



**Aachen, Industrial Park Kohlscheid, Germany**

Hole deviation measurements with inclinometer in directional drillings to search for old mining shafts (2001-04);

*Client: J. Schützeichel KG*

**Aalen, Section for Heavy Road Vehicles, Germany**

Installation of interstitial pressure transducers and horizontal inclinometers in measuring sections of Charlotten- and Bahnhofstreet (section for heavy vehicles) (2003);

*Client: Terrasond GmbH & Co. KG*

**ABS/NBS – New Railway Line Stuttgart – Augsburg, NBS - New Railway Line Wendlingen – Ulm, Germany**

Installation of Trivec measuring tubes (2003);

*Client: Arge Aufschluss Alaufstieg (Geomechanik, H. Anger's Söhne, Etschel + Meyer)*

**ABS/NBS – New Railway Line Stuttgart – Augsburg, NBS New Railway Line Wendlingen – Ulm, PFA 2.1, Germany**

Installation of combined inclinometer/sliding deformer measuring tubes and pore water pressure transducers (2003 and 2009);

*Client: Arge PFA 2.1 Albvorland (Terrasond, Waschek, Menning)*

**ABS/NBS - New Railway Line Stuttgart - Augsburg, Variant Hasenthal, Germany**

Execution and evaluation of dilatometer tests, installation of inclinometers and Trivec measuring tubes, primary stress measurements according to the method „hard inclusion“, for pre-investigation of the new railway line Stuttgart - Augsburg of the Deutsche Bahn (1995-96);

*Client: Sax + Klee GmbH*

**ABS/NBS – New Railway Line Stuttgart – Augsburg, NBS New Railway Line Wendlingen – Ulm, Germany**

Measuring of Trivec and combined inclinometer/sliding deformer tubes in PFA 2.1 and PFA 2.2 (2009-);

*Client: Arge WUG*

**Aegidienberg Tunnel, Germany**

Installation of multiple extensometers and pressure cell measuring sections in the course of tunnelling works for the new railway line Koeln - Rhein/Main of the Deutsche Bahn (1999);

*Client: Arge Mittelstand NBS Koeln-Rhein/Main, Los A Tunnelbau*

**Albruck-Dogern, Rhine Power Station, Germany**

Borehole jack tests with Ettlenger dilatometer, primary stress measurements with HI-cell CSIRO, monitoring of boreholes with the optic scanner ETIBS<sup>®</sup>, insertion of boreholes with multiple interstitial pressure transducers and electronic data loggers (2004);

*Client: Terrasond GmbH & Co. KG*

**Ansenbach, Auxiliary Bridge, Germany**

Installation and measurement of 4fold settlement gauges and horizontal inclinometers in the embankments of the auxiliary bridge Ansenbach, new railway line Karlsruhe – Basel (1995-97);

*Client: Wibel, Leinenkugel + Partner*

**Asse, Salt Mine, Remlingen, Germany**

Installation of borehole pressure cells type Glötl and type AWID in a 630 m deep borehole, from the 750 m floor (1985);

*Client: gsf – Gesellschaft für Strahlen- und Umweltforschung mbH, München*

**Asse, Salt Mine, Remlingen, Germany**

Sealing of storage rooms in saltrock - test seal; research and development programme, long-term safety analysis in connection with a multi barrier safety concept in underground radioactive waste repositories. Instrumentation and execution of measurements for evaluation of strains, stresses and temperatures etc. in the test seal and the surrounding rock. Preliminary instrumentation in a gallery above (1987-90);

*Client: gsf - Gesellschaft für Strahlen- und Umweltforschung mbH, Institut für Tief Lagerung, Abt. für Endlagertechnologie, München*

**Automation of test machines, Germany**

Development and design of control system and respective software for a tri-axial cell (1997);

*Client: Geo-scientific department of the University of Halle-Wittenberg, Germany*

**BAB A 9, Exit Triptis – Exit Dittersdorf, Germany**

Execution of inclinometer measurements (2006);

*Client: Terrasond GmbH & Co. KG*

**BAB A 38, Friedetal Bridge, Germany**

Monitoring of boreholes with the acoustic borehole scanner ABF, caliber measurement, logging of borehole running. Insertion of boreholes to Trivec measuring points and Trivec measurements (2008-);

*Client: BOG GmbH*

**Bad Abbach, Germany**

Installation and measurement of inclinometers (1990);

*Client: Stump Bohr GmbH, Ismaning*

**Bad Abbach, Germany**

Delivery and installation of inclinometer tubes (1995);

*Client: E + M Bohr-GmbH*

**Bad Honnef, Germany**

Inclinometer measurements at the Adenauer House (2009-);

*Client: ELE Beratende Ingenieure GmbH*

**Bad Laasphe, Germany**

Inclinometer measurements at the slope Kisselsdell (1998-2009);

*Client: Fluhme & Sohn GmbH, Stadt Bad Laasphe*

**Bad Wildbad, Multi-Storey Car Park, Germany**

Installation of extensometers and anchor load cells in the excavation wall (1982);

*Client: Stadtverwaltung Bad Wildbad*

**Bad Wildbad, Urban By-pass Tunnel, Germany**

Installation and measurement of automatic groundwater level measuring stations (1995-96)

*Client: Stadtverwaltung Bad Wildbad*

**Bartelsgraben/Leinachtal, Valley Bridge, Germany**

Installation of control instruments (inclinometer, piezometer) in bridge regions along the new railway line H/W South of the Deutsche Bundesbahn (1982);

*Client: PrGr H/W Süd der Bahnbauzentrale, Bundesbahndirektion Nürnberg*

**Basha Diامر Dam Project, Pakistan**

Delivery of a complete optic borehole scanner system ETIBS® for monitoring of exploration drillings of the Basha Diامر Dam Project near Chilas, Pakistan (2006);

*Client: WAPDA (Pakistan Water and Power Development Authority)*

**Bengelbruch, Waste Dump, Germany**

Execution of hydrostatic levellings for measurement of drainage pipes (1993);

*Client: Landratsamt Freudenstadt*

**Bergrheinfeld, Germany**

Installation of inclinometer tubings and torsion measurement (2000);

*Client: brunnen & bohren G. Marquardt*

**Berlin, Sony Center, Germany**

Instrumentation of the combined pile - plate basement with integral elements and electric base pressure transmitters (1997);

*Client: Glötzl GmbH*

**Berlin, Underground Railway, Lot 76 A, Lindauer Street, Germany**

Installation of inclinometers for control of excavation (1983);

*Client: Brechtel GmbH, Niederlassung München*

**Beselich, District Dump, Germany**

Installation and automatic measurement of electric interstitial pressure transducers in the proving grounds of the section B3/BA2, measurement of inclinometers (1999-2003);

*Client: J. Schützeichel KG, KAD Beselich*

**Biblis, Nuclear Power Station, Germany**

Installation of water level and temperature sensors with electronic data loggers in boreholes for groundwater monitoring below the interim stock for radioactive waste (2004);

*Client: RWE Power AG*

**Bibra Tunnel, Germany**

Execution and evaluation of borehole jack tests with Ettlenger dilatometer, installation of electric and pneumatic interstitial pressure transducers with electronic data logger, pre-investigation for the new railway line Erfurt - Halle/Leipzig of the Deutsche Bahn (1996);

*Client: Terrasond GmbH + Co. KG*

**Bildstock Tunnel, Germany**

Stress measurements according to the compensation method, assessment of stability and evaluation of reconstruction necessity of the tunnel, distometer measurements for long-term control (1991-2000);

*Client: Saarbergwerke AG, Saarbrücken*

**Billigheim, Toxic Waste Dump, Germany**

Execution of settlement and temperature measurements in drainage pipes on dump base sealing system and dump surface; display and evaluation of measured data (1989-2003);

*Client: SBW Sonderabfallentsorgung Baden-Württemberg GmbH, Fellbach, HIM*

**Bittelschiess, Germany**

Installation and measurement of inclinometers in the course of slope stability control of the catholic church of Bittelschiess (1994-99);

*Client: Kath. Pfarrgemeinde Bittelschiess*

**Bochum, Emilstreet, Germany**

Logging of borehole running off with inclinometer in collar tubes in the course of redeveloping a surface damage (2001);

*Client: GFL*

**Bonn Kuedinghoven, Germany**

Insertion of boreholes to groundwater measuring stations with electric water level sensors and electric data loggers (2000);

*Client: Kühn Geoconsulting*

**Borehole TV Camera**

Development and construction of a 38 mm borehole TV camera with triaxial magnetometer, inclinometers, white and UV light illumination, optic cut adapter (1999);

*Client: IfG - Institut für Gebirgsmechanik*

**Bossler Tunnel, Steinbuehl Tunnel, Germany**

Installation of inclinometer tubes up to a depth of 140 m in exploratory drillings for the new railway line Stuttgart - Ulm of the Deutsche Bahn (1994-95);

*Client: Menning GmbH, Geomechanik GmbH*

**Boettingen, Germany**

Installation and measurement of sliding deformer tubes for settlement measurement in the quarry Hauri (2008);

*Client: Terrasond GmbH & Co. KG*

**Bremen, Industrial Park Hansaline, Germany**

Installation of a sliding micrometer measuring tube (1999);  
*Client: Glötzl GmbH*

**Burgberg Tunnel, Investigation Gallery and Test Tunnel, Germany**

Delivery and installation of measuring instruments as well as execution, evaluation and interpretation of geotechnical measurements, new railway line M/S of the Deutsche Bundesbahn (1985-86);  
*Client: PrGr M/S der Bahnbauzentrale, Bundesbahndirektion Karlsruhe*

**Busch Tunnel, Germany**

Installation and measurement of convergence measuring sections with dilatometer and of displacement measuring sections with deformeters in the course of the repair of the old Busch tunnel and for monitoring during the excavation of the new Busch tunnel, section 2600 Koeln – Aachen (2002 and 2005);  
*Client: Anton Feldhaus und Söhne, HOCHTIEF Construction AG*

**Busch Tunnel, Germany**

Installation of multiple extensometers, combined sliding micrometer - / inclinometer measuring tubes and measuring sections with pressure cells for pressure and strain measurement during the excavation of the new Busch tunnel (2005);  
*Client: HOCHTIEF Construction AG*

**Calw, Bus Station, Germany**

Instrumentation of the excavation wall with distant indicating multiple extensometer for stability control (1987);  
*Client: Stump-Bohr GmbH, Ismaning*

**Camphausen, Earth Dam, Germany**

Installation of inclinometers and control of stability of the lock building in a heap of waste (1983);  
*Client: Clemens Nachf., Brebach/Saar*

**Charlottenfels Tunnel, Germany**

Installation of inclinometers, extensometers and dilatometers measuring sections to control the Charlottenfels tunnel during the undercrossing of the Galgenbuck tunnel (2009);  
*Client: gbm GmbH*

**Cirata, Power Station, Indonesia**

Delivery of geotechnical measuring instruments for control of high rock slopes (1985);  
*Client: PP-TC-MC Joint Operation, Jakarta, Indonesia*

**Clausthal, Technical University, Germany**

Design and construction of a 3000 kN test press (1997-98);  
*Client: TU Clausthal, Institute for engineering geology*

**Darmstadt, Merck, Germany**

Installation of pile head cells at piles of the combined pile - plate basement for the boiler house, building E55 (2001);  
*Client: Glötzl GmbH*

**Deggendorf, Germany**

Measurement of inclinometers for excavation control of the underground car park in the passage of Deggendorf (1995-96);

*Client: Geoalpha GmbH*

**Denkendorf Tunnel, Germany**

Installation and measurement of multiple interstitial pressure transducers with electronic data loggers in the course of the compressed investigation program to prepare the plan to construct the Denkendorf tunnel, new railway line Nuernberg - Ingolstadt of the Deutsche Bahn (2000-05);

*Client: ARGE NBS Nuernberg - Ingolstadt Los Sued*

**Dettingen Tunnel, Germany**

Execution of borehole jack tests with Ettliger dilatometer and borehole jack, installation of electrical interstitial pressure transducers with electronic data logger. Investigation programme of the Deutsche Bahn new railway line Stuttgart - Augsburg PFA2.16, 1. EKP (1997-98);

*Client: Arge Tunnel Dettingen (geo-Bohrtechnik, Kling)*

**Dietershan Tunnel, Germany**

Geotechnical instrumentation and execution of measurements, new railway line H/W Middle of the Deutsche Bundesbahn in joint venture with Glötzl Baumesstechnik Company (1983);

*Client: Arge Dietershantunnel*

**Dittenbrunn Bridge, Valley Bridges of Zeitlofs and Schaippach, Germany**

Installation of control instruments (extensometer, inclinometer, piezometer, anchor load cell) and execution of measurements, new railway line H/W South of the Deutsche Bundesbahn (1983);

*Client: Arge Anger's Söhne, Preussag AG*

**Doren, Austria**

Insertion of boreholes to inclinometer- and interstitial pressure measuring points (2007);

*Client: Reisinger Ges. m.b.H.*

**Dortmund, Phoenix West, Germany**

Installation and measurement of combined sliding deformer / inclinometer measuring tubes (2006-07);

*Client: Fluhme & Sohn GmbH*

**Duisburg - Rheinhausen, Rhine Bridge, Germany**

Installation of combined sliding micrometer - inclinometer measuring tubes in boreholes of the pier 8 (1999);

*Client: Glötzl GmbH*

**Ebertsberg Tunnel, Germany**

Working up and installation of a continuous control system with flat jack, extensometer, distometer measured sections. Stress release measurements. Optic exploration of boreholes. Long-term control of all electric sensors with an automatic measuring system. Collecting of data by a modem (1993-);

*Client: Deutsche Bahn AG Frankfurt/M.*

**Eichberg Tunnel, Germany**

Installation of measuring cross sections along the new railway line H/W Middle of the Deutsche Bundesbahn in joint venture with Glötzl Baumesstechnik Company (1983);

*Client: Boswau & Knauer AG, Ndl. Frankfurt/M*

**Eiterkoepfe, Dump, Germany**

Measuring of a groundwater level with the help of an inclinometer probe (1998);

*Client: Brechtelterra*

**Eltville, Germany**

Inclinometer measurements for slope monitoring in the building area Moenchhanach II (1998);

*Client: J. Schützeichel KG*

**Emscher Sewer, Germany**

Loggings of borehole running off with inclinometer probe in exploratory drillings for the Emscher sewer lot 1 (2005-09);

*Client: Arge AK Emscher Los 1 (J. Schützeichel KG, Terrasond GmbH & Co.)*

**Felstor Tunnel, Germany**

Rock monitoring with extensometers and alarm device at the Felstor tunnel, railway line section 5850 (2004-10);

*Client: DB Netz AG München*

**Finne Tunnel, Germany**

Installation of electric interstitial pressure transducers with electronic data loggers in the course of pre-investigation of the new railway line Erfurt - Halle/Leipzig, section 2 (1992-93);

*Client: Sax + Klee GmbH, Terrasond GmbH + Co. KG*

**Finnentrop, Germany**

Accompanying inclinometer measurements to stabilise a sliding slope in Lehnhausen (1998);

*Client: J. Schützeichel KG*

**Flaschenhals Tunnel, Koblenz, Germany**

Execution and evaluation of borehole jack tests with dilatometer. Installation of Trivec measuring tubes in the course of soil investigations along the B 42 Bendorf - Lahnstein (1993-1994);

*Client: Günther Eder GmbH, Hebertsfelden*

**Flotzgruen, Waste Dump, Germany**

Installation of measuring cross sections for soil pressure, interstitial pressure measurements (1992);

*Client: BASF AG, Ludwigshafen, Ing.-Büro Josy, Speyer*

**Floetzgruen, Waste Dump, Germany**

Fitting of the joints in shaft Q 1.3 with electric displacement transducers, connection to measuring automatic, automatic measurement of load cells using signal transmitters during the controlled lowering of the shaft elements (2007-08);

*Client: BASF AG, Ludwigshafen*



**Frankfurt/Main, Credit Bank for Rebuilding, Germany**

Installation of wire resistance strain gauges for measurement of bulkhead forces in a deep excavation (1984);

*Client: Baugrundinstitut Prof. Sommer, Darmstadt*

**Frankfurt/Main, Deep Foundation of the Gleisdreieck-Skyscraper, Germany**

Measurement of pile butt and pile foot forces, pile extension, extensometer and incline measurements, delivery and installation of measuring instruments (1983);

*Client: Ing.-Büro Prof. Sommer, Darmstadt*

**Frankfurt/Main, Main Tower, Germany**

Instrumentation of the combined pile - plate basement with pile butt cells, electric base pressure transmitters and electric interstitial pressure transducers (1997);

*Client: Glötzl GmbH*

**Frankfurt/Main, Refrigerating Line, Airport, Germany**

Installation of Trivec measuring tubes and measurements during the drilling advance (2001);

*Client: Terrasond GmbH & Co. KG, Ed. Züblin AG*

**Frankfurt/Main, Skyscraper Frankfurter Welle, Germany**

Instrumentation of the combined pile - plate basement with pile butt cells, el. base pressure transmitters and el. interstitial pressure transducers (1998);

*Client: Glötzl GmbH*

**Frankfurt/Main, Suburban Train, Lots 13/14, Germany**

Installation of inclinometers and inclinometer measurements in two measuring cross sections (1981); delivery and installation of convergence measuring pins, radial and tangential pressure pickups in measuring cross sections (1982);

*Client: Arge Dressler KG, Prader AG, Dyckerhoff & Widmann AG*

**Frankfurt/Main, Suburban Train, Lot 14 a, Germany**

Installation of measuring cross sections, radial and tangential stress measurements, extensometer, inclinometer (1983);

*Client: Arge S 13/14, S-Bahn, Frankfurt/Main*

**Frankfurt/Main, Tectum Tower, Germany**

Installation of a 4fold rod extensometer with sunk head, 9 m underneath the top of the ground. Instrumentation of the combined pile raft foundation with pile strain transducers, base pressure and interstitial pressure transducers (2005 and 2006);

*Client: J. Schützeichel KG, CDM-Consult*

**Frankfurt/Main, Underground Railway, Lot 83 b, Germany**

Installation of a measuring cross section, radial stress measurements and extensometer (1984);

*Client: Huta-Hegerfeld, Frankfurt/Main*





**Freiburg - Donaueschingen, km 40.1 - 40.03, Germany**

Installation and measurement of inclinometers (1995-);  
*Client: Deutsche Bahn AG, Karlsruhe*

**Freudenstein Tunnel, Germany**

Geotechnical measurements, long-term control of the pilot gallery and the main tunnel, new railway line M/S of the Deutsche Bundesbahn (1991-);  
*Client: PrGr M/S der Bahnbauzentrale, Bundesbahndirektion Karlsruhe, DB ProjektBau GmbH*

**Freudenstein Tunnel, Germany**

Water discharge measurements by installation of Thompson tumbling bays in the bottom drainage, new railway line Mannheim - Stuttgart (M/S) of the Deutsche Bundesbahn (1990-2003);  
*Client: PrGr M/S der Bahnbauzentrale, Bundesbahndirektion Karlsruhe, DB ProjektBau GmbH*

**Freudenstein Tunnel, Pilot Gallery, Germany**

Delivery and installation of an automatic data acquisition facility, new railway line Mannheim - Stuttgart (M/S) of the Deutsche Bundesbahn (1987);  
*Client: PrGr M/S der Bahnbauzentrale, Bundesbahndirektion Karlsruhe*

**Gelsenkirchen, City Railway Ebertstreet, Line 3, Germany**

Installation of a measuring cross section for radial and tangential stress measurements in the tunnel shell (1982);  
*Client: E. Heitkamp GmbH*

**Gernsbach, Road Tunnel, Germany**

Installation and measurement of inclinometer in the preliminary excavation of the Gernsbach tunnel (1993-95);  
*Client: Karl Reif KG*

**Glauchau, Motorway BAB A 4, Chemnitz - Glauchau, Lots 1-3, Germany;**

Execution and evaluation of borehole jack tests with Ettlinger borehole jack, inclinometer measurements (1993);  
*Client: Terrasond GmbH + Co. KG, Geomechanik Sachsen GmbH*

**Grossen-Linden, Control of Railway Embankment, Germany**

Execution of inclinometer measurements in the redeveloped railway embankment region near Giessen/Grossen-Linden (1990);  
*Client: Waschek GmbH, Langenselbold (Hessen)*

**Grosser Wolfsnack, Germany**

Rock mass control with electric fissurometers and automatic call device above the DB railway section 3507 (2004-);  
*Client: gbm - Ges. für Baugeologie und -messtechnik mbH*

**Grosskrotzenburg, Germany**

Installation of multiple extensometers with electric displacement transducers and data loggers in the E.on power station Staudinger (2009);  
*Client: Glötzl GmbH*



#### **Groetzingen, Waste Dump, Germany**

Execution of settlement measurements and temperature measurements in drainage pipes on the temporary sealing of the dump, display and evaluation of measuring data (1993-96);

*Client: Landratsamt Karlsruhe, Amt für Abfallwirtschaft*

#### **Guenterscheid Tunnel, Germany**

Installation of multiple extensometers and pressure cell measuring sections in the course of tunnelling works for the new railway line Koeln - Rhein/Main of the Deutsche Bahn (1998-99);

*Client: Arge Mittelstand NBS Koeln-Rhein/Main, Los A Tunnelbau*

#### **Hamburg, Underground Railway, Germany**

Installation of geotechnical measuring instruments for control of structure behaviour (1984);

*Client: Arge Tiefdüker, Dradenau*

#### **Helsa Tunnel, Germany**

Installation of water level sensors with electronic data loggers in exploratory drillings for the Helsa tunnel, motorway BAB A44 VKE 11 (2004);

*Client: Arge Tunnel Helsa (BG Roßla, BOG)*

#### **High-Mosel Bridge, Uerzig – Zeltingen, Germany**

Execution of borehole jack tests with Ettlenger dilatometer and Ettlenger borehole jack. Installation and measurement of inclinometers (2007-09);

*Client: Erkelenzer BG, Landesbetrieb Mobilität Trier*

#### **Hinterburg Castle, Germany**

Monitoring of boreholes with the optic scanner ETIBS<sup>®</sup>, installation and measurement of inclinometers and 3d fissurometers for bedrock exploration of Hinterburg Castle near Neckarsteinach (2007-09);

*Client: Hessisches Baumanagement*

#### **Hirschhagen Tunnel, Germany**

Borehole deviation measurements in inclined boreholes, installation of water level sensors with electronic data loggers in exploratory drillings for the Hirschhagen tunnel, motorway BAB A44 VKE 12 (2004);

*Client: Arge BOG-Roßla*

#### **Hochheim, Germany**

Observing control of a sliding slope with sliding deformaters in the area of retaining walls at the railway section 3603 Frankfurt – Wiesbaden (2004-);

*Client: GI-Consult*

#### **Hofheim, Germany**

Installation of multiple extensometers for monitoring of the Elizabeth school in Hofheim (2002);

*Client: Terrasond GmbH & Co. KG*

#### **Hofheim – Wallau, Germany**

Inclinometer measurements for a dwelling house (2004-05);

*Client: IfG Dr. Jochen Zirfas*

**Hohentwiel Tunnel, Germany**

Installation of extensometers, highway Stuttgart - Lake of Constance, western part (1982);

*Client: Autobahndirektion Stuttgart 1*

**Iraq Expressway 1/6, Iraq**

Prospecting drilling, vane testings, installation of piezometers and inclinometers in two proving grounds (1981);

*Client: Joint Venture Bilfinger+Berger, Bauaktienges., Dyckerhoff & Widmann*

**Ittenbach Tunnel, Germany**

Installation of multiple extensometers and of a pressure cell measuring section in the course of tunnelling works for the Ittenbach tunnel of the new railway line Koeln - Rhein/Main of the Deutsche Bahn (1999);

*Client: Arge Mittelstand NBS Koeln-Rhein/Main, Los A Tunnelbau*

**Jaenschwalde, REA, Germany**

Installation of extensometers as "settlement gauge" (1994);

*Client: Geo Romberg GmbH*

**Jubach, Gravity Dam, Germany**

Instrumentation of the dam during reconstruction works (1990);

*Client: Dyckerhoff & Widmann, Düsseldorf*

**Juelich, Nuclear Research Plant, Germany**

Installation and measurement of inclinometers in the SNG-area of the nuclear research plant Juelich (1984);

*Client: Kernforschungsanlage Jülich GmbH*

**K 2300 near Garnberg, Germany**

Execution of inclinometer measurements (2009-);

*Client: HPC*

**Kachlet Sluice, near Passau, Germany**

Installation of extensometers and inclinometers (1982);

*Client: Lehrstuhl für Felsmechanik, Universität Karlsruhe*

**Kammereck Rock, Germany**

Installation of anchor load cells and extensometers with distant reading for control of the Kammereck Rock (1992);

*Client: Stump Bohr GmbH, Langenfeld*

**Kappesberg Tunnel, Germany**

Installation of extensometers and convergence measuring sections for dilatometer for tunnel monitoring (1997);

*Client: Menning GmbH*

**Kassel, Hercules Monument, Germany**

Installation of extensometers, inclinometers, settlement devices, groundwater measuring transmitters, hanging pendulum and automatic measuring and recording system (1982);

*Client: Staatsbauamt Kassel*

**Katzenberg Tunnel, Germany**

Insertion of boreholes with combined sliding deformer/inclinometer measuring tubes and with multiple extensometers in the course of investigation for the new construction of Katzenberg tunnel, new railway line Karlsruhe – Basel of the Deutsche Bahn. Setup of an automatic data acquisition at 8 combined sliding deformer / inclinometer measuring points with chain inclinometers and at 3 multiple extensometers with electric displacement transducers. Measurements before and during the excavation works (2001-);

*Client: Menning KG, geon GmbH*

**Kestert, Rock Support, Germany**

Installation of 3-point extensometers with electric displacement transducers for rock monitoring above the railway section 3507 Wiesbaden – Niederlahnstein of the Deutsche Bahn (2006);

*Client: Karl-Heinz Schneider Baugeschäft - Felssicherung*

**Kirchberg, Monastery, Germany**

Inclinometer measurements for slope monitoring at the horse stable (2005-08);

*Client: Terrasond GmbH & Co. KG*

**Kirchheim, Overtake Railway Station, Germany**

Delivery and installation of inclinometers and extensometers for stability control of the eastern slope, new railway line H/W Middle of the Deutsche Bundesbahn; execution and evaluation of the measuring programme (1986);

*Client: Arge Bickhardt-Bau/Kirchner-Stutz*

**Kladno Colliary, Czechia**

Consulting on the planning and installation of geotechnical measuring instruments in a firedamp shaft together with Stavební Geologie n. p., Praha (1987-90);

*Client: Dul Slany k. p., Slany, Czechia*

**Koblenz, Stolzenfels Castle, Germany**

Installation of Trivec measuring tubes (1994);

*Client: Geo-Tec GmbH, Cochem*

**Kostenfels, Germany**

Installation and measurement of an automatic control system of the Kostenfels blocks by means of electrical fissurometers. Control of the effect of explosive concussions during the Kostenfels tunnelling works (1994-);

*Client: Straßenneubauamt Dahn - Bad Bergzabern*

**KTB Continental Deep Drilling Programme, Germany**

Feasibility study for the installation of a "Deep-Earth-Observatory" in the test drilling of the continental deep drilling project (depth about 5000 m); prototype development of a primary stress and hydraulic monitoring station. Long-term measurements of interstitial pressure, primary stress, temperature, electrical conductivity etc. (1988-90);

*Client: Projektleitung der Kontinentalen Tiefbohrung der BRD, im Auftrag des Bundesministerium für Forschung und Technologie, BMFT*

**Kuenzelsau, Handelshof, Germany**

Installation of extensometers and delivery of anchor load cells to control the excavation support (1997);

*Client: Stump Bohr GmbH, Ismaning*

**Laudenbach, Germany**

Measurement of inclinometers at the landslide railway embankment Weikersheim / Laudenbach (2002);

*Client: Menning KG*

**Laufenburg, Germany**

Monitoring of the retaining wall support Laufenburg West with sliding micrometer and Trivec (2000-2001);

*Client: DB Netz AG, Karlsruhe*

**Lehmen, Sluice, Germany**

Execution of borehole jack tests with Ettlenger dilatometer, monitoring of drillings with optic scanner system ETIBS<sup>®</sup>, installation of pore water pressure transducers with el. data loggers (2009);

*Client: Erkelenzer BG*

**Leibis/Lichte, Barrage, Germany**

Instrumentation and measurement in the course of the extended exploratory excavation in the foundation area of the barrage with distometer, combined sliding micrometer - inclinometer measuring tubes and extensometers (1994-95);

*Client: Thüringer Talsperrenverwaltung*

**Leinebusch, Endelskamp and Mackenrodt Tunnel, Germany**

Installation of measuring cross sections and measuring points; geotechnical measurements and execution of the measurement, Leinebusch, Mackenrodt, and Endelskamp tunnel, new railway line H/W North of the Deutsche Bundesbahn, joint venture with Glözl Baumesstechnik Company (1984-85);

*Client: Arge Leinebusch-, Mackenrodt-, Endelskamptunnel*

**Leonberg, Parking Cavern, Germany**

Installation of measuring cross sections, radial and tangential stress measurements, extensometer (1984);

*Client: Dyckerhoff & Widmann, Niederlassung Stuttgart*

**Loerrach, Germany**

Measurement of inclinometers for the enlargement of the vocational academy Loerrach (2002-04);

*Client: Terrasond GmbH & Co. KG*

**Mainflingen, Toxic Waste Dump, Germany**

Installation of inclinometers and inclinometer measurements in dams (1982);

*Client: Hessische Industriemüll Betriebsgesellschaft mbH, Wiesbaden*

**Massada, Israel**

Delivery of electric anchor load cells for control of continuously installed anchors at the pillars of the cable railway Massada (1998);

*Client: Stump Bohr GmbH, Ismaning*

**Meiningen, Germany**

Inclinometer measurements for control of the slope stability, motorway BAB A71 Erfurt - Schweinfurt (1996-98);  
*Client: Terrasond GmbH + Co. KG*

**Mengerskirchen, Pond, Germany**

Installation and maintenance of a measuring set with el. water level transducers for level control in the zone of the pond (1993-99);  
*Client: Hessisches Forstamt Weilburg*

**Messel, Waste Dump, Germany**

Installation and measurement of a pile measuring line by a distometer, inclinometer measurements for control of the slope stability of the mine Messel (1991-96);  
*Client: Kreisauausschuss des Landkreises Darmstadt-Dieburg*

**Michael Tunnel, Investigation Tunnel, Baden-Baden, Germany**

Installation of extensometers, measuring anchors, interstitial pressure transmitters and pressure pickups (1982);  
*Client: Tiefbauamt der Stadt Baden-Baden*

**Miehlen, Germany**

Measurement of inclinometers at the barrage Hauserbachtal (2007-08);  
*Client: GEO-TEC*

**Mottgers and Burgsinn, Overtake Railway Stations, Germany**

Installation of control systems (extensometers, inclinometers, piezometers) in rock slopes along the new railway line H/W South of the Deutsche Bundesbahn (1982);  
*Client: Arge Anger`s Söhne, Preussag AG*

**Muehlenkopf Tunnel, Germany**

Planning, execution and evaluation of geotechnical measurements, new railway line H/W North of the Deutsche Bundesbahn (1983-1988);  
*Client: Arge Mündener Muehlenkopf-Tunnel*

**Muehlenkopf Tunnel, Germany**

Long-term control, geotechnical measurements and geotechnical - rock mechanical expertise of the slope stability and possible effects on the stability of the tunnel, new railway line H/W North of the Deutsche Bundesbahn (1988-90);  
*Client: PrGr H/W Nord der Bahnbauzentrale, Bundesbahndirektion Hannover*

**Muellheim, Germany**

Inclinometer measurements for supervising the landslide Reggenhag (2003-09);  
*Client: Town of Müllheim*

**Multifunctional Probe**

Development and construction of a borehole TV-camera as a modular part of a multifunctional probe (1996);  
*Client: Glötzl GmbH*

**Muenden Tunnel, Germany**

Planning, execution and evaluation of geotechnical measurements, new railway line H/W North of the Deutsche Bundesbahn (1983-89);

*Client: Arge Mündener Mühlenkopf-Tunnel*

**Muenster, Germany**

Inclinometer measurements in bored piles of the excavation support of the underground bike park (1998);

*Client: Gollwitzer GmbH*

**Neckar Bank Tunnel Heidelberg, Germany**

Execution of borehole jack tests with Ettliger borehole jack and Ettliger dilatometer. Insertion of boreholes to groundwater and pore water pressure measuring points with electrical data loggers (2008-09);

*Client: Arge Neckarufertunnel (Eder GmbH, J. Menning KG)*

**Neuenberg Tunnel, Germany**

Execution of geotechnical measurements, settlement gauge with electrical distant reading for open type region of the tunnel, new railway line M/S of the Deutsche Bundesbahn (1985-86);

*Client: Arge Neuenbergtunnel, Bretten*

**New Railway Line Erfurt - Halle/Leipzig, Section 3, Germany**

Execution and evaluation of borehole jack tests with dilatometer, Stuttgarter borehole jack and pressuremeter according to Ménard. Instrumentation of boreholes with electrical interstitial pressure transducers and electronic data loggers (1993);

*Client: Erkelenzer Bohrgesellschaft mbH*

**New Railway Line H/W North: Tunnel Objects, Germany**

Long-term control and geotechnical measurements in the Escherberg, Eichenberg, Riesenberg, Hopfenberg, Wadenberg, Helleberg, Krieberg, Rauheberg, Muendener and Muehlenkopf tunnel. Geotechnical - rock mechanical expertise of the slope stability and possible effects on the stability of Muehlenburg tunnel (1990-92);

*Client: PrGr H/W Nord der Bahnbauzentrale, Bundesbahndirektion Hannover*

**New Railway Line Koeln - Rhein/Main, PA 33, Germany**

Installation of inclinometer measuring tubes; new railway line Koeln - Rhein/Main of the Deutsche Bahn (1995);

*Client: Bohrgesellschaft Roßla*

**New Railway Lines, Tunnels, Germany**

Long-term temperature measurements with measuring chains in the Muendener tunnel and in the Krieberg tunnel with temperature sensors in conjunction with el. data loggers to determine the parameters for the load factor temperature as to the contact line construction (1999-2002);

*Client: DB Netz AG, Central Office Frankfurt*

**Niederstetten Tunnel, Germany**

Installation of a convergence measuring section for distometer to observe the deformation characteristics of the tunnel (1998-);

*Client: gbm - Ges. für Baugeologie und -messtechnik mbH*

**Nittel Tunnel, Germany**

Loggings of borehole running off and inclinometer measurements in the pre-cut of the Nittel tunnel, railway section 3010 Koblenz – Perl of the Deutsche Bahn (2006-09);

*Client: J. Schützeichel KG*

**Nittendorf, Railway Bridge, Germany**

Inclinometer measurements for control of the slope (1998-99);

*Client: Geoalpha, Regensburg*

**Nollinger Berg Tunnel, Germany**

Installation of a measuring section with multiple extensometers (1998);

*Client: Arge Tunnel Nollinger Berg (Max Blgl GmbH, Walter Bau AG)*

**Obsthofstollen, Pforzheim-Eutingen, Germany**

Installation of extensometer measuring sections for strain measurements during tunnelling (1997-98);

*Client: Schachtbau Nordhausen*

**Offenbach, Haus der Wirtschaft, Germany**

Instrumentation of the combined pile - plate basement with pile butt cells, electric base pressure transmitters and electric interstitial pressure transducers (1997);

*Client: Glötzl GmbH*

**Oehringen, Commercial Vocational School, Germany**

Installation and measurement of inclinometers for control of soil compression and dumping works (1992);

*Client: Behnisch & Partner, Stuttgart*

**Peissenberg, Germany**

Monitoring of a 70 m long retaining wall with wire extensometers and alarm device at the railway line of the Deutsche Bahn Schongau – Peissenberg (2005-06);

*Client: DB Netz AG*

**Pforzheimer Tunnel, Germany**

Execution of borehole jack tests with Ettliger borehole jack and Ettliger dilatometer. Monitoring of exploratory drillings with a borehole camera. Installation of convergence measuring sections with distometer (2007-09);

*Client: J. Schützeichel KG*

**Pians, Alpine Road, Austria**

Execution and evaluation of borehole jack tests with Ettliger dilatometer, installation and measurement of an inclinometer in the course of investigation of a sliding slope near Pians (1996);

*Client: Preussag, Wien*

**Pirmasens, Waste Dump Gruenbuehl, Germany**

Monitoring of the dump's support body at the valley side with inclinometers (2000-02);

*Client: Arcadis Asal, Kaiserslautern*



**Quirnbach, Motorway Dam, Germany**

Execution and evaluation of Trivec measurements for dam control (1998-2000);

*Client: Glötzl GmbH*

**Rauheberg Tunnel, Germany**

Installation of measuring cross sections and measuring points, geotechnical measurements and execution of the measurement, Rauheberg tunnel, new railway line H/W North of the Deutsche Bundesbahn, joint venture with Glötzl Baumesstechnik Company (1984-87);

*Client: Arge Rauhebergtunnel*

**Rehberg Tunnel, Germany**

Installation and measurement of sections for deformation measurements with distometer to control an old railway tunnel (2004-05);

*Client: gbm - Ges. für Baugeologie und -messtechnik mbH*

**Reichenbach Valley Bridge, Motorway BAB A 71, Germany**

Instrumentation of combined pile - plate basement of the pillar axis 10 with pile strain transducers, base pressure transmitters, and interstitial pressure transducers; automatic measuring system with remote data transmission by radio modem (2000);

*Client: GGB GmbH*

**Reichenstein Tunnel, Germany**

Stress measurements according to the method of compensation, installation and measurement of extensometer- and distometer measuring sections in the course of the documentation (2001-);

*Client: gbm - Ges. für Baugeologie und -messtechnik mbH*

**Rheinfeld, Germany**

Measurement of inclinometers for monitoring the mast no. 8551/100 of EnBW (2002-05);

*Client: Dr. Ing. Orth GmbH*

**Rheinheim, Germany**

Inclinometer measurements for slope stability control in the building area Bruckaecker (1995-2001);

*Client: Planungsbüro Taberg*

**Rollenberg Tunnel, Germany**

Control of the preliminary excavation; installation and measurement of extensometers and inclinometers at the western portal of Rollenberg tunnel, new railway line M/S of the Deutsche Bundesbahn (1984-86);

*Client: PrGr M/S der Bahnbauzentrale, Bundesbahndirektion Karlsruhe*

**Rollenberg Tunnel, Pilot Tunnel, Germany**

Installation of measuring cross sections and evaluation of geotechnical measurements and tests, new railway line M/S of the Deutsche Bundesbahn (1983-85);

*Client: PrGr M/S der Bahnbauzentrale, Bundesbahndirektion Karlsruhe*

**Rottbitze Tunnel, Germany**

Installation of multiple extensometers and pressure cell measuring sections in the course of tunnelling works for the Rottbitze tunnel of the new railway line Koeln - Rhein/Main of the Deutsche Bahn (1999);

*Client: Arge Mittelstand NBS Koeln-Rhein/Main, Los A Tunnelbau*

**Salt Lake, Germany**

Installation of electrical interstitial pressure transducers with electronic data loggers in the course of the re-dam up of the salt-lake (1996-97);

*Client: IHU GmbH, Halle*

**Saubuckel Tunnel, Germany**

Execution of the geotechnical measuring programme, control of the preliminary excavation with inclinometers, new railway line M/S of the Deutsche Bundesbahn (1986-88);

*Client: PrGr M/S der Bahnbauzentrale, Bundesbahndirektion Karlsruhe*

**Schanz Tunnel, Germany**

Shortening and re-lengthening of multiple glass fibre rod extensometers in the course of partial recovery of the bottom area, railway line Waiblingen - Schwaebisch Hall - Hessental (1994 and 96);

*Client: Bilfinger + Berger, Stuttgart*

**Schickeberg Tunnel, Germany**

Execution of geotechnical measurements in the course of tunnelling, new railway line H/W Middle of the Deutsche Bundesbahn (1985-86);

*Client: Arge Schickeberg Tunnel*

**Schlackenberg, Waste Dump, Germany**

Execution of borehole loggings in wells (2007);

*Client: Arge Deponie Schlackenberg*

**Schliengen Vineyard, Germany**

Installation and measurement of combined sliding deformer / inclinometer tubes for PFA9.1 new railway line Karlsruhe – Basel (2008-);

*Client: Abt GmbH, geon GmbH*

**Schluechtern Railway Station, Germany**

Measurement of boreholes with multifunctional probe, installation of multiple extensometers with electric displacement transducers and measuring automatic device with alarm (2009-);

*Client: J. Schützeichel KG*

**Schuerzeberg Road Tunnel, Germany**

Planning, execution and evaluation of geotechnical measurements in the Schuerzeberg tunnel; B 27 roundabout Oberrieden (1990-1992);

*Client: Hess. Straßenbauamt, Eschwege*

**Schwandorf, Germany**

Delivery and installation of multiple extensometers and inclinometers, delivery of hydraulic anchor load cells to control the stability of a slope (1995);

*Client: Stump Bohr GmbH*

**Schwarzbach, Valley Bridge, Germany**

Execution of measurements, delivery and installation of measuring sensors and instruments (load measurement, strain measurement with wire resistance strain gauge rods, extensometer and inclinometer measurements) in joint venture with Glötzl Baumesstechnik Company, valley bridge Schwarzbach of the new railway line H/W Middle of the Deutsche Bundesbahn (1983);

*Client: Grund- und Pfahlbau GmbH, Frankfurt/M.*

**Schwarzenbach Barrage, Germany**

Installation of pneumatic interstitial pressure transducers in upstream boreholes (1997);

*Client: Badenwerk AG*

**Schwarzkopf Tunnel, Germany**

Long-term monitoring of deformations with distometer measuring sections (1999-);

*Client: DB AG Planungsbüro Fahrbahn Süd, LGA Bautechnik GmbH*

**Schweitenkirchen, Slope Slide, Germany**

Execution of inclinometer measurements (1996-99);

*Client: Geoalpha GmbH*

**Sibratsgfall, Austria**

Insertion of boreholes to inclinometer- and interstitial pressure measuring points (2007);

*Client: Reitberger GmbH*

**Soesetal Earth Dam, Harz, Germany**

Installation of piezometers for control of leakage water (1985);

*Client: Harzwasserwerke des Landes Niedersachsen, Hildesheim*

**Spitzeich Tunnel, Germany**

Installation and measuring of convergence measuring sections with distometers as well as crack control for documentation of mining-related deformations (1999-2003);

*Client: gbm – Ges. für Baugeologie und -messtechnik mbH*

**Steinbach, Germany**

Inclinometer measurements in the section Dannenfels – Steinbach of the county road L 394 (2004-05);

*Client: GeolIngenieure Fruchtenicht GmbH*

**Stuttgart 21, 3. EKP, Lot 4, Germany**

Installation of electrical interstitial pressure transducers with electronic data loggers in exploratory drillings, new railway line Stuttgart - Augsburg of the Deutsche Bahn (1996-98);

*Client: ARGE Stuttgart 21 (Waschek GmbH, Terrasond GmbH + Co. KG)*



#### **Stuttgart 21, 4. EKP, Lots 1-7, Germany**

Installation of electric interstitial pressure transducers with electronic data loggers in exploratory drillings, insertion of Trivec measuring tubes in a borehole, new railway line Stuttgart - Augsburg of the Deutsche Bahn (1997-99);

*Client: Arge Stuttgart 21, 4. EKP and Hettmannsperger GmbH*

#### **Stuttgart 21, 5. EKP, Lots 1-7, Germany**

Insertion of boreholes with Trivec measuring tubes and with combined sliding deformer/inclinometer measuring tubes, new railway line Stuttgart – Augsburg of the Deutsche Bahn (2002-03);

*Client: Arge Stuttgart 21, 5. EKP*

#### **Stuttgart, Bank and Administration Centre at the Central Station, Germany**

Installation and measurement of control systems in the excavation safety device (anchor load cells, earth pressure transmitters) and in the bottom plate of the skyscraper (extensometers, base pressure transmitters), (1992-93);

*Client: Baugrundinstitut Smolczyk & Partner GmbH, Stuttgart*

#### **Stuttgart, Suburban Train Stuttgart Airport - Bernhausen, Germany**

Execution of borehole jack tests with the dilatometer, primary stress measurements with the triaxial cell CSIRO, execution of air injection tests with online control of 13 levels with electrical pressure loggers and data recording unit (1995);

*Client: Erkelenzer Bohrgesellschaft, J. Schützeichel KG*

#### **Stuttgart, Suburban Train Stuttgart Airport - Bernhausen, Germany**

Installation of combined sliding deformer / inclinometer tubes, short extensometer and tilt sensors with automatic measuring system for monitoring of runway and landing strip during tunnelling (1997-98);

*Client: Terrasond GmbH + Co. KG*

#### **Sulzhof Tunnel, Germany**

Installation of a measuring cross section, radial and tangential stress measurements along the new railway line H/W Middle of the Deutsche Bahn in joint venture with Glöttzl Baumesstechnik Company (1983-84);

*Client: Hochtief AG, Frankfurt/M.*

#### **Sylvenstein Reservoir, Germany**

Installation of combined sliding micrometer - / inclinometer measuring tubes up to 108 m depth (2009);

*Client: Stölben GmbH*

#### **Trier, Germany**

Inclinometer measurements for the planned construction of Aldi Trier (2009-);

*Client: J. Schützeichel KG*

#### **Trier, 2nd Sluice of the Mosel, Germany**

Execution of borehole jack tests with Ettliger borehole jack and Ettliger dilatometer. Insertion of boreholes to interstitial pressure measuring points with automatic data acquisition (2007);

*Client: Erkelenzer BG*



#### **Tuellinger Tunnel, Pressure Measurements, Germany**

Installation and measurement of four pressure cell measuring sections and eight strain measuring sections for distometer in the course of the redevelopment of the Tuellinger tunnel (1997-);

*Client: Arge Tüllinger Tunnel (Harsch, Beton- und Monierbau)*

#### **Tuellinger Tunnel, Strain Measurements, Germany**

Installation and measurement of convergence measuring cross sections with distometer, electro-optic convergence measurements, extensometer, fissurometer, automatic data recording of all electrical probes (1991-1997);

*Client: BZA München und Bundesbahndirektion Karlsruhe*

#### **Unken, Roundabout, Austria**

Consulting on the instrumentation of a pilot gallery in swelling rock (1989);

*Client: Bautechnische Versuchs- und Forschungsanstalt, Salzburg, Austria*

#### **Vaihingen, Eastern Roundabout, Germany**

Measurement of inclinometers for control of slope stability in the region of the planned tunnel portal (1993-97);

*Client: Baugrundinstitut Smolczyk & Partner GmbH*

#### **Vallendar, Germany**

Measurement of inclinometers in the "Obere Meerbach" Street (2009-);

*Client: J. Schützeichel KG*

#### **Walchensee, Barrage, Germany**

Camera monitoring of exploratory drillings in the course of stability controls of the water castle dam, installation of packers with pneumatic foundation water pressure transducers (1998);

*Client: Terrasond GmbH + Co. KG*

#### **Waldeck, Power Station, Germany**

Borehole deviation measurements in exploratory drillings for the extension of the Power Station Waldeck 2 (2009-10);

*Client: Arge PSW Waldeck (Terrasond, Schützeichel, BOG)*

#### **Waldkirch, Retaining Wall, Germany**

Monitoring of the retaining wall support with sliding micrometers and Trivec (2002-03);

*Client: DB Netz AG, Karlsruhe*

#### **Walhalla, Donaustauf, Germany**

Instrumentation of the underground arches, the „hall of expectation“ and the big retaining wall with distometer measuring sections to determine temperature-related length changes or length changes by construction deformations (1997-2001);

*Client: Ing.-Büro Harbauer, Regensburg*

#### **Wallau, Detour L3017, Germany**

Delivery and installation of inclinometers and combined extenso-/inclinometer measuring stations (2001);

*Client: Terrasond GmbH & Co. KG*

**Wambach, B 260, Germany**

Execution of borehole jack tests with Ettlenger dilatometer and Ettlenger borehole jack, installation of multiple extensometers (1995);

*Client: Waschek GmbH*

**Wattkopf Tunnel, Germany**

Installation of measuring cross sections, radial and tangential stress measurements, extensometers and piezometers in the Wattkopf road tunnel near Ettlingen. Execution of stress release measurements (1989-1993);

*Client: Arge Wattkopftunnel*

**Weil am Rhein, Germany**

Inclinometer measurements for slope monitoring at the Loerrach Street (2002-03);

*Client: Terrasond GmbH & Co. KG*

**Weiler Helical Tunnel, Germany**

Installation and measurement of convergence cross sections with distometer (1996-);

*Client: Stadt Blumberg*

**Weinheim, Germany**

Inclinometer measurements at the factory Muellheimer Tal (Freudenberg) (2001);

*Client: Erkelenzer Bohrgesellschaft*

**Weinsberg Tunnel, Germany**

Installation and measurement of convergence measuring sections with distometer and sliding micrometer measuring tubes (2001-);

*Client: AVG Karlsruhe, Walter Bau AG*

**Wipperoda, Damp, Germany**

Installation of temperature sensors with electric data logger at the slope sealing of the waste (1997-2001);

*Client: ETG Wahlwinkel*

**Wirmsthal, Central Waste Dump, Germany**

Installation of measuring instruments for control of a rock wall of the central waste dump Wirmsthal/Bavaria (1990);

*Client: Grundbauinstitut Dr. Amann, Mühltal*

**Worms, Germany**

Installation and measurement of horizontal inclinometers for settlement control below a hall of VDL Logistics Worms (2004-05);

*Client: Goldbeck Bau GmbH*

**Wuerzburg, Underwater Pipelines in the Main, Germany**

Levelling measurement of the underwater pipelines in the Main near Dettelbach, Klingenberg and Veitshoechheim with hydrostatic levelling to prove the minimum cover (1999);

*Client: Pipeline Engineering GmbH*