

Reports

Volume 1	Main Report: Strategy and Action Plan for Hazardous Waste Management in Romania
Volume 2	Supporting Report 1: Supporting Information for the Strategy and Action Plan
Volume 3	Supporting Report 2: Results of Surveys Conducted
Volume 4	Supporting Report 3: Results of Pilot Projects Implemented
Volume 5	Summary
Volume 6	Pilot Project 1 Promotion of Heavy Metal Recycling Using Existing Smelting Facility
Volume 7	Pilot Project 2 Waste Minimization and Treatment in Metal Surface Treatment Process
Volume 8A	Pilot Project 3A Organic Solvent Reduction
Volume 8B	Pilot Project 3B Responsible Care
Volume 9	Pilot Project 4 Strengthening EPI and Company Capacity in Hazardous Waste Management

VOLUME 9
PILOT PROJECT NO 4
Strengthening EPI and Company Capacity in Hazardous Waste Management

Table of contents

Part 1 General Report on Pilot Project 4	1
1 Outline of the Pilot Project – Objectives	1
2 Methodology, Activities and Outputs	1
2.1 Hazardous Waste Management.....	1
2.2 Contaminated Sites Management	2
2.3 Provision of Laboratory Equipment	2
3 Participants in the Project	2
4 Evaluation of the Project Results.....	3
5 Dissemination of the Pilot Project Results... ..	4
6 Summary of the Documents Produced... ..	4
6.1 Guidance Note for Hazardous Waste Identification	4
6.2 Guide for Elaboration of the Company Waste Management Plan	5
6.3 Analysis of Annexes 4 and 5 Included in Environmental Authorizations	6
6.4 Analysis of Inspection Department Activity Related to Companies Included in PP4.....	8
6.5 Checklist of Questions for Inspecting Hazardous Waste Management Inside Companies.....	11
6.6 Review of Tasks and Responsibilities of the Waste Unit as Described in the Organizational and Functional Regulation ROF – of EPI Pitesti	12
6.7 Case Study for Elaboration of the Inventory of Contaminated Sites in Arges County	14
ANNEX I List of Laboratory Equipment Provided to EPI Pitesti within PP4.....	16
ANNEX II EPI Pitesti Plan of using the Laboratory Equipment Provided by JICA.....	17
Part 2 Guidance Note for Identification of Hazardous Waste	19
1 European Waste List and Regulatory Framework	19
2 Waste Classification Protocol	20
3 Identification of Hazardous Waste.....	21
4 Methodology of Hazardous Waste Assessment	22
5 Specific Waste Issues.....	27
ANNEX no I European Waste List.....	35
ANNEX no II Hazardous Properties of Waste.....	56
ANNEX no III Risk Phrases and Hazardous Waste Threshold Limits	57
ANNEX no IV Testing Methods.....	64
ANNEX no 5 Article 8 in GD 856/2002 (Excerpt).....	69
Part 3 Guide for Elaboration of Company Waste Management Plan.....	71
1 General Description of Company	71
2 Waste Management – Present Situation	72
3 Prognosis of Waste Quantities and Management Needs	77

4	Objectives for Company Waste Management	77
5	Measures to Reach Objectives.....	77
6	Actions for Quantity Reduction, Selective Collection, Recovery and Environmental Safe Treatment of Waste	78
ANNEX I	Examples for Completion of the Guide Sections	79
ANNEX II	Most Significant Waste Streams by Industrial Sectors	90
ANNEX III	Hazardous Waste Minimization.....	91
ANNEX IV	Waste Handling.....	91
ANNEX V	Waste Recycling, Recovery Or Disposal.....	92
Part 4	Guidance Note to Improve Waste Inspection Capacity	93
1	Inspection Planning	93
2	Use of Inspection Manual.....	93
3	Inspection Reports	95
4	Checklist for Inspecting Hazardous Waste Management	97
Part 5	Case Study for Elaboration of the Inventory of Contaminated Sites in Arges County	103
1	General Presentation of the Case Study.....	103
2	Elaboration of the Inventory	103
3	Arges County Database on Contaminated Sites	105
4	Priority Ranking Criteria	110
4.1	Natural Sensitivity of Groundwater	110
4.2	Land Use	112
4.3	Surface of Contaminated Site	113
5	Mapping of Contaminated Sites	114
ANNEX I	Information Sheets on Former and Actual Hazardous Waste Deposits (Short Checklist Format)	123
ANNEX II	Information Sheets on Contaminated Sites / Hazardous Waste Deposits(Long Checklist Format)	145
Map 1	Groundwater Vulnerability To Pollution in Arges County	213
Map 2	Location of Contaminated Sites and Hazardous Waste Deposits	214
Map 3	Location of Different Priority Contaminated Sites and Hazardous Waste Deposits in Arges County	215

List of Tables

GENERAL REPORT ON PILOT PROJECT 4

Table 1	EPI Pitesti's Plan of Using the Laboratory Equipment Provided by JICA	17
---------	---	----

GUIDANCE NOTE FOR IDENTIFICATION OF HAZARDOUS WASTE

Table 1	Comparison Between EWC/HWL and EWL	20
---------	--	----

GUIDE FOR THE ELABORATION OF COMPANY WASTE MANAGEMENT PLAN

ANNEX I

Table 1	Example for the Completion of the Summary on the Management of Waste	86
---------	--	----

ANNEX II

Table 1	Most Significant Waste Streams by Industrial Sector	90
---------	---	----

CASE STUDY FOR ELABORATION OF THE INVENTORY OF CONTAMINATED SITES IN ARGES COUNTY

List 1	Inventory of Former and Actual Hazardous Waste Deposits in Arges County	106
List 2	Inventory of Contaminated Sites As Result of Hazardous Material Depositing	108
List 3	Other Contaminated Sites in Arges County	109
Table 1	Groundwater Vulnerability Classes	111
Table 2	Groundwater Vulnerability Sub-Classes	111
Table 3	Marks Proposed for the Vulnerability Sub-Classes	111
Table 4	Marks Proposed for the Groundwater Use	112
Table 5	Proposed Scoring for Land Use	112
Table 6	Calculation of the Site Sensitivity Index for Contaminated Sites	115
Table 7	Calculation of the Combined Index of Sensitivity for Contaminated Sites	117
Table 8A	Priority List of Contaminated Sites Considering Site Sensitivity Index	119
Table 8B	Priority List of Hazardous Waste Deposits Considering Site Sensitivity Index	119
Table 9A	Priority List of Contaminated Sites Considering Combined Index of Sensitivity (CIS) Calculated by SSI x Surface As Hectares	120
Table 9B	Priority List of Hazardous Waste Deposits Considering Combined Index of Sensitivity (CIS) Calculated by SSI x Surface As Hectares	120
Table 10A	Unified Priority List of Contaminated Sites	121
Table 10B	Unified Priority List of Hazardous Waste Deposits	121

ANNEX I Information Sheets on Former and Actual Hazardous Waste Deposits (Short Checklist Format)

Sheet 1.1	PETROM – Poiana Lacului -Oily Sludge Controlled Storage Area	123
Sheet 1.2	Dacia Pitesti - Former Sludge Lagoons (Pre-Batal, Batal)	124
Sheet 1.3	Dacia - Davidesti Controlled Disposal Site	125
Sheet 1.4	ARPECHIM - Old Deposit for Sludge /Oily Tank Residues	126
Sheet 1.5	ARPECHIM New Deposit for Oily Sludge / Oily Tank Residues	127
Sheet 1.6	ARPECHIM Deposit for Triazinic Waste	128
Sheet 1.7	ARPECHIM - Dambovnic Lake-Compartment No.5 - Deposit for Sludge/ Oily Tanks Residues	129

Sheet 1.8	ARO Campulung Electroplating Sludge Tank	130
Sheet 1.9	IPEE Curtea de Arges Electroplating Sludge Tank.....	131
Sheet 1.10	ELECTROARGES Curtea de Arges Electroplating Sludge Tank	132
Sheet 1.11	S.C. Auto General Motor SA Maracineni Sludge Disposal Site.....	133
Sheet 1.12	PITESTI – ALBOTA Municipal Mixed Waste Disposal Site.....	134
Sheet 1.13	CURTEA de ARGES Municipal Mixed Waste Disposal Site	136
Sheet 1.14	COSTESTI Municipal Mixed Waste Disposal Site	138
Sheet 1.15	CAMPULUNG Municipal Mixed Waste Disposal Site.....	140
Sheet 1.16	TOPOLOVENI Municipal Mixed Waste Disposal Site.....	142

ANNEX II Information Sheets on Contaminated Sites and Hazardous Waste Deposits (Detailed Checklist Format)

Sheet 2.1	Micesti Area Contaminated With Pesticide	145
Sheet 2.2	Falfani Area Contaminated With Pesticide	147
Sheet 2.3	Poiana Lacului Area Contaminated With Crude Oil and Salty Water	149
Sheet 2.4	Mosoia - Albota Area Contaminated With Crude Oil and Salty Water.....	151
Sheet 2.5	Cocu - Babana - Site Contaminated With Crude Oil and Salty Water.....	153
Sheet 2.6	Draganu-Merisani Area Contaminated With Crude Oil and Salty Water	155
Sheet 2.7	Sapata Area Contaminated With Crude Oil and Salty Water	157
Sheet 2.8	Vedea Area Contaminated With Crude Oil and Salty Water.....	159
Sheet 2.9	Topoloveni Area Contaminated With Crude Oil and Salty Water	161
Sheet 2.10	Oarja Area Contaminated With Crude Oil and Salty Water.....	163
Sheet 2.11	Cateasca Area Contaminated With Crude Oil and Salty Water	165
Sheet 2.12	Caldararu Area Contaminated With Crude Oil and Salty Water.....	167
Sheet 2.13	Barla Area Contaminated With Crude Oil and Salty Water.....	169
Sheet 2.14	Poiana Lacului Controlled Sludge Storage Facility	171
Sheet 2.15	Pitesti Railway Depot Contaminated Area	173
Sheet 2.16	Dacia – Oil Central Storage Facility	175
Sheet 2.17	Dacia – Former Sludge Lagoons.....	177
Sheet 2.18	Dacia – Fuel Supply and Depositing Area.....	179
Sheet 2.19	PISCANI Contaminated Site	181
Sheet 2.20	Private Property V. Preda near ARPECHIM.....	183
Sheet 2.21	ARPECHIM Pitesti triazinic Waste Disposal Site	185
Sheet 2.22	ARPECHIM Pitesti Old Deposit for Sludge and Oily Tank Residues.....	187
Sheet 2.23	ARPECHIM – New Deposit for Sludge and Tank Oily Residues	189
Sheet 2.24	ARPECHIM – Dambovnic Lake Compartment 5 - Deposit for Sludge and Oily Tank Residues.....	191
Sheet 2.25	ARO Campulung - Electroplating Sludge Tank.....	193
Sheet 2.26	IPEE - Electroplating Sludge Tank	195
Sheet 2.27	ELECTROARGES – Curtea de Arges - Electroplating Sludge Tank.....	197
Sheet 2.28	Auto General Motor MARACINENI Cyanide Sludge Tank	199
Sheet 2.29	Municipal Mixed Waste Disposal Site – Pitesti-Albota.....	201
Sheet 2.30	Municipal Mixed Waste Disposal Site – Curtea de Arges	203
Sheet 2.31	Municipal Mixed Waste Disposal Site – Costesti	205
Sheet 2.32	Municipal Mixed Waste Disposal Site – Campulung	207
Sheet 2.33	Municipal Mixed Waste Disposal Site – Topoloveni.....	209
Sheet 2.34	DACIA – Davidesti Controlled Landfill.....	211

List of Figures

GUIDANCE NOTE FOR IDENTIFICATION OF HAZARDOUS WASTE

Figure 1	Waste Classification Scheme	24
Figure 2	Hazardous Waste Identification Methodology	23
Figure 3	Galvanizing Process Line	27
Figure 4	Waste Water Treatment from Metal Treatment and Coating.....	30
Figure 5	Hot Galvanizing Process	32

GUIDE FOR THE ELABORATION OF COMPANY WASTE MANGEMENT PLAN

Figure 1	General Presentation of Technological Processes.....	79
Figure 2	Brine Purification Plant Scheme	80
Figure 3	Lime Burning and Slaking Plant Scheme	81
Figure 4	Manufacturing of Soda Ash (Light and Dense) Scheme	82
Figure 5	Manufacturing of Sodium Silicate Scheme	83
Figure 6	Manufacturing of Molecular Sieves (MS)	84

CASE STUDY FOR THE ELABORATION OF AN INVENTORY OF CONTAMINATED SITES IN ARGES COUNTY

Map 1	Groundwater Vulnerability To Pollution in Arges County	213
Map 2	Location of Contaminated Sites and Hazardous Waste Deposits in Arges County	214
Map 3	Location of Different Priority Contaminated Sites and Hazardous Waste Deposits in Arges County	215