to Romanian legislation regional authorities are responsible to set a PAH limit value (RO)³;
- Lack of implementation (MT, SK).

Examples of good practice:

- A higher limit value for TOC in soil is not possible (HU; LT).

As illustrated in below specific limit values for PAHs are often set if specific legislation is in place except for Cypriote, Estonian, Latvian, Romanian and Slovak legislation. But set limits differ considerably both in terms of height and number of included substances.

MS	[mg/kg]
BG	1,000
CZ	80 (12 substances)
HU	1 (16 congeners)
LT	100
PL	1
SI	6 (6 substances)

Table 3-3: Overview of PAH limit values set by MS

³Although in theory this might be in line with EU requirements, MS should avoid having different limits by region; in addition it was not possible to get concrete information whether such limits are set and legally binding.

3.2.2.5 *Criteria for landfills for non-hazardous waste*

According to the WAC Decision, Member States may create subcategories of landfills for non-hazardous waste. [WAC Decision] limit values are laid down only for non-hazardous waste, which is landfilled in the same cell with stable, non-reactive hazardous waste.

The possibility to define subcategories of class B landfills has been used by Czech Republic and Hungary.

In case, co-disposal of stable non-reactive hazardous waste is not permitted, the limit values set in the WAC Decision are not valid. Member States are free to decide about limit values to meet.

Different types of B landfills defined by Member States are as follows:

CZ:

- Inert waste landfills:
 - Group S-inert waste, defined as S-IO for records and reporting.
- Non-hazardous waste landfills:
 - Group S-other waste, defined as S-OO with the following subcategories:
 - **S-001:** landfill or landfill sectors designated for the storage of waste in the “other waste” category containing low levels of organic biodegradable matter and waste containing asbestos,
 - **S-002:** landfills or landfill sector designated for the storage of waste in the “other waste” category containing low levels of organic biodegradable matter, non-reactive hazardous waste and waste containing asbestos,⁴
 - **S-003:** landfills or landfill sectors designated for the storage of waste in the “other waste” category containing high levels of organic biodegradable matter, wastes that cannot be evaluated on the basis of their leachate, and waste containing asbestos. No plaster-based waste may be stored in these landfills or landfill sectors.
- Hazardous waste landfills:
 - Group S-hazardous waste, defined as S-NO for records and reporting.

HU:

- Inert waste landfills (class A)

⁴ Subcategory S-002 was cancelled by amendment from 1st April 2010 of the Decree No. 294/2005 which enters into force on 1st April 2012. Conditions for the disposal of hazardous waste in S-OO landfills (non-hazardous landfills) as laid down in section 3 remain to be applied except for §4.

- Non-hazardous waste landfills with the following subcategories:
 - Inorganic non-hazardous waste (subcategory B1b),
 - Mixed non-hazardous waste with significant organic content (subcategory B3),
- Hazardous waste landfills (class C)

3.2.2.6 *Waste acceptable at landfills for non-hazardous waste without testing*

Provisions for landfilling of MSW including a pre-treatment obligation and the mandatory separation from hazardous waste as well as potential short lists for non-hazardous waste are the key elements that have to be taken into account for the assessment of chapter 2.2.1 (see Infobox 3-15).

Municipal waste [...] classified as non-hazardous in Chapter 20 of the European waste list, separately collected non-hazardous fractions of household wastes and the same non-hazardous materials from other origins can be admitted without testing at landfills for non-hazardous waste. The wastes may not be admitted if they have not been subjected to prior treatment [...], or if they are contaminated [...]. They may not be accepted in cells, where stable, non-reactive hazardous waste is accepted [...].

Infobox 3-15: Wording WAC Decision chapter 2.2.1

Most of the MS have directly transposed the WAC Decision wording into national legislation.

In addition more stringent provisions have been established e.g. as Hungary set that some waste types can be accepted without testing but waste type 20 01 41 is excluded from this exception. Further, Polish legislation states that MSW has to fulfil additionally set limit values (TOC: 5 % dry matter, LOI: 8 % dry matter, H₀: 6 MJ/kg dry matter). In Slovene legislation cases without testing are not defined, testing is compulsory.

Maltese and Slovak legislation do not implement this section.

3.2.2.7 Leaching limit values for non-hazardous waste (accepted in the same cells as hazardous waste)

The leaching limit set, the methods to be used and the criteria for monolithic waste are the key parameter to be checked with regard to implementation of WAC Decision requirements.

“...limit values apply to granular non-hazardous waste accepted in the same cell as stable, non-reactive hazardous waste. [...]

Granular wastes include all wastes that are not monolithic.

Member States shall determine which of the test methods [...] and corresponding limit values [...] shall be used.

Member States shall set criteria for monolithic waste to provide the same level of environmental protection given by the above limit values.”

[There are additional provisions for DOC and TDS:]

(*) If the waste does not meet these values for DOC at its own pH, it may alternatively be tested at L/S = 10 l/kg and a pH of 7,5-8,0. The waste maybe considered as complying with the acceptance criteria for DOC, if the result of this determination does not exceed 800 mg/kg (A draft method based on prEN 14429 is available).

(**) The values for TDS can be used alternatively to the values for sulphate and chloride.

Infobox 3-16: Wording WAC Decision chapter 2.2.2

In general it can be stated that the WAC Decision limit values are fully adopted and literally implemented by national legislation for at least one class B subcategory, with L/S=10l/kg as the major testing method chosen. In single cases the national legislation refers to the WAC Decision (EE) or all three columns are presented in national legislation.

Limit values:

In general leaching limit values set by the MS are the same as provided by the WAC Decision.

Observed deficits:

- In Czech legislation the leaching limit values for S-OO3 for which no limit values are set by the WAC Decision are much higher than those set for stable non-reactive, hazardous waste accepted at landfills for non-hazardous waste (S-OO2). As S-OO1 accepts the disposal of asbestos waste a co-disposal of non-hazardous waste and hazardous waste is given and the following limit values regarding S-OO1 are set to high. For S-OO1 and S-OO3 the pH value is 6 and the leaching limit values are set as follows (mg/kg): As 25, Ba 300, Cd 5, Total Cr 70, Cu 100, Hg 2, Ni 40, Pb 50, Sb 5, Se 7, Zn 200, Mo 30, Fluoride 30, Sulphates 30,000, DOC 80,000. In case the amendment from 1st April 2010 of the Decree No. 294/2005 which enters into force on 1st April 2012 and which cancels the sub-category S-OO2 other hazardous waste can be co-disposed in S-OO1;
- National legislation contains only a vague referral to the WAC Decision (EE);
- Municipal waste is used instead of the term “non-hazardous waste”, which therefore can be disposed of together with stable, non-reactive waste according to national law (LV);
- Lack of implementation (MT, SK);

- In Poland higher leaching limit values are possible due to additional exemptions in case the leachate is collected and channelled to a sewage treatment plant;
- Footnote (*) is divergent as no pH value is mentioned (SI).

Examples of good practice:

- In Estonian legislation it is mentioned that waste has to be pre-treated before disposing it off at landfills; this also includes mixed municipal waste which has to be stored;
- EWC 20 01 41 is excluded from the types of waste which can be accepted without testing (HU);
- Non-hazardous waste also has to comply with the other criteria set by the WAC Decision for stable, non-reactive hazardous waste (LT).

Criteria for monolithic waste to provide same level of environmental protection

Criteria to provide the same level of environmental protection as given by the leaching limits for granular waste are defined by some Member States. In single cases monolithic waste (normally interpreted as solidified/stabilised waste) has to comply with the same leaching limits as granular waste (e.g. BG, HU).

Observed deficits:

- Although it is requested that monolithic waste shall provide the same level of environmental protection as given by the limit values for granular waste from the corresponding tables there is not specification how this can be achieved (BG).
- No criteria for monolithic waste are set (CY, EE, LV, MT, RO, SI, SK);
- Limit values for monolithic waste to be disposed of at a corresponding landfill site have to be determined in the basic characterisation (PL);
- According to Romanian legislation, regional environmental agencies have to set criteria to ensure that monolithic waste provides the same environmental protection as given for granular waste.

In case monolithic waste is not discussed it can be argued, that the limit values set are automatically valid both for granular and monolithic waste and the analysis has to be done according to CEN standards under elaboration. On the other hand, this approach does not cover the issue of setting criteria to ensure that hazardous monolithic waste is stable and non-reactive before acceptance at class B landfills.

In Romanian legislation, theoretically the requirements for setting criteria for monolithic waste are accordingly implemented even if the regional authorities are thereafter in charge for determining the criteria. Nevertheless, it has to be noted that the regional authorities are facing enormous problems to fulfil in practice these responsibilities.

Examples of good practice:

- The same criteria and test methods as for the same type of granular waste after the monolithic waste was crushed (HU);
- Criteria for monolithic waste are well implemented for each type of landfill class, including separated tables (LT).

3.2.2.8 *Gypsum waste*

The purpose of this section is to avoid any co-disposal of gypsum waste with biodegradable materials to avoid any kind of H₂S origin.

“Non-hazardous gypsum-based materials should be disposed of only in landfills for non-hazardous waste in cells where no biodegradable waste is accepted. The limit values for TOC and DOC given in sections 2.3.2 and 2.3.1 shall apply to wastes landfilled together with gypsum-based materials.”

Infobox 3-17: Wording WAC Decision chapter 2.2.3

Most of the Member States have fully implemented the WAC Decision provisions for disposal of gypsum waste) and in rare cases even exceed the WAC Decision requirements.

Observed deficits:

- Special provisions for co-disposal of gypsum waste are not implemented (EE);
- No TOC or DOC limit values are requested (LV).

Examples of good practice:

- Waste containing high concentrations of sulphate (except gypsum) are included additionally (LT);
- Gypsum waste is only allowed to be disposed of at landfills for non-hazardous waste if the limit values for DOC and TOC which are identical to the WAC Decision are met (PL).

3.2.2.9 *Leaching limit values (for stable non-reactive hazardous waste acceptable at landfills for non-hazardous waste pursuant to Article 6(c)(iii))*

This section analyses the different leaching limit values of stable non-reactive hazardous waste that is disposed of on landfills for non-hazardous waste. In addition, Member States are requested to set criteria for monolithic waste and criteria to ensure that the waste has sufficient physical stability and bearing capacity are analysed.

“...leaching limit values apply to granular hazardous waste acceptable at landfills for non-hazardous waste
 Member States shall determine which of the test methods and corresponding limit values should be used.
 Member States shall set criteria for monolithic waste to provide the same level of environmental protection given by the above limit values.”
 [There are additional provisions for DOC and TDS:]
 “(*) If the waste does not meet these values for DOC at its own pH, it may alternatively be tested at L/S = 10 l/kg and a pH of 7,5-8,0. The waste maybe considered as complying with the acceptance criteria for DOC, if the result of this determination does not exceed 800 mg/kg (A draft method based on prEN 14429 is available).
 (**) The values for TDS can be used alternatively to the values for sulphate and chloride.”

Infobox 3-18: Wording WAC Decision chapter 2.3.1

In general implementation of this section by Member State legislation is achieved. Differences as regards leaching limits and criteria for monolithic waste are similar as for non-hazardous waste landfilled in the same cell.

Observed deficits:

- A definition for stable, non-reactive hazardous waste is not provided (LV);
- In Poland higher leaching limit values are possible due to additional exemptions in case the leachate is collected and channelled to a sewage treatment plant.

3.2.2.10 Other criteria (for hazardous waste acceptable at class B landfills)

As concerns other criteria, provisions for TOC, pH and ANC as well as criteria to ensure sufficient physical stability and bearing capacity and criteria to ensure that monolithic waste is stable and non-reactive before acceptance are the key parameter for assessment of implementation level (see Infobox 3-19).

In addition to the leaching limit values under section 2.3.1, granular wastes must meet the following additional criteria:

1. TOC: (*) If this value is not achieved, a higher limit value maybe admitted by the competent authority, provided that the DOC value of 800 mg/kg is achieved at L/S = 10 l/kg, either at the material's own pH or at a pH value between 7,5 and 8,0.
2. pH
3. ANC (must be evaluated)

Member States must set criteria to ensure that the waste will have sufficient physical stability and bearing capacity.

Member States shall set criteria to ensure that hazardous monolithic wastes are stable and non-reactive before acceptance in landfills for non-hazardous waste.

Infobox 3-19: Wording WAC Decision chapter 2.3.2

TOC, pH and ANC

Whereas the majority of EU-12 Member States has literally adopted the WAC Decision limits for other criteria, some Member States have not defined the obligation to determine the ANC given the lack of a related limit value.

Observed deficits:

- In some countries the obligation to determine the ANC is not implemented (e.g. CY, CZ).

Examples of good practice:

- Acceptance of a higher limit value for TOC is not implemented (e.g. HU).

Physical stability and bearing capacity

Only some Member States have implemented criteria for the physical stability and bearing capacity of the waste whereas this section could be identified as one of the most frequent lack of implementation.

Observed deficits:

- Criteria for granular hazardous waste have to be set to ensure that the waste will have sufficient physical stability and bearing capacity (BG);
- Physical stability and bearing capacity are not defined (CY, CZ);
- Physical stability and bearing capacity are indicated in the obligatory form sheet which is not a legal document (SI);

Non-reactivity of stabilised waste

The majority of Member States request in the national legislation a non-reactivity as stipulated in the WAC Decision. More specific criteria for determination of non-reactivity; however, are not set.

3.2.2.11 Asbestos waste

This section of the WAC Decision defines in detail the management provisions for asbestos waste to be disposed of on a non-hazardous waste landfill.

Construction materials containing asbestos and other suitable asbestos waste may be landfilled at landfills for non-hazardous waste in accordance with Article 6(c)(iii) of the Landfill Directive without testing.

For landfills receiving construction materials containing asbestos and other suitable asbestos waste the following requirements must be fulfilled:

- the waste contains no other hazardous substances than bound asbestos, including fibres bound by a binding agent or packed in plastic,
- the landfill accepts only construction material containing asbestos and other suitable asbestos waste. These wastes may also be landfilled in a separate cell of a landfill for non-hazardous waste, if the cell is sufficiently self-contained,
- in order to avoid dispersion of fibres, the zone of deposit is covered daily and before each compacting operation with appropriate material and, if the waste is not packed, it is regularly sprinkled,
- a final top cover is put on the landfill/cell in order to avoid the dispersion of fibres,
- no works are carried out on the landfill/cell that could lead to a release of fibres (e.g. drilling of holes),
- after closure a plan is kept of the location of the landfill/cell indicating that asbestos wastes have been deposited,
- appropriate measures are taken to limit the possible uses of the land after closure of the landfill in order to avoid human contact with the waste.

For landfills receiving only construction material containing asbestos, the requirements set out in Annex I, point 3.2 and 3.3 of the Landfill Directive can be reduced, if the above requirements are fulfilled.

Infobox 3-20: Wording WAC Decision chapter 2.3.3.

The requirements for the proper disposal of asbestos waste have been implemented by all MS with relevant legislation in place. However, some significant divergences could be identified.

Observed deficits:

- The provision for the ‘final top cover’ is missing (LT);
- It is not stated that no works may be carried out on the landfill/cell that could lead to release of fibres (LT);
- The provisions to keep a plan after closure of the precise location where the asbestos waste is disposed of is not implemented (LT, PL);
- It is not transposed into national legislation that appropriate measures have to be taken to limit the possible uses of the land after closure of the landfill in order to avoid human contact with the waste (LT).

Examples of good practice:

- Requirements set out in Annex I, 3.2 and 3.3 of the Landfill Directive cannot be reduced in case a landfill only receives construction material containing asbestos waste (LV).

3.2.2.12 Leaching limit values for hazardous waste landfills

Key parameters for the evaluation of implementation of this section of the WAC Decision by national legislation correspond to those for class B landfills.

...“leaching limit values apply for granular waste acceptable at landfills for hazardous waste, [...] Member States shall determine which of the test methods and corresponding limit values in the table should be used.

Member States shall set criteria for monolithic waste to provide the same level of environmental protection given by the above limit values.

“(*) If the waste does not meet these values for DOC at its own pH, it may alternatively be tested at L/S = 10 l/kg and a pH of 7,5-8,0. The waste may be considered as complying with the acceptance criteria for DOC, if the result of this determination does not exceed 1 000 mg/kg. (A draft method based on prEN 14429 is available.)

(**) The values for TDS can be used alternatively to the values for sulphate and chloride.”

Infobox 3-21: Wording WAC Decision chapter 2.4.1

Where relevant legislations are in place, generally the Member States have implemented WAC Decision requirements for class C landfills. Some deficits can be observed as concerns criteria for monolithic waste. These are the same or very similar as described above for non-hazardous waste landfills. Also some additional requirements could be identified.

Observed deficits:

- In Poland higher leaching limit values are possible due to additional exemptions in case the leachate is collected and channelled to a sewage treatment plant.

Examples of good practice:

- National legislation does not contain footnotes (*) and (**) and hence is more strict than EU requirements (CZ);
- Acceptance for a higher limit value for sulphate and TOC is not implemented (LT);
- Difference concerning the footnote of the table regarding the possible exceedance of the DOC value is not implemented (PL).

3.2.2.13 Other criteria (to be met by hazardous waste destined for class C landfills)

“In addition to the leaching limit values [...] hazardous wastes must meet [...] [total content limits for:
LOI: (*) Either LOI or TOC must be used.
TOC: (**) If this value is not achieved, a higher limit value maybe admitted by the competent authority,
provided that the DOC value of
1,000 mg/kg is achieved at L/S = 10 l/kg, either at the material's own pH or at a pH value between 7,5 and
8,0.
ANC: Must be evaluated”

Infobox 3-22: Wording WAC Decision chapter 2.4.2

Most of the MS having implemented the WAC Decision also adopted accordingly the limits for other criteria. However, in some MS legislations divergences exist.

Observed deficits:

- The obligation to measure the ANC is not set (CY, CZ, LV, SI);
- In footnote (**) no pH is mentioned.

Examples of good practice:

- The ratio of ANC/BNC has to be measured;
- Acceptance for a higher limit value for sulphate and TOC is not implemented (LT).

3.2.2.14 Provisions for sampling and testing

Sampling and testing for basic characterisation and compliance testing shall be carried out by independent and qualified persons and institutions. Laboratories shall have proven experience in waste testing and analysis and an efficient quality assurance system.

Member States may decide that:

1. the sampling maybe carried out by producers of waste or operators under the condition that sufficient supervision of independent and qualified persons or institutions ensures that the objectives set out in this Decision are achieved;
2. the testing of the waste maybe carried out by producers of waste or operators if they have set up an appropriate quality assurance system including periodic independent checking.

As long as a CEN standard is not available as formal EN, Member States will use either national standards or procedures or the draft CEN standard, when it has reached the prEN stage.

[...]

For the sampling of waste — for basic characterisation, compliance testing and on-site verification testing — a sampling plan shall be developed according to part 1 of the sampling standard currently developed by CEN.

For waste analysis a number of standards are listed in the Decision which in the meantime have been further developed.

Infobox 3-23: Wording WAC Decision chapter 3

Relevant analysing standards as required by the WAC Decision have been gathered and listed for the assessment of their legal implementation into national legislation. Besides, the compliance of each national standard with the CEN standards was not analysed.

Test methods are implemented by all covered MS which have a relevant legislation in place. Additionally to the EN standards especially Czech Republic, Latvia and Slovenia use their own national standards or adopted them from neighbouring countries.

In some countries the standards are literally implemented from the WAC Decision (CY, RO, LT) or it is referred to the Decision (EE, PL). Also Latvia implemented the relevant standards, even if not yet all prEN standards are listed explicitly in the legislation.

In other Member States additional standards have been added, especially in Czech legislation a comprehensive list of ISO, TVN, SCN EN standards is provided.

3.2.2.15 *Criteria for underground storage*

Relevant parameter for implementation of WAC Decision requirements for underground storage sites comprise the necessity of a site-specific risk assessment (see boxes below), exclusion of an additional number of waste and separation from active mining activities.

For the acceptance of waste in underground storage sites, a site-specific safety assessment as defined in Annex A must be carried out. Waste may be accepted only if it is compatible with the site-specific safety assessment.

At underground storage sites for inert waste, only waste that fulfils the criteria set out in section 2.1 may be accepted.

At underground storage sites for non-hazardous waste, only waste that fulfils the criteria set out in section 2.2 or in section 2.3 may be accepted.

At underground storage sites for hazardous waste, waste may be accepted only if it is compatible with the site-specific safety assessment. In this case, the criteria set out in section 2.4 do not apply. However, the waste must be subject to the acceptance procedure as set out in section 1.

Infobox 3-24: Wording WAC Decision chapter 2.5

Site-specific risk assessment

The assessment of risk requires the identification of:

- the hazard (in this case the deposited wastes),
- the receptors (in this case the biosphere and possibly groundwater),
- the pathways by which substances from the wastes may reach the biosphere, and
- the assessment of impact of substances that may reach the biosphere.

Acceptance criteria for underground storage are to be derived from, inter alia, the analysis of the host rock, so it must be confirmed that no site-related conditions specified in Annex I to the Landfill Directive [...] are of relevance.

[...]

The site specific risk assessment of the installation must be carried out for both the operational and post-operational phases. From these assessments, the required control and safety measures can be derived and the acceptance criteria can be developed.

An integrated performance assessment analysis shall be prepared, including the following components:

1. geological assessment;
2. geomechanical assessment;
3. hydrogeological assessment;
4. geochemical assessment;
5. biosphere impact assessment;
6. assessment of the operational phase;
7. long-term assessment;
8. assessment of the impact of all the surface facilities at the site.

Infobox 3-25: Wording WAC Decision Appendix A, chapter 1.2

According to current information, only Slovenia (one underground storage system) of the assessed EU-12 MS actively exploits the possibility of underground storage systems and Poland plans to establish one in a salt rock. Nevertheless, the majority of the covered Member States have implemented the corresponding requirements for underground storage as set by the WAC Decision. Malta and Slovakia have not implemented the requirements of this section as a corresponding legislation is not yet in place. In addition, no criteria for underground storage are currently set in Latvia and Lithuania.

3.3 State of Implementation in practical landfilling procedures

This chapter provides a summary evaluation of the site visits performed in each of the EU 12 Member States covered in this report. Landfills have been selected in cooperation with national or regional authorities or with national waste management associations. The number of landfills ranged from one to three in each Member State depending on its size.

Hence results and impressions as obtained in this report cannot provide a comprehensive picture of the waste management situation in a given Member State.

As based on a voluntary approach the results certainly correspond more to an overview of good practice for a given landfill class in the different Member States. Nevertheless also with this restriction to be kept in mind they allow to draw valuable conclusions on waste management and compliance with legal requirements in EU 12.

3.3.1 Overview of WAC Decision implementation in daily practice

The implementation of WAC Decision requirements in daily practice has been investigated by means of a screening of landfills in all EU 12 Member States. Visited sites comprise all landfill types as well as various sizes and ages.

In general it can be concluded that practical application of the procedures is well established. This in particular applies for basic characterisation, whilst there are some weaknesses and divergent interpretation as regards systematic compliance testing. With respect to on-site verification, provisions are well fulfilled as concerns documentary control. Visual inspection is performed but constitutes a weak point in principle. On-site sampling is commonly performed at class C landfills but is rarely executed on class B landfills. For more details see the chapter below.

3.3.2 Detailed assessment of WAC Decision implementation in daily practice by landfill class

Landfills according to EU legislation are separated into four different classes, which are landfill class A for inert waste, landfill class B for non-hazardous waste, landfill class C for hazardous waste and landfill class D for underground storage systems.

Due to the little need for acceptance procedures in landfill class A and the small amount of underground storage systems, the landfill visits were focussed on class B and C landfills; in particular when only one landfill site was visited in a MS. Table 3-4 gives an overview of the classification of landfills visited.

Accepted waste types per landfill site			
Number of landfills	Inert waste	Non-hazardous waste	Hazardous waste
1	X	X	
3	X	X	X
12		X	
3		X	X
2			X

Table 3-4: Number and type of landfill visited in EU 12.

3.3.2.1 Landfill class A (landfills for inert waste)

Four landfill sites which can accept inert waste have been visited. Visited landfills were located in Győr (Hungary); Ruse (Bulgaria); Slobozia (Romania) and in Celje (Slovenia). All four landfills are all combined installations with sections classified as class B or class C. The landfill site in Hungary also accepts non-hazardous waste and is therefore included in Section 3.3.2.2 Landfill class B (landfills for non-hazardous waste) and the other three landfill site from Bulgaria, Romania and Slovenia also accept non-hazardous waste as well as hazardous waste and are therefore included in Section 3.3.2.3 Landfill class C (landfills for hazardous waste).

3.3.2.2 Landfill class B (landfills for non-hazardous waste)

The majority of visited landfills pertained to class B or constituted installations with separate sections authorised as class B and class C. From the 21 visited landfill sites one accepts inert and non hazardous waste and 12 accept mere non-hazardous landfill sites and are discussed in this section.

The remaining landfill sites of which 3 could accept inert non-hazardous and hazardous waste, 2 other landfill sites could accept non-hazardous and hazardous waste and 3 landfill sites accepted mere hazardous waste are discussed in Section 3.3.2.3 Landfill class C (landfills for hazardous waste).

The landfill sites for non-hazardous waste can be separated in three categories (landfills for MSW, combined landfills for MSW (including stable non-reactive hazardous waste) and other non-hazardous wastes and landfills for general non-hazardous waste (meaning no MSW)).

As concerns the different types of landfills, the following numbers have been visited:

- Municipal solid waste landfills: 2x CY, 1x HU, 1x LT, 1x LV, 1x PL;
- Combined landfills for MSW, other non-hazardous waste and stable non-reactive hazardous waste: 1x CZ, 1x EE, 1x MT, 1x PL, 2x RO, 1x SK;
- Landfills for industrial non-hazardous waste: no landfill site which only accepts industrial non-hazardous waste has been visited.

General terms

Installations comprised privately and publicly managed sites, with first permits starting in 2002/2003 (CZ, MT, RO) to the recent past (e.g. CY 2010, HU 2009). One landfill site in Poland has been a wild disposal site before it was prepared to fulfil all requirements of the Landfill Directive. In Cyprus the new installations of the waste management system and the corresponding opening of the new landfill sites lead to ongoing closings of semi-wild landfill sites.

Operation of the visited sites is foreseen to continue in most cases for the next 10 to 20 years. Overall operation times depend on the type of waste landfilled. In many cases plans for MBTs for MSW are ongoing which will reduce the disposed of waste and will therefore increase the operation times.

The capacity of the landfills ranged from < 1-3 million m³ with the majority of sites in the range of 1.5-2million m³ overall capacity and an annual input in a dimension of 100,000 tons (range 40,000 – 300,000 tons).

Many of the new landfill sites have been opened with financial support of ISPA, who co-financed the installations (e.g. CY, RO, PL, SI).

Technical standard, gas and leachate treatment

All visited sites corresponded to the technical standards sets by the Landfill Directive with appropriate geological barrier, leachate collection and sealing systems and drainage layers as well as superficial coverage. Leachate water was either treated on-site (biological and reverse osmosis) to reach appropriate quality or was collected and treated in municipal WWTPs. As many of the visited landfill sites have started operation less than 10 years ago the landfill gas quantity and quality was too little to be used for energy recovery. The landfill sites which are equipped with a energy production facility have a power of 2-6 MW. In some cases gas was already flared but in many cases the landfill gas was still not usable for flares and the installation of a flare was only a planned project.

The majority of sites apart from the landfill comprise additional storage and treatment facilities such as civic amenity sites, storage places for waste wood, tyres, or hazardous waste, composting areas, separation lines or full MBTs. Baling stations and a shredder were additional installations, only encountered at single sites.

General management procedures

There are two very different acceptance procedures applied in landfills for non-hazardous waste. One is for municipal solid waste (acceptable without testing), and the second one is for other non-hazardous wastes necessary to be tested.

In general class B landfills are equipped with electronic data management systems, which in case of large private owner companies may even be developed as company internal intranet.

Waste acceptance is organised as standardised procedure, comprising in principle in all cases the three steps of basic characterisation, compliance testing and on-site verification.

The waste producer in most cases can only deliver after he has received an official certificate of acceptability issued by the landfill operator.

Information is documented and stored often both in paper and as electronic version for the periods required by national legislation which is conform to WAC Decision requirements. Often mandatory storage times are even exceeded at least for the electronic version of documents.

At one site (RO) the IPPC permit of the landfill site included the EWC codes which they could accept. Other waste types could only be accepted at the landfill site after a written agreement from the local authority could be provided.

Examples of good practice:

- Swipe cards used for identification and data transfer for the incoming waste;

Basic characterisation procedures

At all visited landfills, the basic characterisation of a specific waste type is performed by means of a specific type of document containing basic information about the waste producer, waste origin, appearance, code and quantities.

The document is in general developed by the landfill operator, so that the design differs but basic content is similar. In general a full testing of all parameters set in the WAC Decision is requested for all wastes (e.g. soil, ashes, sludges) except of MSW.

The waste producer has the responsibility for the chemical analysis, but landfill operators may offer support. In most cases the analysis is performed by an external laboratory but there are landfills which also can offer such service themselves. If deemed necessary the landfill operator can ask for analysis of additional substances.

In quite a number of sites, the validity of the basic characterisation was limited to 1 year or less (depending on waste type and quantity). Then a new document with another analysis (if relevant) is requested.

In general the basic characterisation is performed very similar in the EU 12 countries. Only after reviewing of the basic characterisation by the landfill operator a contract will be prepared and the waste producer could deliver the waste.

In case of Estonian a basic characterisation of non-hazardous waste was not requested. The non-hazardous waste represented about 15 % of the total disposed waste, whereas the rest of the disposed of waste was municipal solid waste and asbestos waste, which do not need testing.

In case of Bulgaria non-hazardous waste which is not co-disposed with stable non-reactive hazardous waste a basic characterisation does not have to be prepared.

Examples of good practice:

- Annual renewal of basic characterisation (e.g. CZ, SK);
- In some countries also municipal waste is tested (e.g. PL, SK).

Compliance testing

In accordance with WAC Decision requirements; compliance testing is performed once a year (e.g. PL, SK) but only if chemical analyses were requested for the basic characterisation.

In Czech Republic landfill operators request a full renewal of the basic characterisation with a full chemical analysis (if relevant.) each year.

At one landfill site in Romania a sample is taken and analysed. This also included also non-hazardous waste except MSW. In case of the other two visited landfill sites the contract had to be issued every year. At one facility new analyses had to be made in any case, whereas the other landfill site only requested new analyses in case there had been irregularities in the past

In Estonia no compliance testing has been performed.

In Malta a plan for compliance testing was established once the basic characterisation was developed. Key parameters and frequency of compliance testing are set as stated by the WAC Decision.

In several facilities compliance testing was not necessary as only MSW was accepted.

In some cases it appears that differentiation between “on-site testing” and “compliance testing” is not fully clear to landfill operators and is mixed in interpretation.

On-site verification

As concerns practical application of on-site verification it is important to differentiate between

- Check of documents and service contract, weighing,
- Visual control,
- Sampling and analysis.

Check of documents and service contract, weighing

As regards check of documents all of the visited landfills use electronic data management systems and have a well established control scheme in place. Drivers are either identified by the name of the waste producer, the “approval certificate” or a swipe card (electronic carriers’ identification card).

Information from the weighbridge (directly at, or closely behind the gate) is often transferred automatically into the system or it is transferred into it manually by the operator.

The further documentation and tracing of the waste load is ensured by means of an internal note that is checked, and often signed and/or stamped at any interim treatment facility or at the place of unloading.

This document has to be handed over to the gate officer after final weighing in exchange to the “weighing bridge document”.

Visual control

At some of sites the entrance gate is equipped with overhead mirrors or cameras to survey entry and exit and to have the possibility to do a first visual control. It however, has to be admitted that in many cases arriving trucks are covered or closed, so that visual information about the delivered load cannot be obtained.

Thus the crucial point of control in practice is at the place of unloading, where generally one to two employees are present. The employees were reported to be trained to detect and to separate or to refuse unacceptable waste or waste compounds. Employees are equipped with communication tools and are instructed to call the landfill manager for support and further decision in case of doubts.

At two of the landfill sites (RO) the waste was visually closely investigate either before or on the weighing bridge. At one landfill site (RO) the waste was disposed of at one place in front of the

disposal site, from where it was distributed onto the disposal site by the employees of the landfill site.

In Estonia the lorry could be sent next to an elevated area from where a visual on-site verification could easily be done.

On another landfill (e.g. PL, CY, SI) waste is not deposited directly but is sent to an on-site MBT installation first, where a visual control can easily be made.

Sampling and analysis

Regular sampling and analysis of waste delivered at class B landfills is not a common practice in the majority of visited sites. Either it is not practiced at all or it is restricted to cases of suspicion. On the other hand there are some cases, where sampling and testing is performed (e.g. RO).

3.3.2.3 Landfill class C (landfills for hazardous waste)

In total 8 landfills for hazardous waste, mostly installed jointly with a class B and/or A landfill have been visited. The distribution of sites to different Member States is as follows:

- Mere hazardous waste landfill: 1x HU, 1x PL;
- Non-hazardous and hazardous waste landfill: 2x BG, 1x CZ;
- Inert, non-hazardous and hazardous waste landfill: 1x BG, 1x RO, 1x SI.

General terms

First authorisation of visited landfills dates back to 1989 (HU). The majority of sites was between 1996 and 2008. The selection comprised publicly and privately managed sites, with however, a clear predominance of private installations in this sector. The landfills will remain in the operational phase 10 to 40 years. The overall capacity ranges from as little as 25.000m³ to 600.000 m³

The landfills often include treatment plant facilities incineration or stabilisation plants as additional treatment facilities. The landfill sites accepting hazardous waste are often equipped with a laboratory to prove the quality of the waste after stabilisation.

Major waste types disposed of are ashes, sludges, slags, filter cakes, contaminated soils and stabilised wastes.

Technical standard, integration of other treatment methods, gas and leachate treatment

All sites visited were fully compliant with Landfill Directive requirements as concerns technical standard and leachate collection and treatment. Gas production in general is not an issue at hazardous waste landfills due to the inorganic character of the deposited waste.

General management procedures

All Class C landfills visited are equipped with sophisticated electronic data management systems.

Waste acceptance is exclusively organised as standardised procedure, comprising basic characterisation, compliance testing and on-site verification including mandatory chemical analysis.

Information is documented and stored often both in paper and as electronic version for the periods required by national legislation which is conform to WAC Decision requirements. All information related to basic characterisation and waste delivery in many cases is stored until the end of the aftercare period.

In the majority of countries stabilisation of hazardous waste not compliant with limit values in granular form is an integrated part of waste management.

The design of the disposal sites of hazardous waste could be very different at the landfill sites. In one case (PL) the hazardous waste was poured into a water basin in which the hazardous waste settled to the ground and the excess water was treated. In another country (BG) hazardous waste was disposed of in concrete cells or former fuel storage tanks which are sealed after the capacity of the cell had been reached. In some cases hazardous waste was even packed in Big Bags, metal barrels, plastic boxes or metal container.

Basic characterisation procedures

At all visited landfills, the basic characterisation is performed by means of a detailed “basic characterisation” document containing information about the waste producer, waste origin, appearance, code and quantities, chemical composition and leaching behaviour. In general “hazardous waste identification and transport forms” as requested by EU and national legislation for hazardous waste management are used as additional or alternative information source.

Documents are partly standardised at national scale, partly lay-outed individually by the landfill operator, so that the design differs but basic content is similar. In case of Romania a simplified documentation can be made for waste streams below 1 t/y.

Sampling and test methods are generally based on national legislation.

Although the waste producer has the responsibility for the basic chemical analysis, landfill operators often offer support or even systematically request a sample to do the analysis on their own.

After evaluation of the information the landfill operator enters the information in the internal database and issues an acceptance certificate which allows the waste producer to start the delivery.

In quite a number of sites, the validity of the basic characterisation is limited to one year. Then a renewal of the basic characterisation including a new full chemical analysis is requested.

Compliance testing

In general compliance testing is done at least once a year, but exceptions exist.

At some landfill each incoming hazardous waste is sampled and tested within the on-site verification. (e.g. RO, HU).

In some cases of landfill the contract between landfill operator and waste producer (CZ, RO) is only valid for one year, for the new contract a new basic characterisation has to be made which normally includes a full chemical analysis and is therefore regarded to fulfil the purpose of compliance testing. Testing in other Member States is restricted to key parameter as laid down by the landfill operator (e.g. MT, SK, PL).

On-site verification

On-site verification follows largely the same procedures as at class B landfills with the difference that in some countries (e.g. RO, HU) sampling of each hazardous waste load is mandatory.

If direct sampling is not possible, (dusts, sludges) because the waste is transported in a closed vehicle, sampling is performed at the stabilisation plant, from where it is sent to the laboratory or the driver has to return it to the entrance gate.

Sample storage of the internal laboratory is mostly one month. In case the samples are sent to external laboratories the time of sample keeping was not known to the landfill operators but was expected to be at least one month.

At an Bulgarian landfill for hazardous and non-hazardous waste, controls focussed on the first load of each new waste.

For on-site verification of stabilised waste the landfill operator is at the same time the waste producer and he is in charge of the proper generation of the basic characterisation as well as compliance testing. An on-site verification before unloading is not necessary in this case.

3.3.2.4 Underground storage systems

Due to the very limited number of underground landfills in EU Member States, no underground storage system was visited.

3.4 Experts opinions and proposals for amendment of the WAC Decision

This chapter comprises a compilation of challenges in application of waste acceptance provisions identified by competent experts from waste management companies and weaknesses of the WAC Decision identified by the project team in the context of the evaluation the compiled information.

3.4.1 Experts opinions

During site visits landfill operators have been encouraged to express problems encountered in on-the-ground application of the WAC Decision requirements.

In some cases this opportunity to report on encountered challenges and to make suggestions with respect to potential amendments of the EU Decision was appreciated and provided valuable results. The comments can be roughly classified into different categories as presented in the following chapters.

In general, several MS stated to have had major difficulties to establish a proper waste management system, compliant with set EU requirements. It seems that key experts and officials in the fields are not always fully aware, which type of specific problems may occur in the practical enforcement of the WAC Decision. This at least in parts appears to be due to lack of experience. In addition, it has to be taken into account that acceptance criteria pursuant to WAC can not be expected for non-hazardous waste landfills.

3.4.1.1 *Guidance for WAC Decision application*

Visual control before unloading: Visual control before unloading is requested by the WAC Decision and is applied to the extent possible. The feasibility and benefit of this measure however, has been repeatedly questioned, even more as in many cases transport vehicles are closed on top. But also in case of open vehicles such control would only provide information on the top layer of waste. Thus it was suggested to focus on visual control at the place of unloading with a priority on appropriate training and education of the staff.

3.4.1.2 *Criteria and test methods for monolithic waste*

Definition of monolithic waste: A definition of monolithic waste provided by the European Commission would be necessary as it is often not clear what kind of waste is the meant.

A compilation by country of comments and proposals expressed by experts during site visits and discussions with Member State authorities is provided in the table below. For further details please see the country reports in Annex 1.

MS	Expert complaints & proposals related to potential modifications of the WAC Decision
CZ	<ul style="list-style-type: none"> WAC limit values for DOC are sometimes difficult to meet after biological treatment. Therefore, often the landfill operator has to ask for a specific permission for higher limit values (only for DOC) by the national authorities. It would be advantageous to have a specific exemption for DOC after biological treatment in order to reduce bureaucratic burdens. Harmonisation of acceptance criteria for stabilised solidified hazardous waste into waste is requested as regards amendments to section 2.3 -2.4 – 3 of the Landfill Directive
SI	<ul style="list-style-type: none"> The limit values for the emissions of leachate seemed to be too low but can now be fulfilled by the new treatment (reverse osmosis). The TOC limit values are too stringent as it is even difficult not to exceed the 18% in case of MSW after its treatment. The limit value for biodegradability is too stringent. It is impossible to achieve the requirement of 50% biodegradation. It can be achieved only about 30% biodegradation.

Table 3-5: Overview of divergences of national legislation of criteria for underground storage to the WAC Decision

3.4.2 Identified gaps in the WAC Decision

The major genuine deficit of the WAC Decision itself that has been identified during the project work is the lack of leaching limits for non-hazardous waste disposed of separately from hazardous waste.

This offers wide room for interpretation and in principle allows Member States to landfill waste on class B landfills which have higher contamination, respectively show higher leaching results than waste acceptable at landfills for hazardous waste. In principle limit values do not have to be set at all. Practical examples for both cases exist.

Given the fact that provisions concerning isolation from the surrounding environment are less strict than for class C landfills, this might be regarded as problematic and contradictory to the precautionary principle.

Another aspect is the pH limit which is set only for hazardous but not for non-hazardous waste or the lack of a low level limit for the dry matter content.

Asbestos waste is only addressed in the chapter for class B landfills. In this context it is to be questioned whether this means that a disposal of asbestos waste at class C and class A landfills would be an offence of WAC Decision objectives, or whether this is only a matter of classification. In addition it would need to be clarified whether waste used to cover and surround the asbestos waste has to be compliant with any of the WAC Decision limits or not. As it is not included in the chapter stable non-reactive hazardous waste, it could be concluded that WAC Decision leaching limits for class B do not apply.

3.5 Conclusions and Recommendations

Conclusion on legal implementation of the WAC Decision

The assessment of national legislation shows that the majority of the EU-12 Member States has implemented at least the most relevant aspects of the WAC Decision requirements. Some of the covered Member States even literally transposed the WAC Decision into national legislation.

In some other Member States national legislation does only contain referrals to the Landfill Directive or to the WAC Decision. The references were either only related to the acceptance procedure of waste or have led to deficient compliance performances. A number of deficits or lack of specific legislation in a small group for Member States could be identified. Whereas the Slovak Republic and Latvia meant to be compliant with the requirements by means of a general referral to the decision in national legislation, Malta considers the decision applicable without any referral to it in national law.

Even if requirements for acceptance procedures and acceptance criteria are largely reflected, certain deficits are described below remain with respect to the different aspects covered by the WAC.

Basic characterisation: Major deficits relate to aspects of the function of the basic characterisation and the fundamental requirements of basic characterisation. More important is the lack of concrete provisions and specification as concerns testing requirements in terms of determination of compositional range and variability. In this context the obligation to annually renew the basic characterisation as requested in a number of Member States could be regarded as practical means to determine and assess the variability of regularly generated wastes.

As concerns **compliance testing** a full transposition of the WAC Decision wording with a frequency of one year without further specification is the most common way of implementation. However, various deficits in its implementation have to be noted.

On-site verification: Whereas the control of documents is nearly always uniformly adopted into national legislation, the provision for visual inspection and in particular the obligations are concerning on-site sampling and testing have been sometimes varied in national legislation. Whereas the changed provisions for visual inspection can be regarded as of low importance, a lack of a sampling /testing obligation for class A and B landfills might be more important.

As regards **acceptance criteria**, divergences focus on lack of implementation of specific criteria for monolithic waste, the obligation to determine the ANC, and to the acceptance of higher leaching limit values.

Some MS implemented the WAC Decision by national legislation, but instead of defining therein directly the requested testing methods and corresponding limit values, they refer to national permits, form sheets etc. Even if these documents are indirectly legally regulated as they have to be compliant with the WAC Decision, this could be stated as a minor deficit as they can be changed relatively easily.

Implementation of requirements for inert waste landfills is well achieved. Some slight variations and extensions of the short list are the most important divergences observed. Examples of good practice comprise additional restrictions for short list waste.

Whereas criteria for landfills for non-hazardous waste in total are well implemented there are some fields of potential deficits and problems.

Although in line with WAC Decision provisions the installations of additional subcategories for class B landfills can become problematic if higher limit values than those set in the WAC Decision are set.

Certain deficits remain as concerns criteria for monolithic waste, physical stability and bearing capacity and non-reactivity of stabilised waste, where a lot of the covered MS did not add further specifications. On the other hand, some countries show a good and more stringent implementation.

For the majority of MS an acceptable and also good level of implementation of the **criteria for landfills for hazardous waste** could be identified. However, also major deficits in implementation and especially in practical enforcement exist.

Provisions for sampling and testing are implemented by all MS which put in place a corresponding legislation. In compliance with the WAC Decision, few countries use their own national standards additionally to the EN standards.

Even if only one MS currently exploit the possibilities of **underground storage**, the majority of the covered countries have implemented the corresponding criteria. In large parts the WAC Decision wording was literally adopted to national legislations and only a few exemptions could be identified.

Thus it can be concluded that except of the two countries which do not yet have legislation in place, the need for further specification and amendments is comparably limited to a few topics which are partly already intensively discussed.

Conclusion on practical application of WAC Decision requirements

Note: Being based on a voluntary approach, the experiences gained from site visits certainly correspond more to an overview of good practice in the different Member States, than to the national average.

Taking into account that visited landfills in general represented examples of good practice of waste management for a given landfill category due to the conditions mentioned above), it can be concluded that a good level of practical application of the procedures and a relatively equal standard has been established in well managed plants in EU-12.

This in particular applies for basic characterisation, whilst there are some weaknesses and divergent interpretation as regards systematic compliance testing. With respect to on-site verification, provisions are well fulfilled as concerns documentary control. On-site sampling is commonly performed at landfills accepting hazardous waste but is more rarely executed on landfills only accepting inert and non-hazardous waste. Visual inspection is performed with a special focus on the place of unloading.

Electronic data management systems are commonly applied tools which significantly facilitate the procedures. Standardised forms for basic characterisation often exist. In addition documents for tracing the waste flow on site are elaborated in particular on hazardous waste landfills. Internal management standards and environmental certification with harmonised quality standards and intensive information transfer, education and training is a common practice especially in large international companies.

Most visited landfills in general complied very well with their national legislation and corresponding technical requirements and acceptance procedures.

Technical standards of visited landfills were compliant with 1999/31/EC provisions or even stricter national regulation as concerns geological barrier, separation of cells, gas and leachate collection and superficial coverage.

A considerable number of the visited sites represented integrated treatment plants. An integration of thermal and physico-chemical facilities is in particular established for hazardous waste landfills, whilst non-hazardous waste landfills are often equipped with civic amenity sites and composting facilities.

Nevertheless the amount of biomass entering a class B landfill differs considerably depending on the location and realisation of MBT.

Gas and leachate collection is common. Energy recovery from Landfill gas in terms of electricity production is applied only in some of the landfills receiving biodegradable waste as many of the landfill sites started operating after 2000 and therefore the quantity and quality of landfill gas is not sufficient for an adequate energy production. Heat recovery is less established.

These conclusions however, do not apply to all landfill sites.

Visual inspection constitutes the weakest point of control as it is directly correlated to the expertise and motivation of the staff on site. Consequently, the landfill types where visual inspection is the only control instrument because waste is exempted from testing, tend to show a larger range of management quality, and associated risks. Consequently, awareness raising and training of the staff is therefore essential.

Conclusion on gaps and deficits in the WAC Decision

The basic requirements of the WAC Decision seem to be understood and applied, but there are some parts which lead to misinterpretation or uncertainties within the different EU 12 Member States:

- Is basic characterisation and chemical analyses necessary for non-hazardous waste which is not disposed of with stable non-reactive hazardous waste?
- What has to be understood with monolithic waste?
- Are the IPPC permits enough to implement the criteria which have to be set?

The lack of limit values for non-hazardous waste to be disposed separately from hazardous waste is the major deficit in the WAC Decision.

In comparison with the situation in EU 15, for which a similar investigation has been performed in 2009⁵, it can be concluded that the a majority of the EU-12 Member States has already transposed the WAC Decision into national legislation and therefore provides the legal basis for proper and EU-wide harmonised waste acceptance criteria at landfills like in the old MS. However, it can be further concluded that in some countries an improvement of the legal implementation is still necessary. In addition, the remaining challenge for the majority of the covered MS will be to effectively enforce the requirements in practice and to continuously acquire experiences in the field. The legal provisions even if literally implemented are not yet applied on an equal level as for most of the EU-15.

Based on these conclusions the following recommendations can be proposed, which in part due to comparable deficits remain similar to the ones drawn in the previous report on the situation in the “old” Member States:

Recommendation for the Member States

- Establish relevant legislation in order to explicitly transpose WAC Decision requirements if not yet in place;
- Centralise the coordination of waste management activities and establish an infrastructure which allows harmonised national requirements and waste acceptance criteria;
- Elaborate precise provisions which are requested by the Decision 2003/33/EC instead of general referrals;
- Specify criteria for monolithic (stability, limit values, testing method) waste if not yet established;

⁵ ASSESSING LEGAL COMPLIANCE WITH AND IMPLEMENTATION OF THE WASTE ACCEPTANCE CRITERIA AND PROCEDURES BY THE EU-15 http://ec.europa.eu/environment/waste/pdf/report_wac.pdf

- Develop specific criteria for physical stability and bearing capacity;
- Establish the obligation to evaluate the ANC if not yet requested;
- Provide guidance documents for the waste acceptance procedure and criteria in order to harmonise national interpretation and practical enforcement of the WAC Decision requirements;
- Promote consistent application of acceptance procedures by information campaigns, education and training of landfill operators;
- Enhance international cooperation and information exchange with other Member States regarding good practice and legal approaches.

Recommendation for the European Commission

- Develop proposal or guidance for determination of variability and compositional range, monolithic waste, pre-treatment and limit for non-hazardous waste if not landfilled together with hazardous waste;
- Provide comprehensive guidance on the proper disposal of asbestos and gypsum waste;
- Provide detailed guidance about proper implementation of the WAC Decision (mandatory elements and format, voluntary “good practice” elements);
- Participate in elaboration of pragmatic solutions for challenging limit values;
- Further support information exchange and initiative for capacity building (expertise) e.g. in the framework of IMPEL and/or Twinning;
- Consider introduction of questions on inspection of landfills and illegal landfill into Member States reporting pursuant to Landfill⁶ and/or Waste Framework Directive;
- Support development of guidance for landfill inspection standards and best-practice.

⁶ Decision 2000/738/EC

Contact details:

BiPRO GmbH
Grauertstr. 12
81545 Munich, Germany
Phone: +49-89-18979050
Fax: +49-89-18979052
URL: <http://www.bipro.de>

