

SARDINIA 2003

Ninth International Waste Management and Landfill Symposium

6-10 October 2003

S. Margherita di Pula (Cagliari), Sardinia, Italy

Organized by:

IMAGE, University of Padua (IT)

DTU, Technical University of Denmark (DK)

TUHH, Technical University of Hamburg-Harburg (DE)

CISA, Environmental Sanitary Engineering Centre (IT)

IWWG, International Waste Working Group

With the participation of:

European Union Commission

WHO, World Health Organisation Regional Office for Europe

US-EPA, Environmental Protection Agency, United States

Regional Government of Veneto - Environmental Policy Department (IT)

Regional Government of Sardinia - Department of the Environment (IT)

Special Sponsorship:

Institute for Resources Sustainability, Spain

Promoted by:

AIDIS, InterAmerican Association of Environmental and Sanitary Engineering

ANDIS, National Association of Sanitary Engineering, Italy

ATEGRUS, Technical Association for the Waste Management and the Environment, Spain

ATIA, Italian Association of Environmental Technicians

Danish Environmental Protection Agency

Environment Agency, United Kingdom

ESART, Environmental Services Association Research Trust, United Kingdom

FEDERAMBIENTE, Italian Federation of Public Agencies for the Environment

Institute of Solid Waste, Ministry of Environment, Portugal

IGS, International Geosynthetic Society

CIWM, Chartered Institution of Wastes Management, United Kingdom

IWMSA, Institute of Waste Management South Africa

JSWME, Japan Society of Waste Management Experts

KSWM, Korean Society of Waste Management

Under the aegis of

Ministry of the Environment, Italy

PRESENTATION

The International Symposia "Sardinia" were established in 1987 in order to render ideas and experiences in the rapidly developing field of waste management and landfilling readily available to professional communities worldwide. Since then the Symposia have rapidly become the International Reference Forum where planners, operators, public officials and scientists present every two years their relevant experiences and discuss new concepts and technologies of waste management.

As a result of this the Symposia witnessed and contributed to the development of modern strategies such as the integrated waste management hierarchy.

The eight edition of the Symposium, sponsored by WHO (World Health Organization), EU Commission, US EPA and major national environmental agencies, was held in October 2001, and was attended by nearly 900 participants from 55 different countries.

For the present edition, papers were selected according to quality by a group of International Referees from a total of more than 600 abstracts submitted. All papers will be printed on CD. The CD and an abstracts volume will be distributed to delegates before the Symposium.

In accordance with a consolidated tradition, the Symposium will be opened by an introductory lecture not strictly linked to sanitary landfilling. In this edition the introductory lecture "The Car of the Future - A Contribution to Sustainability" will be delivered by G. Sager, manager of the Department "Environment, Traffic Systems and Industrial Safety"-Volkswagen Group.

THE SYMPOSIUM STRUCTURE

The Symposium is structured in two General Parallel Sessions (A and B), usually attended by a considerable number of delegates. Simultaneous translation from English into Italian and Spanish (only Session A) is provided. Topics discussed during Parallel Sessions A and B will be examined in greater detail during Specialized Parallel Sessions (Sessions C e D), Thematic Sessions (Sessions S) and Workshops (Sessions W).

In sessions A and B, contributions (20 minutes) are presented following a strict schedule, in order to enable delegates to plan participation adequately. Forty minutes are devoted to discussion.

In Sessions C, D and S shorter lectures (15 minutes each) are scheduled. Sessions W are primarily addressed to experts on the specific topics. Some introductory presentations are given in order to open discussion. A final report will be presented during the Closing Session of the Symposium.

TRAINING COURSES AND TECHNICAL TOURS

Four Courses on Landfill Design, Landfill Processes and Emissions, Leachate Management and Landfill Gas Management will be held on the 5th of October and will provide the fundamentals of waste landfilling. The courses is reserved to the conference delegates (min 15 participants). Certification of completion will be distributed at the conclusion of each class.

On the last day of the conference, Saturday 11 October, Technical Tours will be carried out.

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Continuously updated information will be also available on
the Web site: <http://www.sardiniasymposium.it>

For further information please contact the e-mail address:
info@sardiniasymposium.it

DAILY PROGRAMME

Sunday October 5

Lungomare Room

IWWG TRAINING COURSES

08.00 - 11.00 Training Courses Registration at the Congress Hall

9.00-11.00

T1: Landfill processes and emissions

Chairman: Prof. T.H. Christensen

- Landfill Concepts
- Environmental Issues
- Landfill Processes
- Hydrogeology
- Leachate and Gas Emissions

11.15-13.15

T2: Landfill Design & Barriers

Chairman: Prof. P. Lechner

- Siting
- Planning
- Landfill Structure
- Barriers
- Top Covers

15.00-17.00

T3: Leachate Management

Chairman: Prof. R. Cossu

- Biological Treatment
- Physical Chemical Processes
- Leachate Recirculation
- Co-treatment in sewage work
- Phytoremediation

17.15-19.15

T4: Landfill Gas Management

Chairman: Prof. R. Stegmann

- Biogas Production Model
- Extraction Systems
- Transport and Flaring
- Energy Recovery

16.00 - 18.00 Registration for Symposium Delegates

19.15 *Get Together Cocktail*

Monday October 6 - Morning

08.00 - 13.00 Registration

Central Hall

OPENING SESSION

Chairman: R. Cossu (IT)

09.00 - 10.00 Welcome addresses by Representatives of:

University of Padua

Technical University of Denmark

Technical University of Hamburg-Harburg

*Regional Government of Veneto - Environmental Policy
Department (IT)*

*Regional Government of Sardinia - Department of the
Environment (IT)*

Institute for Resources Sustainability, Spain

US-EPA, Environmental Protection Agency, United States

*Directorate General for the Environment DGXI-
European Commission*

Guest Lectures:

10.00 - 10.50

*G. Sager, manager of the Department "Environment, Traffic Systems and Industrial
Safety"-Volkswagen Group(DE)*

The Car of the Future - A Contribution to Sustainability

10.50 - 11.20 Coffee break

Introductory Presentations

Sustainable Waste Production

11.20 - 11.50

A. Toyozumi (JP)

Strategy for Solid Waste Management in Japan - Recycling and Eco
Design

11.50 - 12.20

M. Mueller (DE)

Eco-Design against the background of the European Directive on
Waste of Electric and Electronic Equipment (WEEE)

12.20 - 12.50

A. Detzel (DE)

Eco-Efficiency in Integrated Waste Management Systems
Environmental & Economical Assessment of Packing Recycling

12.40 - 13.10 Discussion

Monday October 6 - Afternoon

14.30 - 15.30 Registration

Central Hall

SESSION A1

Landfill Processes

15.30 - 15.50

N. Yesiller and J. L. Hanson (US)

Analysis of Temperatures at a Municipal Solid Waste Landfill

15.50 - 16.10

C. Rodriguez, S. Hilgsmann, J. Destain, R. Charlier and Ph. Thonart (BE)

Cellulose Bioavailability in Waste Refuse

16.10 - 16.30

P. Kjeldsen, C. Scheut, A. M. Fredenslund, H. Poulsen (DK)

Release and Attenuation of Fluorocarbons in Landfills

16.30 - 16.50

L. Marquez-Benavides and I. Watson-Craik (UK)

Intermediate Soil Cover in Landfills: Effects on Anaerobic

Biodegradation Performance Parameters

16.50 - 17.10 Discussion

17.10 - 17.40 Coffee break

17.40 - 18.00 Poster discussion

SESSION A2

Leachate Generation

18.00 - 18.20

J. Fellner, R. Huber, G. Doeberl and P. H. Brunner (AT)

Hydraulics of MSW Landfills and Implications for Water Flow Modelling

18.20 - 18.40

T. Gisbert, C. Bloquet, G. Barina, C. Petitpas (FR)

Assessing the Quantity of Leachate: A Simple Tool for Short and Long Term Prediction and Its Evaluation on Real Size Landfill Sites

18.40 - 19.00

A.L. Garcia de Cortazar, J. M. Jofre, I. T. Monzon and M.S. Roman (ES)

Comparative Analysis of Three Hydrological Landfill Models (Model 1.0 Help and Model 2.0) Through a Practical Application

19.00 - 19.20

J. Kindlein, D. Dinkler and H. Abrens (DE)

Verification and Application of Coupled Models for Transport and Reaction Processes in Sanitary Landfills

19.20 - 19.40 Discussion

Panorama Hall

SESSION B1

Waste Management Concepts

15.30 - 15.50

R. Stegmann, T. H. Christensen and R. Cossu
Tendencies in future Waste Management

15.50 - 16.10

N. Mair (UK)
Environmental Impact Assessments: A Help or a Hindrance to Waste Facility Siting?

16.10 - 16.30

K. Hillebrecht and A. Behnsen (DE)
Socio-Economic Evaluation of Waste

16.30 - 16.50

F. Soroushian (US)
Integrated Organic Waste Recycling Program: A Sustainable Approach for Turning Problems into Profit

16.50 - 17.10 Discussion

17.10 - 17.40 Coffee break

17.40 - 18.00 Poster discussion

SESSION B2

Waste Generation & Composition

18.00 - 18.20

P. Beigl, F. Schneider, G. Wassermann and St. Salhofer (AU)
Municipal Waste Generation Trends in European Countries and Cities

18.20 - 18.40

H. Weigand, J. Fripan, I. Przybilla and C. Marb (DE)
Composition and Contaminant Loads of Household Waste in Bavaria, Germany: Investigating Effects of Settlement Structure and Waste Management Practice

18.40 - 19.00

S. Lebersorger, F. Schneider and W. Hauer (AT)
Waste Generation from Households - Models in Theory and Practical Experience from a Case Study in Multi-Family Dwellings in Vienna

19.00 - 19.20

S. Tommasini, M. Ricci, G.P. Bozzzo, P. Conto', L. Franz, W. Giacetti, M. Santi and G. Vendrame (IT)
Fee based on "pay as you throw" principle as a Tool for Waste generation control in Italy

19.20 - 19.40 Discussion

Central Hall

SESSION A3

Mechanical Biological Pretreatment (MBP) of Waste

09.00 - 09.20

K. Soygez and S. Plickert (DE)

Material Flux Management of Waste by Mechanical-Biological Pre-Treatment

09.20 - 09.40

W. Muller, M. Niesar and T. Turk (DE)

Optimized Mechanical Treatment and Material Segregation Through Ballistic Separation within Mechanical Biological Waste Treatment

09.40 - 10.00

G. Rettenberger (DE)

Two Years Experiences with a Full Scale two Step Anaerobic Pre-Treatment Process Including a Leaching out Reactor

10.00 - 10.20

R. Stegmann and J. Heerenklage (DE)

Anaerobic Treatment of RMSW with Subsequent Aeration of the Liquid Phase

10.20 - 10.40

Discussion

10.40 - 11.10

Coffee break

SESSION A4

Environmental Effects and Landfilling of MBP Waste

11.10 - 11.30

J. Stockinger and H. Doedens (DE)

Air Management and Emission Control at Mechanical Biological Waste Treatment Plants (MBT)

11.30 - 11.50

B.D. Bone, K. Knox, A. Picken and H. Robinson (UK)

The Effect of Mechanical and Biological Pretreatment on Landfill Leachate Quality

11.50 - 12.10

M. Kuehle-Weidemeier and H. Doedens (DE)

Landfilling and Properties of MBP Waste

12.10 - 12.30

G. Ziehmman, K. Munnich and K. Fricke (DE)

Deposition of Mechanical-Biologically Treated Municipal Solid Waste

12.30 - 12.50

Discussion

Panorama Hall

SESSION B3

Lining Systems

09.00 - 09.20

D. Cazzuffi and R. Cossu (IT)

Engineering of Landfill Lining Systems

09.20 - 09.40

D.R.V. Jones, N. Dixon, and S. Storey (UK)

Lessons Learned from UK Landfill Failures

09.40 - 10.00

S.L. Bartelt-Hunt, J.A. Smith and S.E. Burns (US)

An Assessment of the Sorptive and Mechanical Properties of Amendments for Earthen Landfill Liners

10.00 - 10.20

S. Imaizumi, M. Iizuka, A. Toryuu and Y. Doi (JP)

Critical Ratio of Bentonite Addition into Sandy Soil to make a Impermeable Compacted Soil Liner

10.20 - 10.40

Discussion

10.40 - 11.10

Coffee break

SESSION B4

Waste Mechanics (I)

11.10 - 11.30

H. Goedecke, G. Ziehmman and K. Fricke (DE)

Measurement of Horizontal Deformation of Landfill

11.30 - 11.50

F. Olivier, J.P. Gourc, S. Lopez, S. Benhamida and D. Van Wyck (FR)

Mechanical Behaviour of Solid Waste in a Fully Instrumented Prototype Compression Box

11.50 - 12.10

C. Heiss-Ziegler and K. Febrer (AT)

Geotechnical Behaviour of Mechanically - Biologically Pre-Treated Municipal Solid Waste (MSW)

12.10 - 12.30

D. Koga, T. Shimaoka, S. Sakita, M. Hanashima and H. Kokubo (JP)

Settlement Characteristic of Incineration Residue and the Behaviour of the Pollutant in a Sea Area Landfill Site

12.30 - 12.50

Discussion

Central Hall

SESSION A5

Leachate Drainage and Collection

15.30 - 15.50

D.R.V. Jones and R.W. Marshall (UK)

Leachate Drainage, Collection and Extraction Systems: UK Best Practise

15.50 - 16.10

R.K.Rowe and J.F. VanGulck (CA)

Experimental and Modeling Study into Clogging of Leachate Collection Systems

16.10 - 16.30

J. Stibinger (CZ)

Hydraulic Estimation of Landfill Leachate Rate at the Bottom of Sanitary Landfill of Domestic Waste in Osecna Location - Northern Bohemia, Czech Republic -

16.30 - 16.50

T. Bouchez, M-L. Munoz, C. Bordier, C. Aran, S. Vessigaud and C. Duquennoi (FR)

Clogging of MSW Landfill Leachate Collection Systems: Prediction Methods and in Situ Diagnosis

16.50 - 17.10 Discussion

17.10 - 17.40 Coffee break

17.40 - 18.00 Poster discussion

SESSION A6

Leachate Quality

18.00 - 18.20

H.A van der Sloot, A. van Zomern, J.J. Dijkstra, D. Hoede and H. Scharff (NL)

Prediction of Long Term Leachate Quality and Chemical Speciation for a Predominantly Inorganic Waste Landfill

18.20 - 18.40

E.D.Yildiz and K.Unlu (TR)

Effects of Landfill Development on Leachate Characteristics

18.40 - 19.00

J.P. Labanowski, and G. Feuillade-Catalifaud (FR)

Fractionation of Organic Matter from a Stabilised MSW Landfill Leachate

19.00 - 19.20

G. Barina, T. Gisbert, L. Puglierin, B. Boin, X. Lefebvre and A. Gemignani (FR)

Integrated Study of Waste Characteristics, Effluents and Waste Mass Evolution after 4 Years of Large Scale Recirculation

19.20 - 19.40 Discussion

Panorama Hall

SESSION B5

Anaerobic Digestion of Solid Waste (I)

15.30 - 15.50

L. De Baere (BE)

State-of-the-Art of Anaerobic Digestion of Municipal Solid Waste

15.50 - 16.10

H. Santen (DE)

New Approaches in Anaerobic Waste Treatment-the Percolation Technology

16.10 - 16.30

M. Kranert, K. Hillebrecht, F. Fruth, A. Sihler (DE)

Anaerobic Treatment of Biowaste in Agricultural Co-Fermentation Plants-Technical Requirements, Problems and Chances

16.30 - 16.50

A. Ochs and R. Widmann (DE)

A Rapid Method for Indicating Biological Degradability using the Example of Carbohydrate-Rich Organic Solids

16.50 - 17.10

Discussion

17.10 - 17.40

Coffee break

17.40 - 18.00

Poster discussion

SESSION B6

Gas Generation and Emissions (I)

18.00 - 18.20

L.H. Rohrs, A. B. Fourie and J.W.F. Morris (ZA)

Gas Potential and the State of Decay of MSW

18.20 - 18.40

D.L. Barry, R. Smith, R.G. Gregory and C. Harries (UK)

Methane Production , Emission and Control During Active Landfilling

18.40 - 19.00

B. Fecil, M. Heroux and C. Guy (CA)

Development of a Method for the Measurement of Net Methane Emissions from MSW Landfills

19.00 - 19.20

M. Morvet, C. Aran, J. Bogner, J. Chanton, K. Spokas and I. Hebe (FR)

Methane Mass Balance: a Review of Field Results from Three French Landfill Case Studies

19.20 - 19.40

Discussion

Central Hall

SESSION A7

Leachate Treatment (I)

09.00 - 09.20

G. Bertanza (IT)

Landfill Leachate Recirculation: Technical-Economic Evaluation of Intermediate Nitrification

09.20 - 09.40

E. Cornu, J. Ballot, N. Bentounes, H. Pernot and S. Hercule (FR)

Leachate Thermal Treatment Using Landfill Gas

09.40 - 10.00

H. Robinson, T. Walsh, S. Jennings and S. Farrow (UK)

Remediation of Leachate Problems at Arpley Landfill Site

10.00 - 10.20

U. Witz and H.-J. Ebrig (DE)

Sustainable Leachate Treatment Systems for Landfill Aftercare Using Nitrification and Denitrification

10.20 - 10.40

Discussion

10.40 - 11.10

Coffee break

SESSION A8

Leachate Treatment (II)

11.10 - 11.30

T.A. Peters (DE)

20 Years Experience with Reverse Osmosis in Leachate Treatments

11.30 - 11.50

H. Woelders and H. Schonewille (NL)

Leachate Treatment by Direct Capillary Nanofiltration

11.50 - 12.10

H.H.P. Fang, I. W. C. Lau and P. Wang (CN)

Ozonation with Hydrogen Peroxide for a Leachate Pre-treated with UASB and Fenton Coagulation

12.10 - 12.30

S. Hercule, E. Cornu, J. ballot, C. Coquant, C. Dumesnil and D. Lebourhis (FR)

Review of In-Situ Leachate Treatment Plant: Three Case Studies in France

12.30 - 12.50

Discussion

Panorama Hall

SESSION B7

Gas Generation and Emissions (II)

09.00 - 09.20

C. Deed, J. Gronow, A. Rosevear, R. Smith and P. Braithwaite (UK)

A strategy for Emissions Based Regulation of Landfill Gas

09.20 - 09.40

S. Thorneloe (US)

U.S. EPA Field Test Program for Updating Landfill Gas Emission Factors

09.40 - 10.00

V. Taramini, A. Budka, D. Poitel, L. Puglierin and O. Bour (FR)

Assessment of Landfill Gas Emissions through Different Type of Covers

10.00 - 10.20

T. Parker, G. Apps and A. Rosevear (UK)

Evaluation of Chemical Analysis Techniques for Trace Components of Landfill Gas

10.20 - 10.40

Discussion

10.40 - 11.10

Coffee break

SESSION B8

Gas Emissions and Treatment

11.10 - 11.30

M. Kelly, B. Latham and J. Ramsay (UK)

The Performance of Passive - Biofilter Landfill Gas Vents at Ballymacvea Landfill, Ballymena, Northern Ireland

11.30 - 11.50

J. Streesse and R. Stegmann (DE)

Design of Biofilters for Methane Oxidation

11.50 - 12.10

H. Scharff and J. Jacobs (NL)

Combustion of Low Methane Landfill Gas

12.10 - 12.30

T. Takeshita, S. Higuchi and M. Hanashima (JP)

Treatment of Hydrogen Sulfide Gas Generated in Landfill Sites

12.30 - 12.50

Discussion

Central Hall

SESSION A9

Landfill Top Covers

15.30 - 15.50

*K. Hupe, K.-U. Heyer, J.F. Becker, O. Traore, S. Noetzel and
R. Stegmann (DE)*

Investigations of Alternative Landfill Surface Sealing Systems in Test Fields

15.50 - 16.10

E. Kavazanjian and J.G. Dobrowolski (US)

Cost and Performance Evaluation of Alternative Final Covers

16.10 - 16.30

J.F. Wagner and C. Schnatmeyer (DE)

Excavation Results of a Four Year Test Field Study on Cover Sealing Systems

16.30 - 16.50

G.E. Blight, A. B. Fourie, P. Novella and T. Pieterse (ZA)

'Store and Release' Landfill Covers in Semi-arid Climates: Experiments in South Africa

16.50 - 17.10

Discussion

17.10 - 17.40

Coffee break

17.40 - 18.00

Poster discussion

SESSION A10

Landfilling of MSW Incineration Residues

18.00 - 18.20

*R.M. Cenci, L. Musmeci, F. Sena, G. Lodigiani, P. Anelli and
A. Soresini (IT)*

Control of an Area at Potential Risk from Incineration Plants before their Start Up and During the Operation

18.20 - 18.40

B.D. Bone, K. Knox, A. Picken and H.D. Robinson (UK)

The Effect of Carbonation on Leachate Quality from Landfilled Municipal Solid Waste (MSW) Incinerator Residues

18.40 - 19.00

H. Weigand, S. Muller and C. Marb (DE)

Seepage Water Emission of Inorganic Contaminants from MSWI Bottom Ash: Results from lab-, Pilot-, and Field -Scale Experiments

19.00 - 19.20

T. Astrup and T. H. Christensen (DK)

Estimating Long-Term Leaching of Heavy Metals from APC Residues Combining pH-Titrating Leaching Tests and Geochemical Modelling

19.20- 19.40

Discussion

Panorama Hall

SESSION B9

Landfill Gas Technology (I)

15.30 - 15.50

S. Waerdt and B. Willenbrink (DE)

Microturbines - a New Way of Landfill Gas Utilisation in Europe

15.50 - 16.10

H. Willumsen (DK)

Landfill Gas Plants - Number and Types Worldwide

16.10 - 16.30

R. Lewicki and I. Gadsby (UK)

Low Pressure Membrane Technology for Landfill Gas Purification

16.30 - 16.50

J. Gebert, A. Groengroeft and G. Mieblisch (DE)

Methane Oxidation in a Biofilter System - Influence of Water Content, Temperature and Salt Concentration

16.50 - 17.10

Discussion

17.10 - 17.40

Coffee break

SESSION B10

Landfill Gas Technology (II)

17.40 - 18.00

R. Iannelli, M. Galea and A. Moreno (IT)

Application of Molten Carbonate Fuel Cells in the Exploitation of Landfill Gas. A Case Study in Southern Italy

18.00 - 18.20

D. Wirt, J. Bruch and T. Lohr (DE)

Utilization of Lean LFG Using Membrane Processes

18.20 - 18.40

S. Cernuschi, M. Giugliano, M. Grosso, G. Lonati and P. Mattaini (IT)

Trace Organics Atmospheric Emissions from Landfill Gas Production and Flaring

18.40 - 19.00

R.G. Gregory, A.G. Gillett and J.H. Blowes (UK)

UK Landfill Gas Generating Set Emissions

19.00- 19.20

Discussion

Central Hall

SESSION A11

Composting of Biowaste

09.00 - 09.20

E. Binner and K. Kitzberger (AU)

Conditions /Parameters Characterising the Composting Process

09.20 - 09.40

S. Silvestri, L. Dallago, V. Guzzo, G. Andreottola, P. Giandon and G. Zorzi, L. Paradisi (IT)

Development of Methods for Static and Dynamic Respirometry to Assess Compost Stability

09.40 - 10.00

P. Lechner and E. Smidt (AT)

Humic Acids, a Parameter for Compost Quality - A New Approach for Sustainable Soil Mangement

10.00 - 10.20

P. Giandon, L. Clamor, F. Germani and V. Guzzo (IT)

Heavy Metals and Impurities in the Compost which is Produced in Veneto Region, Italy

10.20 - 10.40 Discussion

10.40 - 11.10 Coffee break

SESSION A12

Refuse Derived Fuel

11.10 - 11.30

M. Schirmer, S. Eckardt and B. Bilitewski (DE)

Economic Advantages of the Energetic Recovery of Refuse Derived Fuels from Domestic Waste by the Implementation of Emission Trade

11.30 - 11.50

S. Eckardt and H. Albers (DE)

Specifying Criteria for the Utilisation of Refuse Derived Fuels (RDF) in Industrial Combustion Plants

11.50 - 12.10

T. Pretz and K.-J. Onasch (DE)

Mechanical Processing of Municipal Solid Waste with Modern Sorting Technologies

12.10 - 12.30

V. Belgiorio, G. De Feo, R.M.A. Napoli and D. Panza (IT)

An "Alternative" Disposal for Refuse Derived Fuel

12.30 - 12.50 Discussion

Panorama Hall

SESSION B11

Methane and Trace Gas Oxydation in Landfill

Covers

09.00 - 09.20

J. Bogner, C. Scheut, J. Chanton, D. Blake, M. Morvet, C. Aran and P. Kjeldsen (US)

Field Measurement of Non-methane Organic Compound Emissions From Landfill Cover Soils

09.20 - 09.40

C. Scheut, P. Kjeldsen, J. Bogner and M. Morvet (DK)

Aerobic Degradation of Non-methane Organic Compounds in Landfill Cover Soils

09.40 - 10.00

B. Wawra, T. Holfelder, C. Ott, L. Fornes, J. Jager and U. Zanke (DE)

Development of a Landfill Cover with Capillary Barrier for Methane Oxidation-The Capillary Barrier as Gas Distribution Layer

10.00 - 10.20

P. Hettiaratchi and D. Pokhrel (CA)

A New Approach to Quantify Methane Oxidation in a Landfill Bio-Cover - Experience with a Pilot Scale Landfill Test Cell

10.20 - 10.40 Discussion

10.40 - 11.10 Coffee break

SESSION B12

Risk Assessment and Modelling

11.10 - 11.30

D.H. Hall, D. Drury, J. Smith, H. Potter and J. Gronow (UK)

Predicting the Groundwater Impact of Modern Landfills: Major Developments of the Approach to Landfill Risk Assessment in the UK (Landsim 2.5)

11.30 - 11.50

M. Marques and W. Hogland (UK)

Groundwater Risk Assessment for Different Waste Stream Disposal:Spillepeng Landfill, Sweden

11.50 - 12.10

R.G. Gregory, G.M. Attenborough, D.H.Hall and C. Deed (UK)

The Validation and Development of an Integrated Landfill Gas Risk Assessment Model : Gassim

12.10 - 12.30

T.V. Bote, L. Nilausen, P. Kjeldsen, K.E. Andersen and L. Andersen (DK)

Danish Guidelines for Investigation and Risk Assessment of Gas Producing Landfills

12.30 - 12.50 Discussion

Central Hall

SESSION A13

Waste Management in Developing Countries

15.30 - 15.50

C. Collivignarelli, S. Sorlini, S. Cavallari and M. Vaccari (IT)

Wastes Management and Recovery in Developing Countires

15.50 - 16.10

S. Pichonsaija, J. Trankler and W. Zimmermann (TH)

The Role of Formal and Informal Sectors in Solid Waste Management of Developing Countries

16.10 - 16.30

D.Greedy (UK)

From Dump to Sanitary Landfill and what next - A Case Study from the Lebanese Capital Beirut

16.30 - 16.50

G.Kocasoy (TR)

Institutional Structure of the Solid Waste and Landfill Management in Developing Countries

16.50 -17.10 Discussion

17.10 -17.40 Coffee break

17.40 -18.00 Poster discussion

SESSION A14

Landfilling in Developing Countries

18.00 - 18.20

U. Boeschen and P. Erol (DE)

Sustainable But Low Cost Emission Prevention Options in Landfilling

18.20 - 18.40

J.M. Ball and L. Bredenbann (ZA)

A South African Project to Remediate Dumpsites

18.40 - 19.00

C. Visvanathan, J. Trankler, B.F.A. Basnayake, C. Chiemchaisri,

K. Joseph and Z. Gonming (TH)

Landfill Management in Asia- Notions about Future Approaches to Appropriate and Sustainable Solutions

19.00 - 19.20

L.J. Strachan, R. Wienard, K.S. Moroka, A.P. Sanghvi and Chronowski (ZA)

Viable Landfill Gas to Electricity Generation Projects Through a CDM - a First for Africa

19.20 -19.40 Discussion

Panorama Hall

SESSION B13

In Situ Aeration of Landfills (I)

15.30 - 15.50

M. Ritzkowski, K.-U. Heyer and R. Stegmann (DE)

In Situ Aeration Of Old Landfills: Carbon Balances, Temperature and Settlement

15.50 - 16.10

S. Hantsch, B. Michalzyk and B. Bilitewski (DE)

Different Intensities of Aeration and their Effect on Contaminant Emission Via The Leachate Pathway From Old Landfill Waste - A Laboratory Scale Study

16.10 - 16.30

R. Cossu, R. Raga and D. Rossetti (IT)

Full Scale Application of in Situ Aerobic Stabilization of old Landfills

16.30 - 16.50

K.-U. Heyer, K. Hupe, M. Ritzkowski and R. Stegmann (DE)

The Low Pressure Aeration of Landfills: Experience of Pre-Investigations, Technical Implementation, Operations, Costs

16.50 -17.10 Discussion

17.10 -17.40 Coffee break

17.40 -18.00 Poster discussion

SESSION B14

Aftercare of Landfills

18.00 - 18.20

R. Stegmann (DE)

Discussion of Criteria for the Completion of Landfill Aftercare

18.20 - 18.40

R. Cossu and D. Rossetti (IT)

Pilot Scale Experiences with Sustainable Landfilling based on the PAF Conceptual Model

18.40 - 19.00

A. A.M. Boerboom, E. Foppen and O. Van Leeuwen (NL)

Risk Assessment Methodology for After-Care of Landfills based on the Probabilistic Approach

19.00 - 19.20

A. Fourie and J. Morris (ZA)

The Irrelevance of Time as a Criterion for Aftercare Provision

19.20 -19.40 Discussion

Central Hall

SESSION A15

Public Concern & Communication

09.00 - 09.20

T. Matsuto, B. Rahardyan, N. Tanaka, Y. Kakuta (JP)

Analysis of People's Concerns About Impacts of SWM Facilities

09.20 - 09.40

S. Hancock, R. Parker and D. Ife (AU)

Public Consultation on Hazardous Waste Management - The Gap between Perception and Science

09.40 - 10.00

C. Stiglitz (AT)

Effective Consumer Communication- Key Success Factor for Municipal Solid Waste Management Strategies

10.00 - 10.20

A. Read (UK)

Effective Household Communications Campaigns: Recycling Lessons from the UK

10.20 - 10.40

Discussion

10.40 - 11.10

Coffee break

SESSION A16

Hygienic Aspects in Waste Management

11.10 - 11.30

T.L. Gladding, J. Thorn and R. Smith (UK)

Air Quality and Worker Health Effects in Materials Recovery Facilities (MRFs) in England and Wales

11.30 - 11.50

A.M. Coccia, P. M. B. Gucci and E. Stacul (IT)

Municipal Waste Collectors and Paper Bins: Microbial Assessment of Surfaces and Bioaerosol Contamination

11.50 - 12.10

A. Stringfellow, C. Banks, M. Chesshire and L. Pritchard (UK)

Survival of Pathogenic Bacteria during Thermophilic and Mesophilic Anaerobic Digestion of Food Waste

12.10 - 12.30

S. Burnley (UK)

The Use of Chemical Composition Data in Assessing the Environmental Impact of Municipal Waste Management Options

12.30 - 12.50

Discussion

Panorama Hall

SESSION B15

Life Cycle Analysis

09.00 - 09.20

S. Thorneloe (US)

Holistic Approach to Environmental Management of Municipal Solid Waste

09.20 - 09.40

P. McHenry, P. Longhurst, M. Lowe, B. MacIntosh and R. Seaton (UK)

The Development of a Decision Support Tool for Innovative Waste Strategy Planning

09.40 - 10.00

N. Unger and G. Wassermann (AT)

The Use of Appropriate Software-Tools for LCA in Waste Management - A Comparison

10.00 - 10.20

T.H. Christensen, J. Kierkeby, J. L. C. Jansen and T. Hulgaard (DK)

Environmental Assessment of Source - Separation of Organic Household Waste

10.20 - 10.40

Discussion

10.40 - 11.10

Coffee break

SESSION B16

Landfill Operation

11.10 - 11.30

E. Senante, L. Galtier, C. Bekaert, L. Lambolez-Michel and

A. Budka (FR)

Odours Management at MSW Landfill Sites: Odours Sources, Odourous Compounds and Control Measures

11.30 - 11.50

L. Riquier, M. Guerbois, A. Budka, I. Hebe and S. Riviere (FR)

Underground Fire Characterisation in Landfills : Investigation Methods

11.50 - 12.10

M. Ettala, K. Sormunen, M. Englund, P. Hyvonen, T. Laurila, K. Karhu and

J. Rintala (FI)

Instrumentation of a Landfill

12.10 - 12.30

W.J. Van Vossen, H. Woelders, D. Overzet and M. De Jong (NL)

New Strategy and Methodology for Groundwater Monitoring of Operational Landfills based on Natural Attenuation (NA)

12.30 - 12.50

Discussion

Central Hall

CLOSING SESSION

Chairman: R. Stegmann (DE)

15.30 - 16.30

Reports on Workshop Sessions

Chairmen's reports on Workshop activity highlighting the controversial aspects, open questions and future developments as may have arisen from discussion

16.30 - 18.30

Round Table

"Is the EU Directive the right tool for landfill sustainability?"

Representatives from EU and different European Countries will discuss on the following items:

- Concepts of sustainability
- Reduction of organic fractions in waste or reduction of biological activity of waste ?
- By which instrument reduction targets can be realistically achieved ?
- How to control reduction targets?
- Landfill design should prevent water infiltration ? Seaming or not seaming the top cover?
- Landfill aftercare: How to set time and/or performance ?

21.00 *Gala Dinner and Closure*

The award "Life for waste" will be delivered

SPECIALIZED SESSIONS, THEMATIC SESSIONS AND WORKSHOPS

Daily Programme

These sessions will be held, as indicated, in rooms with varied seating capacity:

- Baldacchino Room (100 places)
- Church Room (100 places)
- Lungomare Room (130 places)
- Dune Room (100 places)

Due to the limited number of places, pre-registration is required. Please fill in and return the enclosed registration form by September 12th 2003.

Monday October 6 - Afternoon

15.30 - 19.40

Baldacchino Room

SESSION C1

GIS in Waste Managment

G. Wassermann , M. Odic and E. Schedelberger (AT)

The Applicability of Geographic Information Systems as Decision Support Tools in Waste Management

S. Suzuki, H. Fumiaki and Y. Matsufuji (JP)

Visualization for Material Flow based on Integrated Solid Waste Management System by using GIS

O.Pollmann and G. Nitsche (DE)

Application and Utilization of Facility Management Systems in the Waste Disposal Industry for the Recording and Monitoring of Hazardous Waste Products

R. Verro, E. Benfenati and D. Genab (IT)

Chemical Analysis, Distributed Modelling and Risk Indices in a GIS Based Methodology for Landfill Risk Assessment

A. Allen, G. Brito, P. Caetano, C. Costa, V. Cummins, J. Donnelly,

S. Koukoulas, V. O'Donnell, C. Robalo and D. Vendas (IE)

A Landfill Site Selection Procedure Incorporating GIS Modelling

K.Luthbom and A.Lagerkvist

Geographical Information Systems (GIS) and Landfill Siting

SESSION C2

Landfill Surveying by Geophysical Methods

C.-Y. Lee, S.-Y. Lee, J.-K. Yun, K.-H. Kim and T.-J. Lee (Korea)

Evaluation of Remedial Alternatives Using Geophysical Survey and Characterization of Asbestos Containing Material in Landfill

S. Riviere, J.C. Goumand , M. Guerbois, I. Hebe (FR)

Caracterisation of Underground Fires in Landfills Using Geophysical Methods: a Case Study France

S. Moreau, J.-M. Bouyé, G. Barina and O. Oberti (FR)
Electrical Resistivity Survey to Investigate the Influence of Leachate Recirculation in a MSW Landfill

S. Grellier, C. Duquennoi, R. Guerin, M-L. Munoz and M-C. Ramon (FR)
Leachate Recirculation-Study of Two Techniques by Geophysical Surveys

H. Rosqvist, T. Dahlin, A. Fourie, L. Robbs, A. Bengtsson and M. Larsson (SE)
Mapping of Leachate Plumes at two Landfill Sites in South Africa using Geoelectrical Imaging Techniques

S. Teggi, R. Cecchi, G. Ghermandi and M.P. Bogliolo (IT)
Remote Sensing for Landfills Investigations

Church Room

SPECIALISED SESSION D1

Construction and Operation of Landfills - Case Studies

Simard, J. Norstrom and H. Bourque (CA)
Construction, Operation and Monitoring of a Bioreactor Landfill in Sainte-Sophie, Quebec, Canada

R. Cossu, M.C. Lavagnolo and M. Pilia (IT)
Design of the Sassari Landfill - Case Study

S. Purdy and F. Sabugal (US)
Detailed Design for a New Sanitary Landfill for the Subic Bay Metropolitan Authority, Olongapo, Philippines

L. O'Toole, N.E. Howe, E. Poulsen, C. Christiansen and H. Devlin (IE)
Leachate Management at an Irish Estuarine Landfill - A Case Study

G. Sellers and H.F. Cook (UK)
Paper Mill Sludge as a Soil Amendment: The Effects on Wheat Grown on a Landfill Site Restored with Gault Clay and a Soil Forming Material

S. Yannopoulos, N. Dermisi and G. Dimopoulos (GR)
Design of the Drainage and Seepage Control Measures of a Landfill at Thessaloniki, Greece

SPECIALISED SESSION D2

Landfilling under Special Climate Conditions

C. Visvanathan, J. Trankler, P. Kuruparan and Q. Xiaoning (TH)
Effects of Monsooning Conditions on the Generation and Composition of Landfill Leachate- Lysimeter Experiments with various Input and Design Features

R.B. Wallace and C.G. Talich (USA)
Stormwater and Leachate Management Challenges in Wet Climates

J. Trankler and C. Visvanathan (TH)
Mechanical Biological Pretreatment in South-east Asia Results of a First Practical Approach

C. Maurice, K. Kylefors and A. Lagerkvist (SE)
Constructed Wetlands for Leachate Treatment in Cold Climate Vegetation Survival and Function During Winter

A. Robinson, N. Damodaran, N. Kalas-Adams and E. David (US)
Landfills in Developing Countries and Global Warming

M. Marques and M. Manzano (BR)
Hydrological Performance of Sanitary Landfills in Different Climatic Regions in Brazil

Lungomare Room

THEMATIC SESSION S1

Landfill Extension

Grosso, F. Bauducco, P. Brizio, R. Cossu, L. Fantino and G. Genon (IT)
Design and Construction of Draining Barrier for Additional
Leachate Recovery in Municipal Waste Landfill

L.O'Toole, W. Madden and N.E.Hone (IE)
Engineering Landfills in Soft Soils-A Case Study of Three Irish
Landfills

R.J. Dunn and A. De (US)
A New MSW Landfill Well below Groundwater in a Highly Seismic
Region

*E. Blond, M. Bouthot, A. Fortin, O. Vermeersch, S. Davidson and
P. Quesnel (CA)*
Landfill Extension Using Geogrids as Reinforcement: Discussion
and Case Study in Quebec

A. Bonoli, S. Stella, M. D'Alessandro and M. Bergonzoni (IT)
Optimisation of a Landfill Extension Project by using E.I.S.
Procedure

THEMATIC SESSION S2

Contaminated Soils

M. Doak, G. Carty and D. Lynott (IE)
The Remediation of Contaminated Land in the Republic of Ireland

J. Paca, J. Barta, O. Misiaczek and R. Bajpai (Czech Republic)
Biological Treatment of Mononitrotoluenes: Engineering and
Biological Aspects

F. Hirano, Y. Matsufuji and T. Nanri (JP)
A Simplified Analytical Method for Measuring Heavy Metals in
Contaminated Soil

Bezama, K.E. Lorber, R. Navia and J. Novak (AT)
An Expert System for the Selection of an Optimised Alternative for
the Management of PAH/CHC Contaminated Sites: Definitions and
Future Expectations

M.C. Zanetti, S. Fiore, R. Sethi, G. Genon and A. Di Molfetta (IT)
In-Situ Remediation by means of Zero-Valent Iron Reactive Barriers:
Laboratory Tests

L. D'Aprile, M. R. Boni, G. De Casa and R. Baciocchi (IT)
Use of Green Compost for Heavy Metals Treatment in Organic
Permeable Reactive Barriers

Dune Room

WORKSHOP W1

Geosynthetics and Recycled Synthetic Materials: No- Conventional Uses

Introductory lectures:

H. Ellard, P.J. Hewitt, R. Marshall and N. Robinson (UK)
Methodology for Assessing the Use of a Geosynthetic Composite as
a Leachate Drainage Media in a Composite Lined Landfill

P. Hudson, R. P. Beaven and W. Powrie (UK)
Bulk Compressibility and Hydraulic Conductivity of Used Tyres for
Landfill Drainage Applications

J.-Y. Lee, H.-Y. Jeon and H.-J. Kang (KR)
The Evaluation of the Side Protection and Drainage Box (SPDB)
Using Recycled Poly-Meric Material in the Landfill

Tuesday October 7 - Morning

09.00 - 12.50

Baldacchino Room

SPECIALISED SESSION C3

National Reports and Strategies

J.B. Joseph (UK)

Waste Management Policies and the Impact of Past Decisions - an Australian Case Study

A-M. M. Abdulla and F. Mabrous (KW)

Characteristics and Management of Solid Waste in Kuwait

I. Nissim, T. Shohat and E. Amichai (IL)

From Dumping to Recovery- Solid Waste Management in ISRAEL

T.E. Houska (US)

Managing Change in The Business of Solid Waste

A. Karkazı, S. Skoulaxinou, A. Mavropoulos, E. Fagogeni and

A. Sitara (GR)

Solid Waste Management in The Greek Islands

D.Fatta, A. Papadopoulos, F.Kourmoussis, A.Mentzıs and

M.Loizidou (GR)

Development of a Strategic Action Plan for the Management of Solid Waste in Cyprus: a Step towards Sustainable Development

SPECIALISED SESSION C4

Waste Managment in Metropolitan Areas

J.B. Joseph, J. Sakulrat and S.T.S. Yuen (UK)

Municipal Solid Waste Management in Thailand: The Current Situation and Possible Short-Term Changes

H. Ganjidoust and B. Ayati (IR)

Solid Waste Characteristics and Minimization in Major Cities of I.R. Iran

P.H. Novella, M.A. Greenhalgh and M.S. Haider (ZA)

A Materials Recovery , Waste Transfer and Waste Disposal System for Cape Town - A Case Study

A. Koenig (CN)

The Case of Hong-Kong: Is De-Industrialization the Key to Environmentally Sustainable Waste Management?

M. Fedorov (RU)

The State and Outlook for the Municipal Solid Waste Management Systems in Russia

S. Tawee and M. Ismail (MY)

Solid Waste Management in Malaysia:Its Problems and Solution

Church Room

SPECIALISED SESSION D3

Hydraulic Aspects in Landfilling

R. Beaven, J. Barker and A. Hudson (UK)

Description of a Tracer Test through Waste and Application of a Double Porosity Model

N. Mora-Naranjo, J.A. Meima, A. Haarstrick and D. C. Hempel (DE)
Experimental Investigation and Modelling of the Effect of Environmental Conditions on the Acetate and Methane Generation in Municipal Solid Waste

K. Badv (IR)

A Laboratory Modeling of Contaminant Transport through Silt by Upward and Downward Flow

A.I. Zacharof and A.P. Butler (UK)

Modelling Landfill Processes incorporating Data uncertainty - Model Assessment against experimental Data using statistical Techniques

W. Hogland, L. Thorneby and L. Mathiasson (SE)

Water Budget for Landfill Leachate Treatment Systems

M. Rappthel (DE)

Closure and Aftercare Regime for Landfills Below the Water Table

SPECIALISED SESSION D4

Landfilling Monitoring

D.R. Reinhart, T. Townsend and P. McCreanor (US)

Instrumentation for In Situ Monitoring of Municipal Solid Waste Landfill Processes

R. Santolini, D. Capelletti, C. Morolli, G. Pasini and C. Angelini (IT)

Monitoring with Ecological Indicators in the Program of Landfill Environmental Controls in Province of Forli-Cesena (Italy)

L. Lambolez-Michel, T. Gisbert, H. Billard, B. and J. Miralves (FR)

Analysis of Atmospheric Pollutants from Two Municipal Solid Waste (MSW) Landfills: Determination of Exposure Levels and Research of Possible Effects on Human's Health

R. Cioni, M. Guidi, B. Raco, S. Giamberini and P. Daddi (IT)

Measurement of Biogas Emissions From Air-Soil Interface in the MSW Landfill of Legoli (Pisa, Italy)

M. Bellino, M. Bergonzoni, F. Falleni, T. Forte, L. Musmeci, R. Cenci, V. Nizzoli, A. Piccardi (IT)

Evaluation of the Potential Contaminant Load on the Various Environment Compartments Near a Municipal Landfill

R.M. Cenci, F. Sena, M. Bergonzoni, N. Simonazzi, E. Meglioli,

L. Canovi, G. Locoro and P. Trincerini (IT)

Use of Mosses and Soils for the Monitoring of Trace Elements in Three Landfills, Used as Urban Waste Disposal Sites

Lungomare Room

THEMATIC SESSION S3

Waste Decomposition in Landfills

S. Wallner, W. Somitsch and H. Raupenstrauch (AT)

Spontaneous Ignition of Rubber Material Landfills

K. Nakasaki, K. Nagasaki and M. Kanda (JP)

Degradation Mechanisms of Biodegradable Plastic Under Laboratory-scale Thermophilic Composting Conditions

J. M. Lamborn and G. Frecker (AU)

A Review of Landfill Decomposition Modelling

Y. Moreau-Le Golvan, C. Triquenaux, J. Bogner, L. Smith and

M.-L. Munoz (AU)

Methanogenesis Optimisation by Controlling PH and Sulfate in a Bioreactor - Applied Research for Woodlawn Bioreactor (Australia)

W. Somitsch, S. Wallner, H. Raupenstrauch and K-H. Robra (AT)
Microbial Degradation of Natural and Synthetic Rubber in Rubber Material Landfills

THEMATIC SESSION S4

Treatment of Sewage and Industrial Sludge

M. H. Lopes, I. Cabrita, J. F. Santos Oliveira and I. Gulyurtlu (PT)
Immobilization of Heavy Metals From Sewage Sludge through Fluidized Bed Combustion

K. Stamatelatou, K. Dravillas and G. Lyberatos (GR)
A Novel Two-Stage Bioreactor System for the Production of Biogas from a Bioethanol Process Sludge

K.E.Lorber and C. Konrad (AT)
Aerobic Treatment of Non-Chromium Containing Tannery Wastes

M.C. Lavagnolo and A. Chiumenti (IT)
Aerobic Stabilisation of Tannery Sludge - Lab Tests

K.E.Lorber, A. Mayer and F. Rubelli (AT)
Immobilisation of Chromium Containing Tannery Waste in the Brick Industry

Dune Room

WORKSHOP W2

How to Classify and Evaluate Landfill Costs

Introductory lectures:

W.J. Van Vossen and C. Markeo (NL)
New European Methodology for Survey, Inventory and Classification of Landfills, Applied to the 2667 Landfills in Hungary

A.P. Kortegast and C. Purchas (NZ)
The New Zealand Landfill Full Cost Accounting Model - An Innovative Method for Estimating Landfill Disposal Costs

B. Couth, J. Davies, A. Howe (UK)
Landfill Financing and Contracts

E. Schaffeler (NZ)
Landfill Operations in Rural Area of Australia Finding a Balance between Transport Costs and Environmental Performance

Tuesday October 7 - Afternoon

15.30 - 19.40

Baldacchino Room

SPECIALISED SESSION C5

Waste Management in Developing Countries

A.Read and D. Wilson (UK)
The Strategic Planning Guide for Solid Waste Management - An Interactive Toolkit for Environmentally Developing Countries

L. Bredenhann, J. Ball, J. Lombard and R. Nortje (ZA)
Third Edition of Minimum Requirements and Doc. 4: Shaping the Future of Waste Management in South Africa

A. Magalang, L.F. Diaz and L. L. Eggerth (US)
Community-based Waste Reduction and Recovery: a mandatory requirement of the Philippine ecological solid waste management act.

A. De Schueler and C.F. Mahler (BR)
Composting Made with Urban Solid Waste in Brazil
M.A. Seck (SN)
Increasing Household Waste Collection Volume Thanks to Composting
N. Damodaran, A. Robinson, E. David and N. Kalas-Adams (US)
Urban Solid Waste Generation and Management in India

SPECIALISED SESSION C6

Landfilling in Developing Countries

S. Purdy, F. Sabugal (US)
Waste Management Practices on The Island of Mindanao, Philippines
D. Kumar and B.J. Alappat (IN)
A Technique to Quantify Landfill Leachate Pollution
F. Mbiri, S. Hilgsmann, A. Benzarti, S. Hilgsmann, C. Rodriguez and Ph. Thonart (TN)
Investigation of the Biological Activity and the Environmental Impact of Tunisian MSW Landfills
T. Yamamoto, G. Solorzano, R. Cuellar and G. Guzman (MX)
Landfill Management Improvement in Mexico City: Ground Subsidence Monitoring and Leachate Management
K. Joseph, S. Esakku, K. Palanivelu and A. Selvam (IN)
Studies on Landfill Mining at Solid Waste Dumpsites in India
G. Dilewski, J. Stretz (DE)
Mechanical-Biological Waste Treatment Options in Developing Countries - Results of the Sector Project of the German Technical

Church Room

SPECIALISED SESSION D5

Performance of Mineral Liners

M. Wahlstrom, J. Laine-Ylijoki, and M. Pihlajaniemi (FI)
Test Methods for Assessment of Environmental Properties of Mineral Liners at Landfills
M. Naismith, J. Wammes, E. Timmermans and W. Bebrems (NL)
Latest Research Regarding Durability and Performance on the Polymer-Enhanced Mineral Barrier
M.-Y. Choi, D.-G. Kang, J.-Y. Lee and S.-I. Choi (KR)
A Case Study of the Solidified Soil Liner Systems in the Coastal Landfill
B.-K. Tan, R.N. Yong, H.R. Thomas (UK)
Assessing the Suitability of Clay Soils For Landfill Liner Via Leaching Column Test
K.K. Tripathi and B.V.S. Viswanadham (IN)
Evaluation of the Performance of Sand-Bentonite Liners

SPECIALISED SESSION D6

Performance of Synthetic Liners

K.H. Johnson and J.L. Panders (US)
How do Modern Landfills Leak?
J.G. Dobrowolski, E. Kavazanjian (US)
Performance Demonstration for Alternative Liner Systems at Municipal Solid Waste Landfills

H. Y. Jeon, J. Y. Lee and J. J. Lee (KR)
Assessments of Seam Related Properties of Geosynthetics with Seaming Methods
P. Davies and K. Legge (ZA)
Geosynthetic Clay Liners: Use and Abuse in South Africa
T. Vangpaisal and A. Bouazza (TH)
Gas Leakage Rate through a Circular Defect in a GM / GCL Composite
T. Vangpaisal and A. Bouazza (TH)
Effectiveness of a Needle Punched GCL in Mitigating Landfill Gas Migration

Lungomare Room

THEMATIC SESSION S5

Material Recycling

E. Johnson (CH)
PET Recycling in Europe: Growth, but no Chemical Recycling yet
F. Schneider, G. Wassermann and S. Salhofer (AT)
Does Paper Recycling Cause Damage to the Environment. A case Study and Methodological Considerations
R. Mancini and E. Garbarino (IT)
Recycling of Building Rubble from Wet Processing
F. Campione and A. Milone (IT)
Exploitation of Solid Waste Generated From the Construction Industry
P.J. Longhurst and R.A. F. Seaton (UK)
Strategic Waste Catchment Evaluation-CFCs Removal and Materials Recovery from Fridges
J. Hoffmann, M. Julinova, P. Alexy and D. Bakos (CZ)
Employing Wastes for Producing Biodegradable Plastics based on Polyvinyl Alcohol

THEMATIC SESSION S6

Medical and Veterinary Waste

W.J. Jewell (US)
Biological Treatment of Medical Wastes Alternative to Incineration
F. Straka, J. Zabranska, M. Dohanyos and J. Doucha (CZ)
Possibilities of Safe Treatment and Utilization of Veterinary Sanitation Wastes
A.J. MacArthur, J. C. Milne and P.J. Young (UK)
Leachate Characteristics Arising From the Foot and Mouth Mass Burial Site in Scotland
E. Kizilari, N. Iosifidis, E. Voudrias and D. Panagiotakopoulos (GR)
Composition and Production Rate of Dental Solid Waste in Xanthi, Greece

Dune Room

WORKSHOP W3

Co-Landfilling of MBP Waste and Incineration Residues

Introductory lecture:
R. Cossu and R. Raga (IT)
Co-Disposal in Landfill of Mechanical Biological and Thermal Pretreated Waste: Lab Scale Test

Wednesday October 8 - Morning

09.00 - 12.50

Baldacchino Room

SPECIALISED SESSION C7

Waste Mechanics (II)

L. Andreas and A. Lagerkvist (SE)

Ash Injection for Landfill Stabilisation

C.F. Mahler and A. De Lamare Netto (BR)

Shear Resistance of Mechanical Biological Pre-Treated Domestic
Urban Waste

G. Watson, R. Beaven, C. Clayton and A. Hudson (UK)

Development of Techniques for Freezing Waste with Liquid
Nitrogen

Irene M.C. Lo and W. Zhou (CN)

Geotechnical Properties of Co-Disposal of Chemical Sludge with
Paper and Construction Waste

P. Carrubba and R. Cossu (IT)

Mechanical Behaviour of Mixtures of MBP and TTW Waste

SPECIALISED SESSION C8

Landfill Settlement

L.K.Ivanova, D.J. Richards and D.J. Smallman (UK)

An Investigation into the Factors affecting Secondary Settlement of
Wastes

F. Olivier, J.P. Gourc, M.L. Munoz, A. Budka and P. Denecheau (FR)

Validation of a Incremental Waste Settlement Prediction Model With
Surface Survey Data

J. McDougall and I. Pyrah (UK)

Modeling Load, Creep and Biodegradation Settlement in Landfill

D.J. White, D.J. Richards and A.C. Lock (UK)

The Measurement of Landfill Settlement using Digital Imaging and
PIV Analysis

Bouaziza, E. Kavazanjian, S. Aysar, J. Kodikara (AU)

Application of Geostatistical Model to Map Spatial Distribution of
Shear Wave Velocities of Solid Wastes

Church Room

SPECIALISED SESSION D7

Anaerobic Digestion of Solid Waste (II)

W.P.Clarke, H.H. Song and L.L. Blackall (AU)

The Hydrolytic Efficiency of Biofilms on Organic Solids in
Anaerobic Environments

M. Denecke, S. Willing and U. Walter (DE)

Acetic Acid and Doc Levels In The Hydrolytic Step of Digestion
Processes

V. Ivanov, O. Stabnikova, J.-Y. Wang, S.T.-L. Tay and J.-W. Tay (SG)

Use of Molecular Probes for Monitoring of Organic Waste
Biodegradation

S. Karnchanawong and K. Tipsuntornsak (TH)

Organic Waste Decomposition Using Leach Bed Anaerobic Digestion

T.E. Lai, P. Pullammanappallil and W.P. Clarke (AU)

A Model to Predict the Effect of Buffer on the Start-up of Slurry and Leach-Bed Anaerobic Digestions of Municipal Solid Waste

SPECIALISED SESSION D8

Composting of Biowaste

S. Schmidt and C. Pahl-Wostl (DE)

Assessment of Bio-waste Management Systems and Spatial Variability

T. Manios and E. I. Stentiford (GR)

The Effect in the Sanitisation Process of Green Waste Composting, When Reusing Partially Treated Landfill Leachates as a Water Source

G. Kanat, A. Demir, B. Ozkaya and M. S. Bilgili (TR)

Operational Optimization of Istanbul Waste Recovery and Composting Plant

M. Elboz (LB)

Assessment of Municipal Solid Waste Compost and its Effect on Crops

Lungomare Room

THEMATIC SESSION S7

Chemical & Thermal Stress in Geosynthetics

H. Yoshida and R.K. Rowe (JP)

Consideration of Landfill Liner Temperature

H.Y. Jeon, M. S. Lee and C. K. Park (KR)

Chemical Resistance and Weatherability of Nonwoven Geotextiles in Leachate Solutions

B.R. Seo, S. Moon, K. Nam and J. Y. Kim (KP)

Estimation of Mass Transfer Parameters of Volatile Organic Compounds through the Geomembrane using an Analytical Solution

D. Guyonnet, Ch. Clinard, G. Didier, Ch. Duquennoi, H. Gaboriau,

E. Gaucher, I. Hébé, V. Norotte, C.-H. Pons and N. Touze-Foltz (FR)

A Multiple-Scale Investigation of GCL Interaction with Leachate

THEMATIC SESSION S8

Integrated Solid Waste and Sewage Management

D. Zurawski and R. Stegmann (DE)

Example for the Application of decentralized Wastewater and Waste Treatment Concept for Hotel Complex

R.Cossu, M.C. Lavagnolo and O. Hirata (IT)

Anaerobic Co-Digestion of Food Waste and Separated Fractions of Domestic Sewage. Lab Scale Tests

Flor, L. Arroja and I. Capela (PT)

Anaerobic Co-Digestion of Organic Fraction of Municipal Solid Waste and Waste Activated Sludge at Different Ratios

M. Krupp and R. Widmann (DE)

Co-digestion of Sewage Sludge and Selected Organic Wastes in a Pilot Plant

R. Cossu and M. C. Lavagnolo (IT)

Decentralized System Application to Small Mountain Hotels in the Alps

G. Malina, T. Janecki and K. Binczyk (PL)
An Approach to Integrated Water, Sewage and Municipal Waste Management in Rural Areas. The Case Study: Pajeczno Commune - Poland

Dune Room

WORKSHOP W4

Waste Management in Countries of Iberian Culture

Introductory lecture:

L. Diaz (US) and C. Martinez Orgado (ES)
Waste Management and Landfilling in South America and other Iberian Countries

Wednesday October 8 - Afternoon

15.30 - 19.40

Baldacchino Room

SPECIALISED SESSION C9

Leachate Treatment (III)

M.S. Carville, S.D. Last and J. Olufsen (UK)
A Characterisation of Contaminant Removal Achieved by Biological Leachate Treatment Systems

G. Sandei, D. Frascari, F. Bronzini, G. Giordano, G. Tedioli and M. Nocentini (IT)

Lagoon Treatment of Landfill Leachate: a 10-years Experience in an Active Italian Landfill

P. Hohweg, K. Cord-Landwehr and H. Albers (DE)
MSW Landfill Leachate Treatment Techniques in Germany - Experiences of a MSW Landfill Leachate Neighbourhood Group

M. Agopsonicz and A. Bialowiec (PL)
Researches of Ability Landfill Leachate Evapotranspiration of Young Willow Shoots - *Salix Amygdalina*

G.R. Alker, A.R. Godley and J. Hallett (UK)
Landfill Leachate Management by Application to Short Rotation Willow Coppice

L. Johansson-Westholm (SE)
Leachate Treatment with use of SBR-Technology Combined with a Constructed Wetland System at the ISATRA Landfill Site, Sweden

SPECIALISED SESSION C10

Leachate Treatment (IV)

T. Stephenson, S. Pollard and E. Cartmell (UK)
Feasibility of Biological Aerated Filters (BAFs) for Leachate Treatment

J.-L. Vassel, L. H. Jupsin and E. Praet (BE)
About Refractory COD Removal in MBR for Leachate Treatment

S. Waara, A.-S. Allard, M. Ek and A. Svenson (SE)
Chemical and Toxicological Characterization of Landfill Leachate after Treatment in a Pilot Scale Plant using Different Treatment Methods

P. Kangsepp, W. Hogland and L. Mathiasson (SE)
 An Industrial Leachate Treatment Systems Based on Filter-Bed
 Technique

E. Gombault, J. Skews (ZA)
 Pilot Plant Trials Conducted On The Treatment Of The Holfontein
 Hazardous Waste Site Leachate

Pinar and A. Ugurlu (TR)
 Ammonium Removal from Leachate by Turkish Clinoptilolite:
 Effects of Competing Ions

Church Room

SPECIALISED SESSION D9

Leachate Contamination and Attenuation

M.C.Bloor and C.J. Banks (UK)
 Assessing How Landfilling Could Affect The Ecology Of The Far-
 Field Aquatic Environment

V. Ettler, M. Matura, M. Mihaljevic, O. Sebek and P. Bezdicke (CZ)
 Heavy Metal Scavenging Mechanisms in Leachate-Polluted Waters: a
 Case Study of an Old Municipal Landfill of Prague, Czech Republic

M. Notarnicola, G. Mascolo, V. Simeone and G. Tiravanti (IT)
 A Case Study Analysis of Two Contiguous Municipal and Special
 Waste Sanitary Landfills: Groundwater Pollution from Leachate

P. Butler, C. Brook, A. Godley, K. Lewin and C.P. Young (UK)
 Attenuation of Landfill Leachate in Unsaturated Sandstone

J.M. Ball, P.H. Novella and J. Stow (ZA)
 Leachate Pollution Plume Migration and Attenuation

E.Ritter, J. C. Campos and R. Gatto (BR)
 Contamination Process Through an Organic Soil of Gramacho
 MSW Landfill

SPECIALISED SESSION D10

Quality and Behaviour of Landfill Top Soil

Watzinger, T.G. Reichenauer, W.E.H. Blum and M.H. Gerzabek (AT)
 Leachate Production and Gas Composition in a Re-Vegetated
 Landfill Cover under Landfill Leachate Irrigation

M. Morcet, M. Mori and M. Poitrenaud (FR)
 How to Use Compost as a Topsoil: two Cases Study for Landfill
 Final Cover Revegetation

L.M. Chu (CN)
 Nutrient Availability as Factor Affecting Ecosystem Development on
 Restored Landfills

J.C.M. Andrade and C.F. Mabler (BR)
 Contamination Risk of Heavy Metals Associated to the Vegetation
 of the Cover in a Landfill

C. N. Lowe and K.R. Butt (UK)
 Inoculation of Earthworms into Reclaimed Soils: Experiences from
 Britain

E. Comino, N. J. Enright and B.P. Miller (IT)
 Topsoil Soil Seed-Bank Determination for On-Site Capping

Lungomare Room

WORKSHOP W5

How to Assess the Stability of Lining Systems?

Introductory lecture:

S. Imaizumi, S. Xu, T. Bantou and M. Tsuboi, S. Usami (JP)

Study on Drag-Force Evaluation of the Liner Sheet with a Change of Slope Angle

N. Dixon, D.R.V. Jones and S. Storey (UK)

Assessment of the Stability of Landfill Lining System: UK Guidance

J. Forsman, A. Aalto, A. Palolahti and M. Unsihakala (FI)

Stability of Inclined Cap Liner System -Landfill Field Trials

Dune Room

WORKSHOP W6

Problems in Compliance with EU Directive

Introductory lecture:

O. Hjelmars and H. A. van der Sloot (DK)

The EU Landfill Directive and the Council Decision on Acceptance Criteria for Waste to be Land-Filled: Overview and Associated Research Needs

C. Bekaert, I. Martin and L. Galtier (FR)

Hazardous Waste Directive: its Implications and its Added Value to Promote a Policy of Sustainable Development

E. Gentil, A. Potter, M. Head and S.A. Jefferis (UK)

Developing an Evaluation Framework for Prioritising UK Waste & Resources R&D

M.J. Korkeozowicz (PL)

Waste Management and Extended Producer Responsibility in Poland on the Eve of EU Accession

C. Ostlund, C. Haglund and S. Lundberg (SE)

Implementation and Consequences of the Ban on Landfilling of Combustible and Organic Waste in Sweden

L. Galtier, T. Villerio, C. Bekaert and I. Martin (FR)

Assessment of the Implementation of the European Landfill Directive on Laboratory Organisation and Waste Acceptance Methods in Landfill Sites

B.D. Bone, K. Knox, A. Picken and H.D. Robinson (UK)

Leachate Quality from UK Landfills after Implementation of the LFD: Hazardous Wastes

Thursday October 9 - Morning

09.00 - 12.50

Baldacchino Room

SPECIALISED SESSION C11

Leak Detection and Repairing Systems for Synthetic Liners

V. Hruby and S. Barrie (SK)

Understanding Electrical Leak Location Surveys: Consequences for the Design of Geomembrane Lining Systems

K. Hayashi and H. Arai (JP)

Electrical Damage Detection System for Landfill Geomembrane Liner

K.G. Haskell, D. Gambelin and T. Daleiden (US)

The Use of Electrical Leak Location Surveys for Improving the Performance of Landfill Liner Systems

N. Ikuta, S. Ueda, O. Imabayashi and Y. Konishi (JP)
Damage Detection System for Landfill Geomembrane Liners and Repair of the Damages
T. Harada, Y. Koike, T. Oshikata and M. Ebihara (JP)
Practical Studies on Repair Method Using Water Swelling Rubber for Damaged Geomembrane Liners

SPECIALISED SESSION C12

Properties and Treatment of Incineration Residues

J. Todorovic, H. Ecke, A. Lagerkvist (SE)
Assessment of Diffusion Properties of Solidified Refuse Derived Fuel (RDF) air Pollution Control (APC) Residues
P. Mostbauer, H. Riegler and P. Lechner (AT)
Artificial Weathering of Inorganic Waste-Evaluation of Laboratory Weathering and Leaching Methods
Polettini, R. Pomi, S. Lo Mastro and E. Piacente (IT)
Accelerated Ageing of Incineration Bottom Ash as a Tool for Landfill Management Optimization
T. H. Christensen, D. Chen, Z. Cai and K. Lundtorp (DK)
Factors Affecting Chromium Leaching from Waste Incineration Residues
K. Hanaki, H. Hattanda, Y. Shimomura and S. Imaiizumi (JP)
Distinctive Features of Artificial Sand , Recycled from Incinerated Municipal Solid Waste Ash

Church Room

SPECIALISED SESSION D11

Watering of Landfills

C. Gachet, R. Bayard, M. Singh and R. Gourdon (FR)
Effect of Water Content And Leachate Recirculation on Anaerobic Biodegradation of Landfilled Waste
M. Krieck and H. Bokers (DE)
Reduction of the Emission Potential of the Landfill Wesuwe LIFE Project
K. Hupe and K.-U. Heyer (DE)
Water Infiltration for Enhanced In-Situ Stabilisation
M.V. Khire and M. Haydar (US)
Numerical Evaluation of Granular Blankets for Leachate Recirculation in MSW Landfills
K. Ishii, T. Furuichi and N. Tanikawa (JP)
Promotion of Waste Stabilization for Design of Community and Controllable Closed System Disposal Facilities by Using a Washout Model
A. Nakano, S. Sakita, A. Motobata and T. Shimaoka (JP)
Mechanisms and Effectiveness of Accelerated Weathering of MSW Incinerator Residues as a Landfill Pretreatment

SPECIALISED SESSION D12

Odour: Production, Quality and Dispersion

K.K.Kleeberg, Y. Liu, M. Schlegelmilch, J. Streesse and R. Stegmann (DE)
Potential of Solid-phase Microextraction (SPME) for the Characterisation of odourous Waste Gas Emissions
M. Karnik, K. Persuad, R. Sneath (UK)
Measuring Odour Emissions From Landfill Sites

A. Bonoli, F. Olivieri, M. Pardo, G. Sberveglieri, F. Ciancabilla and M. Bergonzoni (IT)

Use of an Electronic Nose to Identify Odours Collected in an Urban Waste Landfill

S.W. Bowly (AU)

An Assessment of Current Methods for Quantifying Landfill Odours

K. Haarstad, O. Bergersen, R. Sorheim and B. Berg (NO)

Sorted MSW Landfill Odour Due to H₂S - Sources and Removal

G. Odorizzi and L. Paradisi, S. Silvestri (IT)

Odour Impact Assessment from Waste Treatment Plants by Olfactometric - the Project of the Autonomous province of Trento

Lungomare Room

WORKSHOP W7

Research for Sustainable Landfilling

Introductory lectures:

J. Kok (NL)

How has Dutch Policy Been Derived and What are its Consequences?

V. Francois, G. Feuillade, G. Matejka, M.L. Munoz, C. Aran, I. Hebe, C. Berthe (FR)

Contribution to the Study of the MSW Stabilization: Quantification of Released Pollution and Characterization of Waste

Brands-Van den Esschert, A. Van der Boom, L. Luning and H. Woelders (NL)

F3-Pilot Sustainable Landfill in Landgraaf, the Netherlands

Dune Room

WORKSHOP W8

Significance of Leaching Test

Introductory lectures:

D. Guyonnet, C. Nowak, C. Riolland, M.-C. Dictor, P. Galle and F. Joublain (FR)

Leaching of Soluble Constituents from MSW Following Anaerobic Biodegradation

M. Chrysoschoou, B. Michalzik, S. Harzer, B. Bilutewski, N. Moussiopoulos (GR)

Assessment of the Contamination Potential from Waste Material - a Comparison between Batch/Elution Experiments and Studies in Landfill Simulation Reactors

C.F. Mahler, K. Munnich, K. Fricke and L.M.Q. Lima (BR)
Experiences with Waste Laboratory Reactors in Brazil

Thursday October 9 - Afternoon

15.30 - 19.40

Baldacchino Room

SPECIALISED SESSION C13

Performance of Final Covers

T. Hadj-Hamou, E. Kavazanjian and F. J. Lauro (US)

Monitoring and Evaluation of Evapotranspirative Cover Performance

K. Berger (DE)

Validation and Enhancement of the HELP Model to Simulate the Water Balance of Surface Covers

M.H-Humer and P. Lechner (AT)

Effects of Methane Oxidation on the Water Balance of the Landfill Cover and the Vegetation Layer

G.N. Richardson and A. Zhao (US)

Geocomposite Drains for Landfill Final Closures: The Challenge and Solution

G. Tham, L. Andreas, A. Lagerkvist (SE)

Use of Ashes in Landfill Covers

SPECIALISED SESSION C14

Capillary Barriers

V.I.Giurgea, H. Hotz and W. Breh (DE)

Studies on the Long-Term Performance of an Alternative Surface-Sealing System with Underlying Capillary Barrier

T. Kolb (DE)

Construction of a Capillary System on the Landfill "Am Stempel" at Marburg / Hessen

S. A. Reyes (AR)

Infiltration Control to Enhance Bioreactor Behaviour by Use of a Capillary Cover

T. Holfelder, M. Kampf, B. Wawra and H. Montenegro (DE)

Influence of Temperature on the Performance of Capillary Barriers

L Fornes, C. Ott and J. Jager (DE)

Development of a Landfill Cover with Capillary Barrier for Methane Oxidation- Methane Oxidation in a Compost Layer

Church Room

SPECIALISED SESSION D13

Gas Emission and Migration

J.Munoz Jofre, A. Lobo Garcia de Cortazar, M. Szanto Narea and I. Tejero Monzon (ES)

Daily Variations in the Biogas Emissions on the Meruelo Landfill (Spain)

O. Bour, E. Taffoureau and R. Therrien (FR)

Lateral Landfill Gas Migration : Characterization and Preliminary Modeling Results

K. Spokas, C. Graff, M. Morcet and C. Aran (US)

Determining Whole Landfill Emission Rates From Geostatistical Models

F.J. Maciel and J.F. Thome Juca (BR)

Landfill Gas Emissions from a Brazilian MSW Landfill

A.W. Lewis, S.T.S. Yuen and A.J.R. Smith (AU)

A Case Study using Infrared Thermography to Detect Landfill Gas Leakage

SPECIALISED SESSION D14

Methane Oxidation

W. Stepniewski and M. Zygmunt (PL)

Methane Oxidation in a Landfill Soil Cover as a Chance to Reduce its Emission to the Atmosphere and to Alleviate the Greenhouse Effect

M. Chandrakanthi, P. Hettiaratchi, G. Achari, V. Stein, K. Perera and N. Perera (CA)

Application of Mathematical Models in Predicting Flow and Reactive Behaviour of Methane Gas in Landfill Covers

R. Cossu, R. Raga and M. Zane (IT)

Methane Oxidation and Attenuation of Sulphurated Compounds in Landfill Top Cover Systems : Lab Scale Tests

W. Stachowitz (DE)

Overview of Methane Oxidization at (old) Landfills - Global CO₂ Consideration , Trade with CO₂ - Certificates

J. Einola, K. Sormunen and J. Rintala (FI)

Seasonal Variation of Methane, Nitrous Oxide and Carbon Dioxide Emissions and Methane-Oxidising Activity at a Northern Landfill

Lungomare Room

WORKSHOP W9

Risk Assessment in Waste Management and Landfilling

Introductory lectures:

A. Pivato and R. Cossu (IT)

Risk Assessment for the Evaluation of Afters-Care Landfill Impact

V. Belgiorno, G. De Feo, C. Della Rocca and R.M.A. Napoli (IT)

Risk Assessment of Solid Waste Landfill

S.J.T. Pollard, G.H. Eduljee and D. Hall (UK)

Rethinking Risk Analysis for Waste Management

Dune Room

WORKSHOP W10

Reliable Thermal Treatment Alternatives

Introductory lectures:

R. Rizzo, R. Melloni and A. Tisot (IT)

Comparison between Pyrolysis and Incineration for Wastes Cycles up to 90.000 t/y

M.T. Pilloni and G. M. Varalda (IT)

Modeling of Technical and Economical Performances for MSW Thermo-Utilization Systems

Friday October 10 - Morning

09.00 – 10.40

Baldacchino Room

SPECIALISED SESSION C15

Environmental Behaviour of MBP Waste

Steinberg, A. Bockreis and J. Jager (DE)

Evaluation of the Efficiency of Biological Waste Gas Treatment in Combination with an Alternative System

Bockreis, I. Steinberg, C. Rohde and J. Jager (DE)

Gaseous Emissions of Mechanically-Biologically Pre-Treated Waste from Long-Term Experiments

C. Felske, E. Kraft, V. Ustohalova, R. Widmann and W. Bidlingmaier (DE)

Experimental Analysis of the Large Scale Behaviour of mbp MSW - New Results for the Design of Future Landfills

E. Binner (AT)

Assessment of MBP-Waste - Misinterpretation of Respiration Activity

K. Munnich, K. Fricke, G. Ziehmman (DE)

Hydraulic Behaviour of Mechanical Biological Pre-Treated Waste

SPECIALISED SESSION C16

Remediation of Old Landfills

G. Allgaier and R. Stegmann (DE)

Development of a New risk Assessment Model for Small Old Landfills

N. Withers, I. Kluckow and G. Reyneri (IT)

Probabilistic Cost Estimates For Land Sale Negotiation

W. Powrie, S. Cox, R. Beaven, D. Cole and M. Dyer (UK)

Horizontal Wells for Leachate Control in Landfills

J. Shamrock, D. Brink, N. Mannie (ZA)

The Closure and Rehabilitation of the Umlazi Landfill Site, Durban, South Africa - Community Involvement and Innovation in Closure Design

M. Kriipsalu, T. Meriste and W. Hogland (EE)

Remediation of Oil Ponds in Municipal Landfills: A Case Study at Laguja Landfill in Estonia

R. Ruggeri, D. Sartirana, F. Magri, D. Macerata, S. Salotti, C. Cabri, G. Abbate and P. Alesina (IT)

Remediation and Environmental Re-qualification of the "Ex - Cava Fratelli Pigni " Borrow Area in Fagnano Olona (Province of Varese, Italy)

Church Room

SPECIALISED SESSION D15

In Situ Aeration of Landfills (II)

M. Ritzkowski and R. Stegmann (DE)

Emission Behaviour Of Aerated Landfills: Results of Laboratory Scale Investigations

S. Cestaro, R. Cossu, S. Lanzoni and R. Raga (IT)

Analysis of Pressure Field in a Landfill During In-Situ Aeration for Waste Stabilization

N.D.Berge and D.R.Reinhart (US)

In-Situ Nitrification of Leachate in Bioreactor Landfills

J. Heerenklage and R. Stegmann (DE)

Design and Operation of a Gas extraction System for an Old Landfill Used as an Industrial Area

W.Qi, Y. Matsufuji and Y. Takeshi (CN)

The Function and Effect of The Gas Vent-Pipe on Pollution Control of MSW Landfill Site

J. Jacobs, H.Scharff, F. Van Arkel and C.W. De Gier (NL)

Odour Reduction by Aeration Prior to Excavation

SPECIALISED SESSION D16

Evaluation of Waste Management Actions

I.D. Williams and J. Kelly (UK)

Collecting and Recycling Organic Waste in Blackpool, England

P. Malesani and F. Cossio (IT)

Check and Monitoring Plans for Waste Management Firms according to the Environmental Management Systems

C. Gelfi, L. Franz, P. Giandon and G. Vendrame (IT)
 Method for Calculation of Urban Waste Separate Collection Rate in Veneto Region

S. Morstadt and K.-H. Striegel (DE)
 Waste Disposal Balance and Waste Stream Analysis Established by means of a Data Base Waste Facility Register

W. Hogland, A. Shepeleva and V. Moutavtchi (SE)
 Evaluation Bases of Ecological-Economic Effectiveness of Solid Waste Management Schemes

Lungomare Room

WORKSHOP W11

Afteruse of Landfill Sites

Introductory lectures:

E. Cossu (IT)

Afteruse of Landfill Sites

R.L. Beijnen (NL)

Re-use of Landfill Sites in North-Brabant, Netherlands

W. Straub PE, J. Kissida RL A, R. Spieler PE and R. Reine (US)

Redeveloping Existing City Parks over Former Landfills -The Nashua, New Hampshire (USA) Experience

R.B. Wallace, I.K. Sutton, A. Ortiz and C.J. Castro (US)

Closure Design: Settlement and Stability Considerations for Future Land Use

H.D.Sharma, F.W.Settepani and P.F.Burns (US)

Design and Construction of a Foundation System for an Industrial Building Above a Closed Sanitary Landfill

P. Malesani, F. Cossio, R. Rizzotto and C. Tosi (IT)

Remediation for the Industrial Reuse of an old Abandoned Landfill for Dusts and Powders of Foundry

Dune Room

WORKSHOP W12

Repairing of Synthetic Liners

Introductory lectures:

T. Kawaguchi, K. Kotani, M. Kuroiwa, M. Ishida, Y. Ueda, K. Hatta (JP)

The Leakage Detection System Using Vacuum for Seepage Control Geomembranes

S. Hosokawa, K. Hotta, S. Hayakawa, S. Murata, T. Oshikata and M. Ebihara (JP)

A New Repair System for TPU Landfill Liner Sheet

POSTERS

Posters discussion will take place in the Poster Hall, with authors present, every afternoon from 17:40 to 18:00

A. Waste Management Concepts and Strategies

A. Del Borghi, L. Binaghi, A. Forte, V. Fabbiani and G. Maggi (IT)
Environmental Product Declaration for Waste Collection, Transport and Landfilling - A Case Study

S. Morstadt and K.-H. Striegel (DE)
Waste Treatment Infrastructure in North Rhine -Westphalia, Germany

C. Gelfi, L. Franz and P. Giandon (IT)
Comparison of Methods for Calculation of Urban Waste Separate Collection Rate

E.F. Tuncel and T.T. Onay (TR)
Biodegradable Municipal Solid Waste Management with Respect to the EU Landfill Directive in Istanbul

P.Fletcher and A.D.Read (UK)
Strategic Solid Waste Management Planning for the City of Ekaterinburg, Russia

Y.T.C.A. Rosso, J.A. Ferreira, A. P. Dias, M.L.R. Macedo, S.E.M. Pereira (BR)
Solid Waste Management- A Computational Modeling Application

JM Sabater (ES)
A Practical Approach to EU Directives on MSW Management Model: The Case of Metropolitan Area of Barcelona

P.H. Nicholls (TH)
An Overview of Issues Relating to the Disposal of Urban Waste in Australia 1788-2000

K. Endo, M. Yamada, T. Ishigaki, Y. Ono, S. Hachinobe and Y. Inoue (JP)
Optimum Site Selection for Landfill Site Using GIS

C. Pilati and E. Vantini (IT)
Agenda 21 as a Tool for Landfill Site Selection. Experiences in Verona, Italy

G. Malina (PL)
An Overview of Developments of Bio-Waste Treatment Towards Biogas Generation in Poland

A. Allen (IE)
Sustainable Landfilling for Developing Countries

B. Waste Management Technology

V. Grilc and V. Fabjan (SI)
Stabilisation of a Shredder Waste from End-of-Life Vehicles Milling Prior Disposal

Y. Matsufuji and R. Yanase (JP)
Research on the Recycling of Used Disposable Diaper

A. Forte, G. Maggi, B. Scaglia and F. Adani (IT)
Biostabilisation of Urban Waste In-Situ at the Val Bosca Landfill (SP), Italy

I. Frantzis and R. Eden (GR)
Processing of Waste: Possibilities and Perspectives

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INFORMATION

Official Languages

The working languages of the Symposium is English. A service of simultaneous translation into Italian will be provided for the General Sessions. During specialized sessions, thematic sessions and workshops only English will be used. Simultaneous translation into Spanish, in Session A, is provided by the special sponsorship of the *Institute for Resources Sustainability*. Update information on this issue will be available on symposium website.

Proceedings

The Symposium proceedings will be published on CD. The CD and an abstracts volume will be distributed to participants at time of registration.

Entrance Fee

Conference

The registration fees are as follows:

A Normal fee: Euro 1100,00 + 20%VAT

B Students (with University certificate):Euro 600,00+ 20%VAT

In accordance with Italian law **all participants**, irrespective of country of origin, are required to pay 20% VAT on entrance fee.

Fees A and B include:

- Participation in Symposium works
- CD-ROM and conference materials
- Gala Dinner (supplement to evening meal)
- Coffee breaks

Training Courses

The registration fee is Euro 50,00 + 20%VAT per course; in case of registration to all the four courses, one course is free. The minimum number of participants for a given course is 15: in case insufficient registrations have been received, the course will be cancelled, with each registrant's course fee being transferred to another course selected by the registrant or refunded.

The enclosed form should be used for application and will be considered effective only after receipt of respective fee.

EuroWaste Srl will reimburse registration fees already paid if written request of cancellation is submitted. Reimbursement will be as follows: 80% before 30th July 2003; 50% before 30th August 2003. No refund will be possible after this date.

All payments due should be made out in Euro and sent either by :

- bank draft to:

EuroWaste Srl,

IBAN: IT65B200862061641969

Cod. BIC/Cod. Swift: UNCRIT2B (Eurowaste srl).

Please make sure your remittance clearly includes your full name and address;

- a crossed cheque made out to EuroWaste Srl;

- Eurocheque made payable to EuroWaste Srl. Please make sure that your full name and address are included on the back of the cheque.

We regret that payment by credit card cannot be accepted.

Registration

Conference

Registration will take place at Forte Hotel Village at the Congress Hall on Sunday October 5, 2003 from 16.00 - 18.00. Monday October 6, 2003, from 08.00 - 13.00 and from 14.30 - 15.30. Late registration can be carried out on Tuesday, October 7, 2003 from 09.00 -10.00.

Training Courses

Registration will take place at Forte Hotel Village at the Congress Hall on Sunday October 5, 2003 from 08.00 - 11.00.

Official Travel Agent

All delegates and authors are expected to make their own travel and hotel arrangements. The Official Travel Agent is available for assistance:

Ms. Cossu Maddalena and Ms. Valeria Arba

World Travel Jet

Via Alghero, 48, 09127 - Cagliari (IT)

tel. +39.070.60051309 / 60051310 – fax +39.070.664223

e-mail: landfill2003@worldtraveljet.it

Transport

Cagliari is linked to the main Italian cities by various daily flights. The airport of Elmas (Cagliari) is located about 40 km from the Forte Village Resort and 7 km from the centre of Cagliari. Participants are advised to fly to Cagliari airport, even though Cagliari can be reached by boat (Civitavecchia (Rome), Genova, Palermo, Napoli).

On 5th October (afternoon), on 6th, 10th (afternoon), and 11th October to coincide with opening and closure of the Symposium special transport service from the airport to the Congress Centre will be available (Euro 54,00 return; Euro 27 one way). On 12th October a bus will be available, one in the morning and one in the afternoon: time to be defined. All transfers should be booked and paid for in advance using the enclosed hotel booking form. A public taxi service is always available at the airport (indicatively Euro 85,00 one way).

Accommodation

A block booking, at an especially favourable rate, has been made at Forte Village Resort to accommodate all participants. Prices on a halfboard basis are as follows:

<i>Villaggio/Le Palme</i>	<i>Euro</i>
Standard bungalow	103,00
Single supplement	27,00
 <i>Hotel Pineta/Il Borgo</i>	
Standard room	109,00
Single supplement	27,00
 <i>Hotel Castello</i>	
Standard room	121,00
Single supplement	27,00
Castello Deluxe	245,00
Castello Suites	245,00
Single supplement	55,00
 <i>Hotel Le Dune</i>	
Luxury room	212,00
Single supplement	27,00
 <i>Hotel Villa del Parco</i>	
Luxury room	222,00
Single supplement	27,00

All prices quoted are per person per day. On a halfboard basis, meals included are breakfast and evening dinner. On the evening of the Gala Dinner the Organizers will be pleased to cover the necessary supplement respect to the price paid for evening dinner. Accompanying persons wishing to attend the dinner should book at the Conference Secretariat, in this case the supplement will be payable directly to Forte Village Resort. We regret that it will not be possible to modify type of accommodation once booking has been confirmed. Single rooms are double rooms with a single occupant.

A hotel deposit is requested per person and should be paid to the travel agency at time of booking. Bookings received after the deadline of 31st August 2003 cannot be guaranteed. No refund will be possible for advance departure respect to number of nights paid.

Reductions

Reduction for children (only if sharing with 2 adults and maximum two children):

- Children 0-12 years, free;
- Third bed, 50%

The enclosed hotel booking form should be used for all reservations. Hotel booking will be confirmed only after receipt of a deposit (indicated on the form) which should be sent, together with the form, to World Travel Jet, Cagliari.

The Hotel Complex

The Forte Hotel Resort is situated on a long sandy bay on the southeastern coast of Sardinia.

The Hotel complex, about 40 Km from Cagliari, the capital of the island, and 8 km from S. Margherita di Pula, is set in a natural park of 25 ha, of which at least half is given over to gardens and pine woods.

The Forte Hotel Resort comprises approx 600 cottages half hidden amongst the pine woods and gardens. Each cottage consists of a twin bedroom, private bathroom with shower, direct dial telephone, heating and private patio.

The Hotel Castello, Hotel Pineta and Hotel Villa del Parco are set in a secluded part of the Village grounds, surrounded by tall pine trees. Hotel Le Dune includes 34 extra luxury cottages near the sea. All rooms have air conditioning, private bathroom with shower, TV and direct dial telephone. On the WEB page of the Symposium (<http://www.sardiniasymposium.it>) you may find more information on Hotel accommodation.

Sports

Hotel costs include the use of sports equipment (squash, tennis, with artificial lights except for bicycle hire, water sports, riding and services offered by the Terme del Parco (hydromassage, sauna, turkish bath, fitness centre). Special price for the Terme del Parco is Euro 45,00 : for half day and Euro 80,00 for full day.

Hotel Cancellation

Please inform World Travel Jet, Cagliari, of any change or cancellation of hotel reservation.

Deposit can be refunded only if written notification of cancellation is received before 31st August 2003.

Social Events

Social events play an important role in the success of Sardinia Symposia. In view of the fact that the Scientific Programme is particularly intense and the Symposium lasts five days, it is fundamental to relax during session breaks and in the evening.

The informal atmosphere created during social events aids “one to one” contact with other attendees.

Social Programme will be as follows:

Sunday 5th October, h.19,15

Get together cocktail

Tuesday 7th October, h.21,00

Sardinian Folk Dinner with entertainment (payment required)

Wednesday 8th October, h.22,00

International Soccer Match

Thursday 9th October, h.22,00

Musical at the Main Square

Friday 10th October, h. 21,00

Gala dinner and Closure (supplement to normal evening meal in Hotel Forte Village is included in the registration fee). An orchestra will accompany the evening. Dark suite would be appreciated.

During Gala dinner Awards will be given for the best papers in different areas. As the past edition a special Sardinia Prize will be awarded in order to congratulate outstanding personality in the field of Waste Management. The Award will be decided by a Jury of International Experts.

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