



IKT-PROJECT-OVERVIEW (FEBRUARY 2004)

Project and Research Reports

"Infection Hazard Resulting from Discharge of Pathogens from Sewer Entry Shafts Entrained in Aerosols"; requested by Ministry for Environmental Affairs NRW (MUNLV); in cooperation with the *Hygiene-Institut des Ruhrgebiets*; 12/2000; download (in German) under www.ikt.de.

"Ecological Effects of Roots Growing into Sewer Channels and Lines and Economic Measures for Avoiding Damage and Repair"; requested by *Gelsenkanal*; 03/2001, download (in German) under www.ikt.de.

"Study of Quality of Completed Sewer Repairs using the Hose Relining Method as an Example"; requested by Ministry for Environmental Affairs NRW under participation of the Municipal Network Provider for Bochum, Dortmund, Duisburg, Gladbeck, Mönchengladbach and Münster; 03/2001, download (in German) under www.ikt.de.

"Determination and Elimination of External Water Sources in Sewer Networks"; requested by *Abwasserberatung NRW*; 06/2001, download (in German) under www.ikt.de.

"Federal Survey on Repair of Shaft Structures in the Field of Sewer Engineering using the Coating Method"; requested by Ministry for Environmental Affairs NRW (MUNLV); 07/2001, download (in German) under www.ikt.de.

"Flow Measuring Devices for Rainwater Discharge Structures"; requested by Ministry for Environmental Affairs NRW (MUNLV); 07/2001, download (in German) under www.ikt.de.

"Recording and Evaluation of Experience with Implementation of the Self-Control Code for Sewers – SüwVkan"; requested by Ministry for Environmental Affairs NRW under participation of the Regional Office of Environmental Affairs in Duisburg; 09/2001, download (in German) under www.ikt.de.

"Development and Testing of New Types of Shaft Connections for Reinforced Concrete Sewer Shafts"; requested by *Stadtentwässerung Witten*; 03/2002, download (in German) under www.ikt.de.

"Underground Jacking of Reinforced Concrete Pipes with Rectangular Cross-Section – Part II"; requested by Ministry for Environmental Affairs NRW (MUNLV) as well as *Stadtentwässerung Köln, Emschergenossenschaft, Gelsenkanal* and the *Ruhrverband*; 04/2002; download (in German) under www.ikt.de.

Comparative Product Test *"Fittings and Saddles for House Connections"*; requested by the Municipal Network Providers for Bergisch Gladbach, Bochum, Braunschweig, Duisburg, Düsseldorf, Essen, Gelsenkirchen, Krefeld, Leverkusen, Mönchengladbach, Mülheim/Ruhr, Neuss, Oberhausen, Recklinghausen; 06/2002, download (in German) under www.ikt.de.

"Inspection and Cleaning of Culverts"; Survey covering the State of NRW requested by Ministry for Environmental Affairs NRW (MUNLV); 07/2002, download (in German) under www.ikt.de.

"Development of an Elastomer Ring for Repair of Shaft Covers"; requested by *Technischen Betriebe Schwelm*; 07/2002, download (in German) under www.ikt.de.

"Use of Micro-Biological Preparations in Grease Separators"; requested by Ministry for Environmental Affairs NRW (MUNLV); 10/2002.

"Suitability Testing of Procedures for Repair of Shaft Covers"; requested by *Stadtentwässerungsbetriebe Düsseldorf*; 11/2002.

"Effects of Highly Volatile, Halogenated Hydrocarbons (FHHC's) on Elastomer Seals in Pipe Connections"; requested by Ministry for Environmental Affairs NRW (MUNLV). 8/2002

"Handling Asbestos-Cement Pipes – Operating Recommendations for Sewer Systems"; under participation of the Governmental Offices for Labour Safety in Essen and Köln requested by Ministry for Labour and Social Affairs, Qualification and Technology, NRW (MASQT). 12/2002

"Leakage Test on House Connection and Underground Lines"; under participation of the *GGW-Gelsenkirchener Gemeinnützige Wohnungsbaugesellschaft mbH* and Municipal Network Providers for Gelsenkirchen and Recklinghausen requested by Ministry for Environmental Affairs NRW (MUNLV). 4/2003

"Recording and Evaluation of Condition of House Connection Lines and Underground Line Networks as Basis for Repair Planning" under participation of the *GGW-Gelsenkirchener Gemeinnützige Wohnungsbaugesellschaft mbH* and the Municipal Network Providers for Gelsenkirchen and Recklinghausen requested by Ministry for Environmental Affairs NRW (MUNLV). 4/2003

"Quantitative Inspection of Sewer Channels and Lines using Geophysical Methods"; under participation of HOCHTIEF AG, DMT - Deutsche Montan Technologie GmbH requested by *Stadtentwässerung Köln*. 9/2003

"Structure and Development of the Water and Sewer Management in Nordrhein-Westfalen"; in cooperation with the Ruhr University, requested by Ministry for Environmental Affairs NRW (MUNLV), Conclusion 9/2003.

"Development of a Calculation Procedure for Sewer Channels and Lines Laid Using the Bursting Method"; under participation of Tracto Technik GmbH and egeplast Werner Strumann GmbH & Co. KG requested by Ministry for Environmental Affairs NRW (MUNLV); 11/2003.

"Quality Effects of Hose Lines – Random Sample Studies on Repaired Sewer Channels –" Final report on research project *"Determination of Statistical and Operating Service Life of Sewers Repaired Using the Hose Relining Method"*; in cooperation with the Technical University of Münster and Gelsenkirchen under participation of Municipal Network Providers for Bochum, Dortmund, Duisburg, Gladbeck, Mönchengladbach and Münster requested by Ministry for Environmental Affairs NRW (MUNLV). 12/2003

"Implementation of the Self-Control Regulations for Sewers at the Municipal Network Providers in NRW"; under participation of 396 communities, 11 water cooperatives, 12 governmental environmental agencies and the state environmental agency requested by Ministry for Environmental Affairs NRW (MUNLV).

"Coordination of External Water Reconstruction in the Public and Private Sector"; in cooperation with *Abwasserberatung NRW* and *FIW-Forschungsinstitut für Wasser- and Abfallwirtschaft an der RWTH Aachen* requested by City of Rheine. 12/2003

"Reinforced Concrete Pipes in Open Construction – Pipe Testing under Stress Conditions Close to Reality --" Final report on research project *"Quality and Cost Control in Construction of Man-Sized, Reinforced Concrete Sewer Channels"*; in cooperation with the Department of Reinforced Concrete and Prestress Concrete at the Ruhr University in Bochum under participation of the *Emschergenossenschaft* requested by Ministry for Environmental Affairs NRW (MUNLV). 01/2004

"Repair of Building Connection Lines – Pilot Project Würselen -"; requested by City of Würselen, 1/2004, download (in German) under www.ikt.de.

CURRENT RESEARCH PROJECTS

Leakage Tests on Concrete Shafts – Preliminary Study for Developing Testing Methods and Criteria; under participation of concrete plants and NRW Network Providers requested by Ministry for Environmental Affairs NRW (MUNLV), Conclusion in 2004.

"Repair to Shaft Structures in the Sewage Sector Using Coating Procedures"; under participation of the Municipal Network Providers for Bochum, Oberhausen, Mülheim, Warendorf and Göttingen requested by Ministry for Environmental Affairs NRW (MUNLV).

"Execution Risks when Using Bedding and Filling Materials in Pipeline Construction: Development of a Method and Equipment for Quality Assurance for Bedding Channels in Open Construction"; in cooperation with the Department for Foundation Engineering and Soil Mechanics at the Ruhr University of Bochum under participation of the Municipal Network Providers for Düsseldorf, Dortmund, Essen, Mönchengladbach as well as the *Emschergenossenschaft* requested by Ministry for Environmental Affairs NRW (MUNLV), Conclusion End of 2004

"Root Growth in Sewer Lines and Channels – Causes, Testing and Prevention"; in cooperation with the Department for Special Botany at the Ruhr-University of Bochum under participation of various NRW Municipal Network Providers requested by Ministry for Environmental Affairs NRW (MUNLV), Conclusion 7/2004.

"Sewer Cleaning with High Pressure Flushing "; in cooperation with the *Gesamthochschule* Essen as well as Technical Universities of Oldenburg, Gelsenkirchen and Bochum under participation of the Municipal Network Providers for Gelsenkirchen, Recklinghausen, Bochum and Munich requested by Ministry for Environmental Affairs NRW (MUNLV), Conclusion 4/2004.

"Sewer Cleaning Using the "Flushing Sack" Flushing Device"; under participation of the HST-Systemtechnik GmbH requested by Bergisch-Rheinischen Wasserverbandes, Conclusion 4/2004.

"Initial Testing of Flow Measuring Points in Sewage Treatment Plants on the Basis of the Amended Code SÜwV NRW"; in cooperation with the Technical University of Gelsenkirchen requested by *Emschergenossenschaft* and Lippeverband, Conclusion 2/2004.

"Determination and Elimination of External Water from Yard and Building Connections in the Catchment Area of a Potable Water Reservoir (Wiehltalsperre)"; in cooperation with Pecher AG, requested by Abwasserberatung NRW, Conclusion 2/2004

Testing System for Water Penetrable Surface Coverings – Comparative Tests within the Scope of Trial Operation, requested by Ministry for Environmental Affairs NRW (MUNLV), Conclusion 3/2004.

"Failure Mechanisms for Large Profiled Plastic Pipes – Recognition, Testing, Evaluation-", with partners from the communities and industry, requested by Ministry for Environmental Affairs NRW (MUNLV), Conclusion 12/2004

"Suitability of Ejector Nozzles for to Ensure Drainage on Culverts", under participation of NRW-Network Providers and the Quest Co., requested by Ministry for Environmental Affairs NRW (MUNLV), Conclusion 3/2004.

"Consulting Services within the Scope of the Research Project "External Water – Recognition, Evaluation and Prevention", requested by University of Stuttgart, Conclusion 5/2004

"Progress Report on Use of the New Method for Recording the Condition of Building Connection and Underground Lines at Network Providers in NRW", requested by Bezirksregierung Münster, Conclusion Middle of 2004.

"Drainage and Seepage Characteristics of Water Permeable Surface Coverings"; requested by University of Kaiserslautern, Conclusion End of 2004.

"Checking and Calibration of Throttle Devices on Rain Basins according to Requirements of Self-Control Code for Sewers (SüwVKan NRW)"; under participation of Emschergenossenschaft/Lippeverband and Communities; requested by Ministry for Environmental Affairs NRW (MUNLV).

"Possibilities for Using Qualitative Analysis within the Scope of Flow Measurements at Sewage Treatment Plants and in Sewer Networks" requested by Ministry for Environmental Affairs NRW (MUNLV); Conclusion 3/2004.

"Development of a Procedure for Calculation and Construction of Self-Supporting, Corrosion-Resistant 'Sandwich Coatings' for Sewer Shafts", under participation of the Fa. Loos PUR-Technik e.K., requested by Ministry for Environmental Affairs NRW (MUNLV). Conclusion 7/2004

Projects in Preparation

"Quality Assurance for Reinforced Concrete Jacking Pipes"

"Collection and Evaluation of Experience in Implementation of the Self-Control Code for Sewers at Private Network Providers in NRW"

"Testing of Dike Systems and Their Repair"

"Heat Reclamation from Sewer Channels"

"Possibilities and Procedures for Cleaning Sewer Pressure Pipes"

"Stress to Sewer Pipes and Lines Close to the Surface from High Traffic Loads"

"External Water and Infiltration Risks from Private Sewer Networks – Test Procedures and Criteria–"

"Condition, Process and Efficiency Analysis for Development of a Requirement-Oriented Cleaning Strategy for Sewer Networks"

"Condition Recognition and Repair Methods for Structural Damage in Small Sewage Treatment Plants"

"Development and Testing of a Compacting Unit Inserted into Pipe Lines for Optimised, Efficient and Damage-Free Laying of Sewer Lines and Channels of Synthetic Materials"

"Testing of Water Permeable Surface Coverings after Several Years of Use"