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PREFACE

The present Annual Report provides a summary of the statutory tasks and ancillary activities undertaken by the state organization Czech Geological Survey-Geofond (Geofond) during the year 2005. A brief account of the financial outcome for the year is also presented. The report has been produced for use by state authorities and also by the wider public. A more detailed description of all these activities can be found in the "Report on the activities and financial affairs of Geofond during 2005". This has been compiled following the new format required by Ordinance No. 232/2005 Coll. of the Ministry of Finance that defines the content of an annual report.

As in previous years, Geofond carried out statutory tasks in compliance with its Charter of Foundation and the laws of the Czech Republic, specifically, Act No. 62/1988 Coll. On Geological Works (Geological Law), Act No. 44/1988 Coll. On Protection and Utilization of Mineral Resources (Mining Law), all amendments to these laws, and the Agreement Ref. No. M/140/1997 between the Minister of the Environment and the Minister of Industry and Trade on the activities of Geofond. Statutory duties involving maintenance, regular up-dates and use of files and databases containing the results of geological investigations and geological documentation have continued. Special attention has been given to improving the quality, comprehensiveness and accessibility of these databases.

In addition, Geofond undertook numerous geological projects financed from the budget of the Geological Department of the Ministry of the Environment. The Projects "Completion of the Documentographic information subsystem in 2003–2006", "Economic registers of SurIS (the information subsystem for raw materials) /Enlargement and updating of the economic branch of SurIS", "Evaluation of exclusive mineral deposits in the Register of reserves", "Database of main mine workings II", "Database of mine waste dumps II" and "Geographical location and interpretation of old mining maps" have continued. The two-year project "Beginning the creation of the digital archive of reports for incorporation in the information system of the Czech Geological Survey-Geofond" and the one-year projects "Technical Development of the Information System of the Czech Geological Survey-Geofond in 2005", "Compilation and use of geophysical data, obtained with finance from the state budget" and "Implementation of Map Services within the IS of the ČGS-Geofond" were completed. In addition, the first stage of work on a two-year project "Digitisation of reports available on microfilms and their incorporation in the Digital Archive of Reports of the ČGS-Geofond" was started and preparatory work for the projects "Transfer of information from surface geophysical surveys into the central relational database of the CGS-Geofond" and "Updating of geologically documented objects (GDO) and addition of objects with hydrogeological data from old reports archived by the CGS-Geofond to the hydrogeological subsystem (HYD subsystem)" was initiated. Co-operation on the two-year international project "e-EARTH–Electronic Access to Geological Data from Borehole Databases", which was co-financed by the European Commission (EC) and the Ministry of the Environment as a part of the e-Content programme (3rd call, Action Line 1.2.), was completed successfully.

Geofond also took a significant part in collaborative projects financed by the Ministry of the Environment and managed by other organizations. Co-operation on the projects "Digitisation of borehole geophysical measurements from selected boreholes and their input to the Central Relational Database of Geofond" (led by Aquatest Inc.), "Processing of borehole geophysical measurements from DIAMO

s.p. and transferring them to the Central relational database of Geofond (CRD)––Crystalline formations of the South-Western part of Bohemia" (led by První Příbramská Ltd.), "Digitisation of borehole geophysical measurements from DIAMO s.p.–Moravia (led by DIAMO s.p., GEAM Dolní Rožínka branch) and "Digitisation of geophysical measurements from selected boreholes and their incorporation into the Central Relational Database of the Czech Geological Survey-Geofond" (led by Geofyzika GP Ltd., Ostrava) continued. Co-operation with the Czech Geological Survey on the projects "3D Modelling of the basement relief of the Sokolov and Cheb Basins, creation of a file of data from the GDO's in the Geofond CRD for use in digital modelling", "Portal of the State Geological Service" and "Revision of Old Mine Workings" was started.

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1. ACTIVITIES DESIGNATED BY THE MINISTRY OF THE ENVIRONMENT

1. Acting in the capacity of a branch of the State Geological Service, Geofond routinely fulfils tasks requested by state authorities.

These individual tasks were not specified at the beginning of the year and therefore were not formally listed among the main projects. The main *ad hoc* tasks in 2005 were:

- Compilation of drafts of the State Statistical Statements Hor (Ministry of Industry and Trade) 1-01 and Geo (Ministry of the Environment) V3-01 for the year 2006, and their discussion. The wording of these Statements has been approved by ordinance No.421/2005 Coll. of the Czech Statistical Bureau, which defines the Programme of statistical investigations for 2006.
- Submission of Maps of protection of mineral deposits and donation of the publications "Mineral Commodity Summaries of the Czech Republic" and "Changes in the Reserves of Registered Mineral Deposits during the years 1995–2004" for use by the State Mining Authority.
- Providing information on rehabilitation of land to the Ministry of Agriculture––information for the Research Institute of Agricultural Economy.
- Providing information on rehabilitation for the Final Statistical Report of the Institute of Ecology of the Countryside.
- Providing information on rehabilitation to the Agency for Nature Conservation and Landscape Protection of the Czech Republic
- Providing information on areas affected by mining of gravels and sand in the Czech Republic for BF JU České Budějovice
- Providing information about non-exclusive mineral deposits (D) and protected areas of mineral deposits (CHLÚ) in the Czech Republic to the ONESUR company for the purposes of the Office for the Representation of the State in Property Affairs, Brno.

2. Compilation and publication of "The Register of reserves of exclusive mineral deposits in the Czech Republic" and "Records of mineral deposit reserves in the Czech Republic", up-dated versions as of 1 January 2005, in accord with §29 Par. 4 of the Act No. 44/1988 Coll., On Protection and Utilization of Mineral Resources (Mining Law), and §10 of the Act No. 89/1995 Coll., On the State Statistical Service, and all amendments to these laws.

On 31 May 2005, three parts of "The Register of reserves of exclusive mineral deposits in the Czech Republic" were published (I. Metallic Ores, Minor Elements, II. Fossil Fuels, III. Industrial Minerals) and also the „Records of mineral deposit reserves in the Czech Republic", containing information on non-exclusive resources of construction materials, using data from the State Statistical Statements Geo (Ministry of the Environment) V3-01. Both publications were distributed to 44 bodies of the state administration of the Czech Republic selected by the Geological Department of the Ministry of the Environment.

3. Compilation and distribution of the yearbook "Mineral Commodity Summaries of the Czech Republic"–the position in 2004.

The Czech version of this yearbook, which is presently the only generally accessible source of information on the mineral resource potential of the Czech Republic, was compiled in an edition of 500 copies of 216 pages by the deadline

of 15 June 2005. An English edition of 430 copies with the same content was completed by 31 October 2005. The Czech and English editions in CD format were published in January 2006.

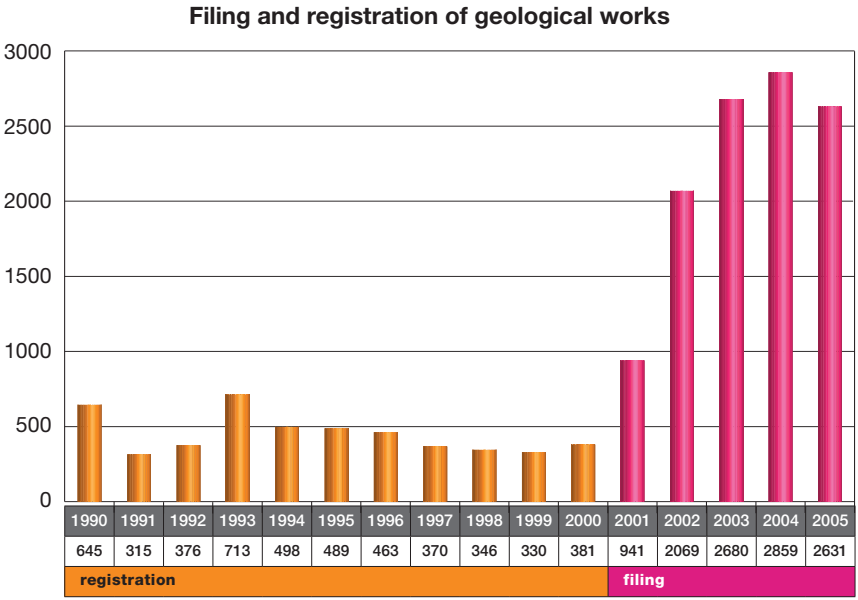
4. Preparation of the report "Changes in the Reserves of Registered Mineral Deposits during the years 1995–2004".

This is a confidential paper that was compiled in an edition of 20 copies of 258 pages in July 2005 for the State Administrative bodies (that means the Ministry of Industry and Trade, the Ministry of the Environment and the State Mining Authority). This was produced in the same format as in previous years. It is also used by Geofond internally for preparation of documents concerning State raw materials policy.

5. Compilation of "Reserves of minerals within designated mining claims and other exploited deposits of non-exclusive minerals", prepared at the request of the Ministry of Industry and Trade and in accord with § 10 of the Act No. 89/1995 Coll., On the State Statistical Service, and all amendments to this law.

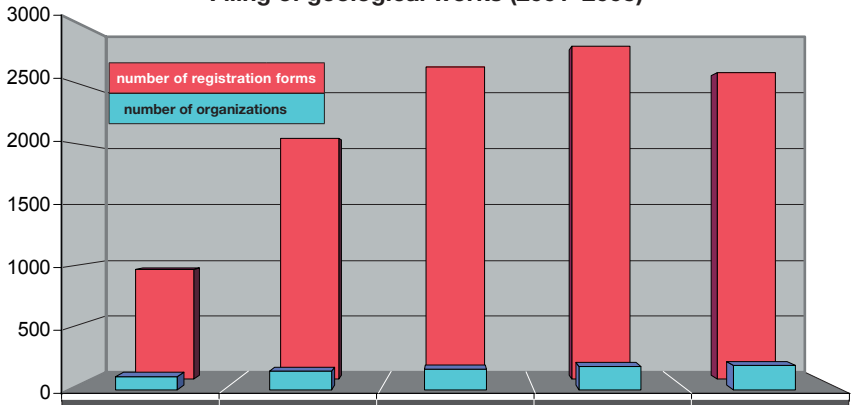
The data were collected using the statistical statement form Hor(MPO)-1-01. A compilation of reserves of minerals was published on 31 May 2005, printed in 80 copies and mailed to those institutions selected by the Ministry of Industry and Trade.

6. Undertaking registration of geological works in accord with § 7 Act No. 62/1988 Coll. (On Geological Works), and all amendments to that law, and the regulation of the Ministry of the Environment 282/2001 Coll. (governing registration of geological works).

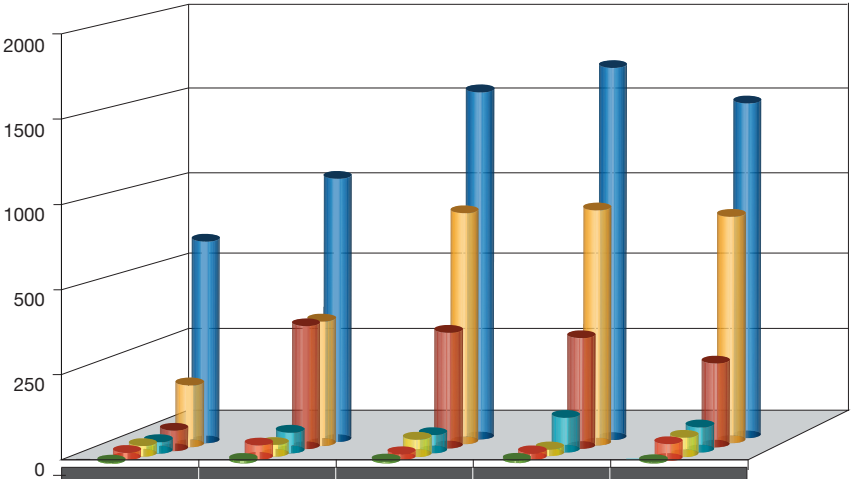


Since 2001 the amendment to the Geological Law changed the regulations (registration changed to filing)

Filing of geological works (2001–2005)



	2001	2002	2003	2004	2005
number of organizations	107	150	168	190	197
number of registration forms	941	2069	2680	2859	2631



	2001	2002	2003	2004	2005
research	3	10	4	5	2
mineral deposits	24	21	29	30	50
exceptional impact	25	14	50	35	64
environment	23	54	52	110	74
pollution	64	314	258	246	205
engineering geology	163	316	803	825	803
hydrogeology	639	1087	1516	1651	1460

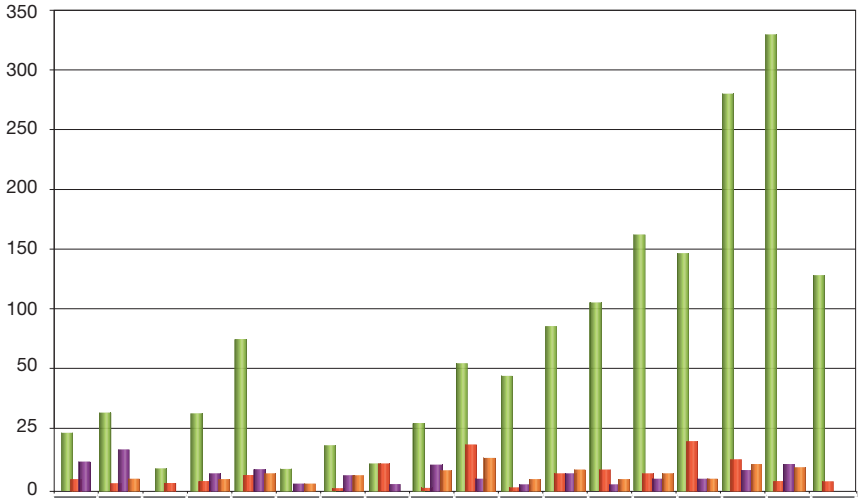
7. Providing protection and registration of exclusive (state-controlled) mineral deposits in accord with §8 Law No. 44/1988 Coll., On Protection and Utilization of Mineral Resources (Mining Law), and all amendments to that Law, and §15 to 19 of the Law.

According to §8 of the Mining Law, Geofond is responsible for the protection and registration of 387 state-controlled mineral deposits. For 360 of these mineral deposits, a total of 361 protected areas have been designated. Of the remaining 27 state-controlled mineral deposits, applications for the designation of 7 protected areas were lodged in 2005. In other cases the proceedings have been suspended indefinitely, or their status as protected areas has not yet been certified. In addition, 19 proposals were made for modifications and cancellation of existing protected areas in connection with changes in the status of state-controlled mineral deposits. Representatives of Geofond took part in negotiations and on-site investigations related to the definition of these protected areas of mineral deposits. A total of 103 designated protected areas have so far been cancelled on the recommendation of Geofond. Of these, 8 were cancelled in 2005.

8. Maintaining the Database of old mine workings in accord with §35 Law No. 44/1988 Coll. On Protection and Utilization of Mineral Resources (Mining Law), all amendments to the Law, and regulation No. 363/1992 Coll. of the Ministry of the Environment (registration of old mine workings, maintaining the database, taking part in on-site investigations at the request of the Ministry of the Environment).

In accord with the laws listed above, Geofond undertakes registration of old mine workings. Data is stored in the Database of old mine workings which, since 2002, has been accessible at signal level on the Geofond intranet, and on the Internet. A total of 136 new reports on dangerous surface effects arising because of old mine workings were registered. As of 31 December 2005, 1.735 such reports relating to 1.587 old mine workings had been registered. In addition, 9 reports of multiple events from previous years relating to 2.862 sites, without detailed specifications, have been registered. Information about the numbers of individual reports, numbers of reported mine workings and their categories are revised every year. Therefore the summary statements may not match the information given in previous years. In addition, 38 reported areas were visited in 2005. A detailed list of old mine workings, updated as of 31 December 2005, was produced by Geofond for the Geological Department of the Ministry of the Environment. This serves as information in support of the Annual Report of the Ministry of the Environment.

Additions to the Register of old mine workings in the period 1988–2005

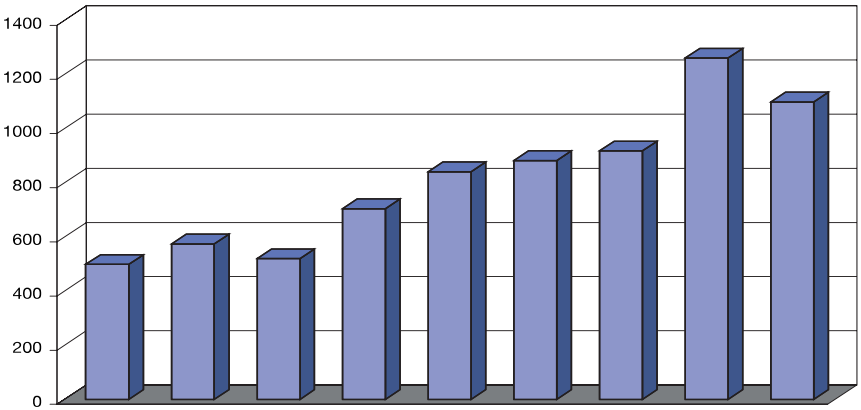


	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
old mine workings	23	31	8	32	71	8	17	9	27	53	45	85	113	167	149	278	338	133
abandoned exploratory mine workings	4	2	2	3	5	0	1	9	1	17	1	6	8	6	19	11	3	3
abandoned mine workings	9	15	0	6	7	2	5	2	9	4	2	6	2	4	4	7	9	0
others	0	4	0	4	6	2	5	0	7	12	4	8	4	6	4	9	8	0

9. Providing information at the request of public or private bodies in accord with Law No. 123/1998 Coll., On the Right to Information about the Environment.

In 2005, 12 requests from public and private bodies for provision of information in accord with the above Law were processed, though the applicants did not refer to their rights under this Law. These enquiries were mostly related to problems arising from old mine workings and their rehabilitation and were provided with the agreement of the Ministry of the Environment and the Ministry of Industry and Trade.

Number of expert opinions prepared in accord with § 13 Law No. 62/1988 Coll.



1997	1998	1999	2000	2001	2002	2003	2004	2005
number								
499	575	520	705	841	882	918	1261	1099

10. Preparation of expert opinions concerning protection of mineral deposits, potential dangers from undermined areas and landslide movements at the request of regional councils, organizations and other parties, in accord with § 13 Law No. 62/1988 Coll. on geological works, and all amendments thereto, including compilation of literature summaries when requested.

In 2005, there were 1.099 requests for expert opinions. Of these, 9 were for the purposes of regional planning (e.g. Karlovy Vary, Jičín, Orlické mountains and foothills, Adršpašsko and Broumovsko) and changes of Prague local planning; 442 were for local planning in towns and villages; 35 expert opinions were prepared for Land Registries–e.g. Semily, Louny, Karlovy Vary, Kladno, for České Lesy s.p. Františkovy Lázně, as well as for private persons (information about mineral deposits on land intended for sale); 50 were for the Ministry of Agriculture–Land Registries: e.g. Semily, Liberec, Rakovník, Benešov, Sokolov, Chomutov, Kolín, Jindřichův Hradec, Louny, Písek, Mladá Boleslav, Prague and Rokycany to enable simple and complex modifications of land use; 8 were for the Office for the Representation of the State in Property Affairs e.g. in Benešov and Ostrava (information on mineral deposits and protected areas of mineral deposits) and 555 expert opinions concerning capital construction, reconstruction of power lines, service laterals, building and reconstruction of roads, building of houses and housing construction for both commercial organizations and private persons, etc. were compiled.

11. Compilation and update of metadata for the meta-information system of the Ministry of the Environment (MIS) in accord with Commission No. 22/2000 of the Minister of the Environment

Metadata records were updated until 31 March 2005 under instructions from the Department of Informatics of the Ministry of the Environment and under instructions from CENIA (The Czech Agency for Information on the Environment),

which, from 1 April 2005, assumed responsibility for administration of MIS from the Department of Informatics of the Ministry of the Environment. The biggest changes were made in January and November. The changes in November were due to the significant modifications required during the creation of the website.

12. Management of projects financed from the state budget by the Ministry of the Environment (Fund for Geological Works, Fund for Studies):

• ***Completion of the Documentographic Information Subsystem during 2003–2006***

This project is linked to the project "Comprehensive processing of geological documentation from archives acquired by Geofond", completed in 2002. The main aim of this project was to complete the processing of archives transferred from other organizations.

- **Středisko dokumentace ložisek zlata v Jílovém:** (Centre for Documentation of Gold Deposits, Jílové): The documentographic processing of the archive of maps of gold deposits was continued using purpose-designed software based on that used for the database of main mine-workings. 270 map sheets were processed in 2005.
- **Báňské stavby Most (Mine Construction Co., Most):** Processing of the extensive archives of boreholes continued. Another 26 reports, consisting of coherent collections of borehole records from particular localities and, as far as possible, from the same period of time (from 3 to 20 single boreholes), were incorporated in the Geofond archives in 2005.
- **Ústav nerostných surovin (The Institute of Raw Materials, Kutná Hora):** Processing of the archive acquired in 2004 was begun. During this work it became apparent that the archive contained 5.900 reports. This number is much greater than that given in the original list. 300 reports from this resource were incorporated into the Geofond archive in 2005.
- **Processing files related to mineral deposits acquired from archives of other organizations:** Reports and references concerning selected deposits or parts of selected deposits were acquired from the archives of other institutions. Incorporation of information concerning mineral deposits extracted from these sources into the Mineral Deposits Information Subsystem of Geofond (SurIS) has continued. The work was undertaken by sub-contractors so that information, missing from the records until now, could be added. In 2005, information about 40 deposits was processed in this way.

• ***Economic registers of SurIS (Information Subsystem of Raw Materials) /Enlargement and updating of the economic branch of SurIS/***

The Ministry of the Environment approved this project for the period from 2003 to 2006, enabling continuation of work that had been funded up to 2001 under the terms of the project "Specialized databases for the Information System on Raw Materials (SurIS)". This work entails a daily survey of world prices and the compilation of a price register (with sub-registers for crude oil, gas, ore metals, rare metals, strategic (minor) metals and selected industrial minerals). A commentary on the major fluctuations in prices of particular monitored commodities and an annual survey of prices of minerals processed and produced in the Czech Republic are included. The annual report "Changes in the Reserves of Registered Mineral Deposits during the years 1995–2004" was also compiled. The yearbook "Mineral Commodity Summaries of the Czech Republic" has been extended to include new chapters "World Production" and "World Market Prices" and the black-and-white maps of previous editions

have been replaced by coloured ones. The English edition and a CD have been compiled in the same format. Exchange of information, reports and expertise on raw materials with foreign geological surveys and presentations of Czech work at international conferences (Poland, Slovakia), as well as publications in international specialist journals has continued (Starý, J. and Kavina, P. (2005): Czech Feldspar. Industrial Minerals **457**, p.48-53).

- ***Evaluation of exclusive (state-controlled) mineral deposits in the Register of reserves (Re-evaluation)***

The Ministry of the Environment approved this project for a period from 2003 to 2006. This is linked to the project "Re-evaluation of mineral deposits in the Czech Republic"(1993–2001). The aim is to re-evaluate unused state-controlled mineral deposits which, for various reasons, were not covered by the previous project. Re-evaluations of particular mineral deposits were made by independent geological companies contracted by Geofond. Geofond co-ordinated the work and specified the methods used, and also managed the review and approval of special conditions for the utilization of the deposits, as well as compilation of expert reports and submission of the results of re-evaluation to the Committee for Projects and Final Reports of the Ministry of the Environment for final approval. In 2005 re-evaluations of 25 state-controlled mineral deposits were completed. Of these, 19 were shown to have no economic reserves and the reserves for 6 deposits remain to be calculated. By the end of 2005 the Committee for Projects and Final Reports had discussed and approved all conditions for utilization and all the contractors had submitted final reports.

- ***Database of Main Mine Workings II.***

As a part of this project, 273 more records were gathered and incorporated during 2005. This involved updating and completing data sheets including photodocumentation from the area of Prague 8, 9 and 14 (mining operations in chalk sediments around Prosek) and from the Zlaté Hory mining district in Jeseníky. During this work, 96 duplicate records were detected and corrected. By 31 December 2005, the database contained 14.595 entries.

- ***Database of mine waste dumps II.***

As part of this project, 422 records were gathered and put into the database during 2005. These were from the Krušné hory area–around Moldava and Luby. Also data from the area around Plzeň was processed; this will be added to the database during 2006 after the relevant reports are approved by the Ministry of the Environment. By 31 December 2005 the database contained a total of 1.851 objects.

- ***Geographical location and interpretation of old mining maps***

In 2005, software applications intended for scanning and rectification of map locations were installed at the Kutná Hora office so that processing and updating of records could be undertaken. Physical inspection of the maps, updating data in the database and adding barcodes was initiated. The scanning of selected maps was undertaken by sub-contractors. As a separate project, maps from other collections are being scanned by the Czech Geological Survey. Of a total of 2.038 selected maps, 1.571 had been scanned by the end of the year 2005. Map rectification was also managed by sub-contractors–1.663 maps were processed in 2005.

- ***Beginning the creation of the digital archive of reports for incorporation in the information system of the Czech Geological Survey-Geofond***

Thanks to the purchase of scanners and a file server for saving the scanned data, this project started at the end of 2003. The aim during 2004 and 2005 was to develop and implement the techniques for preserving documentation in safe

and durable form. This will also allow more effective access to the full information contained in the documents. The strategy follows from the outcome of the project: "Integrated digital archive of reports and references stored in Geofond CR", financed in 2000 by the Ministry of the Environment. That project was suspended before the proposed date of completion because of the high costs involved and because of lack of equipment in-house. The new scanning station was equipped with the necessary technical facilities, software and staff in 2004. A model of the technical function and workflow was created and operations were begun on a pilot basis. A new model of the database of the documentographic subsystem was designed, its function was tuned and applications for transferring data to the new model and an additional application for updating and maintenance of the database were created. During 2005, attention was given to finishing work on applications that already partly existed, incorporating the digital archive fully within the subsystem, converting data obtained to the final format, and creating applications for the presentation of data already available. The priority was to scan the maximum number of reports, and also to establish priorities for processing documents of different categories. As a result, routine operation of the scanning line was ensured. Reports from the fifties were scanned first because of poor legibility caused by the techniques of copying used at that time. These are the series of reports beginning with the code P010000. More recent reports bound with plastic clips enabling easy handling and rebinding, as well as new unbound reports, were also scanned effectively using the new scanner with adapter. This series was scanned systematically beginning from the code P080000. Finally, several tens of selected reports, mostly with the code FZ, in addition to maps required by internal and external users, were scanned as a priority. By 31 December 2005, the digital archive contained a total of 308.306 scanned pages from 5.068 reports (including those that were scanned in 2000). This amounts to ca. 4% of the estimated total number of pages in reports stored in the archive. Reports scanned from microfilms under the terms of the project "Digitisation of reports available on microfilms and their incorporation in the Digital Archive of Reports of the ČGS-Geofond" are not included. Under the terms of the contract, the project was completed on 15 January 2006, and the final report was submitted. Continuation of this work depends on further financial support from the Ministry of the Environment.

- ***Technical development of the information system of the Czech Geological Survey-Geofond in 2005***

The project arises from the results of the projects: "Comprehensive information system of Geofond CR" (1998–2002), "Management, maintenance and testing of possible developments of the information system of Geofond in 2003" and "Development and maintenance of the information system of the ČGS-Geofond 2004". As in previous years, the main aim was to ensure the operation, maintenance, development and modernisation of the information system of the Czech Geological Survey-Geofond. Based on the requirements of external and internal users, development of new applications and modifications of existing applications continued. Designing and compiling the content of the new Geofond website was also part of the project. One of the main objectives was to test and implement new technologies. The possibility of using ArcPlot technology (ESRI) for printing map outputs was tested. Because the existing large format plotters do not support such technology, it was not possible to take advantage of this product. The product ArcInfo (ESRI) was installed on a loan basis so that it could be tested as a tool for direct editing and checking of raster data stored in the SDE. An application for capital funding to enable purchase

of this product will be made in 2006. The main benefit of the project was a significant technical advance. After ten years of operation, the out-of-date GIS technology of MGE (Intergraph) was abandoned and completely replaced by SDE (ESRI), SDO (Oracle) technology using ArcView 9 (ESRI) and Geomedia 6 (Intergraph) tools. Under the terms of the contract, the project was completed by 15 January 2006, and the final report was submitted.

- ***Compilation and use of geophysical data obtained with finance from the state budget***

From 2001 until 31 August 2003, geophysical data was handled under the terms of the project "Compilation and use of geophysical data obtained with finance from the state budget", which was established as a contract between the Ministry of the Environment as client and Geofyzika Co. Brno as contractor, and signed in 2001. On 1 September 2003, the contract ended and most of the key personnel were re-employed by Geofond and the Czech Geological Survey. The work of filling the database continued at Geofond and the Czech Geological Survey, completing the original programme as required under the terms of the project "Compilation and use of the geophysical data obtained with finance from the state budget", and led by Geofond until 2005. This involved work on the registers of geophysical exploration, airborne geophysics, gravimetry, petrophysics, geoelectrical measurements and the register of seismic data, including management and maintenance of geophysical data. In connection with the acquisition of archives of expert reports, maps, and primary seismic and geoelectrical measurements by Geofond, all the documents were inspected and a full record of all materials received was made. The main aim during 2005 was to complete the work stipulated in the agreed 5-year frame of the project. In addition to employees from Geofond and the Czech Geological Survey, experts from Miligal Ltd. and other external subcontractors were involved in the project. Under the terms of the contract, the project was completed by 15 January 2006, and the final report was submitted.

- ***Digitisation of reports available on microfilms and their incorporation in the Digital Archive of Reports of the ČGS-Geofond***

This project arose as a result of reviewing the content of the archive, which was carried out in 2004 under the terms of the project "Beginning the creation of the digital archive of reports for incorporation in the information system of the Czech Geological Survey-Geofond". The main aim of the project is to scan the available microfilms using digital technology. This was determined to be the most effective method of preserving microfilmed reports, which are often of higher quality and sometimes more complete than the available paper reports. This resource consists of black-and-white microfilms mostly of reports on investigations of mineral deposit (indexes P and FZ) obtained together with the paper archive from the former GMS Inc. By 31 December 2005, 72.755 pages from 251 reports were scanned. This is somewhat less than 20% of the estimated total number of reports on microfilms. Of these, 185 reports containing 50.446 pages were completed and incorporated in the Digital Archive. An additional 17 were not finished because colour and large-format appendices remain to be scanned. The work will continue in 2006.

- ***Implementation of map services within the IS of the Czech Geological Survey-Geofond***

Quality topographical map background is an essential requirement for presentation of geological data from the information system of the ČGS-Geofond. For this reason, all available digital map bases within the scope of licence possibilities offered by the Ministry of the Environment were obtained. They were

incorporated in the Geofond database system for use with existing applications. After obtaining a capital grant from the Ministry of the Environment, ESRI (ArcSDE) and Oracle (SDO) tools, including the essential hardware, were purchased and tested. Editing and then incorporation of the map data in the ArcSDE database was begun. The ArcSDE database contains raster data from map series: SMO 1 : 5.000 scale, raster base maps at 1 : 10.000 scale (RZM10) and at 1 : 50.000 scale (RZM50), raster equivalents of army topographic maps at 1 : 50.000 scale (RETM50), at 1 : 100.000 scale (RETM100) and at 1 : 200.000 scale (RETM200) as well as land registry maps (KM) from parts of the territory of the Czech Republic already processed. Due to errors in the files (incorrect co-ordinate system), raster equivalents of topographic maps at 1 : 25.000 scale and 1 : 500.000 scale and source data for a land registry map could not be incorporated in the SDE database.

- ***Transfer of information from surface geophysical surveys into the central relational database of the CGS-Geofond***

The main aim of this project has been to save the wide range of surface geophysical measurements made by exploration and mining organizations in the Czech Republic, one of the most important being DIAMO s.p. (formerly The Czechoslovakian Uranium Industry). This will be stored as classified digital data in the Central Relational Database of ČGS-Geofond. This will permit the data to be integrated with other geological, hydrogeological, geophysical and geochemical data so that correlation with the results of other geological investigations and full interpretation will be possible. The project was approved by the Ministry of the Environment at the end of the year and is proposed for the years 2006 - 2008. In addition to DIAMO s.p., it is presumed that other organizations now holding primary geophysical documentation and final reports will contribute to the comprehensive geophysical database. New projects focused on processing data are planned. Selected organizations will be subcontracted to process data in accord with the rules and conditions defined within this project so that they can be delivered to Geofond.

- ***Updating of geologically documented objects (GDO) and addition of objects with hydrogeological data from old reports archived by the CGS-Geofond to the hydrogeological subsystem (HYD subsystem)– –preparatory phase***

In 2005, the preparatory phase of the project was approved by the Ministry of the Environment. The main aim of this phase was to develop the methodology for the work and to estimate the number of hydrogeological objects in archived reports, suitable for addition to the HYD system, the extent of the updating of the GDO and the number of geological profiles to be annotated. As a result of this preparatory test, the time and personal requirements for processing the data were specified. Based on these results proposals for the next phases of work during the years 2006–2008 were prepared. The project was presented at the XII National Hydrogeological Congress in České Budějovice.

13. Collaboration on projects financed from the state budget by the Ministry of the Environment (Fund for Geological Works, Fund for Studies), and managed by other organizations:

- ***3D Modelling of the basement relief of the Sokolov and Cheb Basins, creation of a file of data from the GDO's in the Geofond CRD for use in digital modelling (led by the Czech Geological Survey)***

The aim of this project is the creation of an interactive 3D model of the surface relief of the crystalline basement beneath the Tertiary sediments and volcanics in the Sokolov and Cheb basins. This will be based on evaluation

and correlation of geological borehole data held by the CGS-Geofond. A user application to enable interactive correlation of new data and that obtained during a preceding science & research project (VaV 630/01/00) with the database of Geologically Documented Objects (GDO) of the CGS-Geofond is being developed. The first year of the project was focused on the compilation and evaluation of data files and the methodology needed for modelling. Based on defined procedures Geofond provided information on 17.116 boreholes (GDO) and 198.696 records of log description (GEO). Of these, 1.590 boreholes penetrated the crystalline basement. Physical samples of drill cores from 48 boreholes are stored by Geofond and available for proposed petrological investigation.

- ***Digitization of borehole geophysical measurements from selected boreholes and their input to the Central Relational Database of Geofond (leader Aquatest Inc.)***
- ***Processing of borehole geophysical measurements from DIAMO s.p. and transferring them to the Central Relational Database of Geofond–Crystalline formations of the South-Western part of Bohemia (leader První Příbramská Ltd.)***
- ***Digitization of borehole geophysical measurements from boreholes made by DIAMO s.p.–Moravia (leader DIAMO s.p., GEAM Dolní Rožínka branch)***
- ***Digitization of geophysical measurements from selected boreholes and their incorporation into to the Central relational database of Geofond (leaderGeofyzika GP Ltd., Ostrava)"***

The first three projects for processing of borehole geophysical measurements were approved in June 2003, when contracts between the project leaders and the Ministry of the Environment were signed for years 2003–2006. The fourth project was approved in June 2004, and the contract between the project leader and the Ministry of the Environment for years 2004–2006 was signed. The participation of Geofond was based on a dedicated supplement to the Geofond budget. As in the previous year, information was provided to enable the identification of particular boreholes for which geophysical logs have been digitally processed and for selection of boreholes giving representative coverage of borehole geophysical data over the territory of the CR. Checks were carried out to avoid the duplication of data processed by different participants. In cases where multiple logs of the same borehole were found, Geofond took the decision on which data to use. The resulting files of digitized geophysical measurements submitted by project participants were reviewed and have subsequently been put into the Central Relational Database of Geofond. The work was co-ordinated in accord with the projects and their amendments. Aquatest Inc. processed a total of 100 boreholes, 1.Příbramská Ltd. processed 226 boreholes, DIAMO s.p. processed 146 boreholes and Geofyzika GP Ltd. processed 41 boreholes. During 2005, data from a total of 513 boreholes were processed as a result of these four projects. As a new supplementary part of the hydrogeological subsystem, technical data on the construction of boreholes, gravel packing etc. for 1.181 hydrogeological objects were added.

- ***Portal of the State Geological Service service (led by the Czech Geological Survey)***

The aim of this project is the construction of the web portal of the state geological service. This will be the entrance to the integrated information centre for geosciences in the Czech Republic. The portal will form the basis for the future more comprehensive portal giving entry to the geology of the Czech Republic. At

first, it will enable virtual integration of the data and information resources held separately by the ČGS and ČGS-Geofond, and later data from other geological institutions in the CR (Academy of Science, universities, museums etc.) will be added. The portal will be a logical component of the environmental information portal under the Ministry of the Environment, based on the Portal of ČGS and existing web services. The portal will grant access to the integrated geological map server of both institutions, based on shared web map services. It will contain shareable geological and purpose-designed maps at various scales with layers of geological data. The main function of the portal of the state geological service will be the provision of up-to-date and comprehensive information to experts, state administration and local councils and to the wider public. The project was started in November 2005. The preparatory stage of work has been to identify problems and define the programme for 2006.

- ***Revision of old mine workings (led by the Czech Geological Survey)***

In 2005 co-operation on the project "Revision of old mine workings in 2005–2007" led by the ČGS was begun. Geofond made some necessary changes to the database of old mine workings. New entries were added and new forms and printed lists were prepared. Information concerning specific localities was given to the staff of the ČGS responsible for this project. The incorporation of the revised data concerning old mine workings is proposed for the beginning of 2006.

14. Participation in the project "e-EARTH Electronic access to geological data from borehole databases" (as a part of the EC e-Content programme)

The project was submitted in March 2003 by a consortium of eight organizations from seven European countries as a contribution to the e-Content programme under the 3rd Call, Action Line 1.2. (European Commission, Information Society, Directorate-General, Luxembourg). The project was approved at the beginning of 2004 and the contract between the co-ordinator of the project NITG-TNO (NL) and the European Commission (EC) was signed on 27 February 2004. The planned duration of the project was 18 months, from 1 March 2004 until 31 August 2005. In accord with the rules of the e-Content programme, the costs of the project were financed partly from the resources of EU (50%) and partly from the resources of the participating organizations (50%). To cover the Czech part of the budget, the necessary resources were transferred to Geofond by the Ministry of the Environment under the terms of the contract and subject to completion of the programme of work. Besides the Co-ordinating Institution (TNO-NITG, NL), the other members of the consortium were the British Geological Survey (BGS, UK), the German Geological Survey (BGR, DE), the Lithuanian Geological Survey (LTG, LT), the Polish Geological Survey (PGI, PL), the Czech Geological Survey-Geofond (Geofond, CZ) and two commercial organizations: Geodan Mobile Solutions (NL) and Golder Associates (IT). The project consisted of eleven main workpackages (WP1-WP11) undertaken during the three main stages of the project: Inventory and Definition Stage (1st–9th month of the project), Implementation and Testing Stage (10th–15th month of the project) and Marketing, Extending the Implementation and Demonstration of the Results (16th-18th month of the project). In 2004, stage 1 was completed. This consisted of WP1 (Project Management), WP2 (Legal Implications), WP3 (Inventory of best Practices in the Management of National Borehole Data), WP4 (Comparison of Standards and Structure) and WP5 (Technical Design). All these WPs were completed, including the submission of interim reports. In 2005, Stage 2 consisting of

WP6 (Multilingual Thesaurus) for which Geofond was responsible, WP7 (Implementation at three of the Geological Survey sites), WP8 (Advanced (Mobile) Data Communication) and WP9 (Testing and Documentation) and Stage 3 WP10 (Implementation in the EU-candidate Countries, based on low-cost open-source software solutions) was completed. WP11 (Awareness and Dissemination) was also completed. Geofond was the leader of WP6 and made contributions to most of the other workpackages (with the exception of WP8 and WP10). All workpackages were fulfilled by submission of the required WP reports (Deliverables). The 2004 stage was fulfilled by submission of the "9 Month Progress Report", which was the basis for the evaluation of the project at the Mid Term Review Meeting in Luxembourg on 3 February 2005. All results of the project achieved by then were approved and highly rated, the proposed plans for further work during the next period were approved and the second payment was confirmed. However, this payment was significantly delayed, being made almost at the end of the project. The Final Report on the project was submitted to the EC on 30 September 2005, in accord with the terms of the Contract. The Report and all results of the project were approved and highly rated by the EC at the Final Review Meeting in Luxembourg on 15 November 2005.

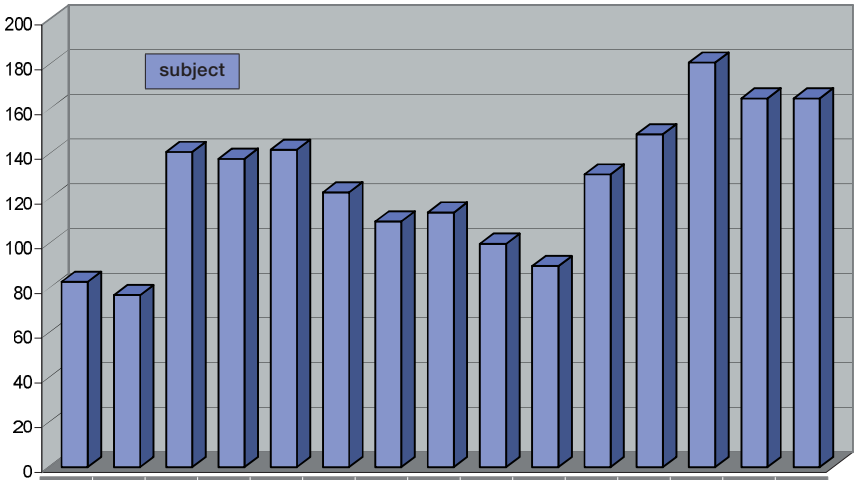
The most important result of the project is unified access to the borehole databases of six European geological surveys (the United Kingdom, the Netherlands, Germany, Poland, Lithuania and the Czech Republic) in seven languages (with the additional of Italian). This is located at the web page http://www.eearth.nl/ and for some countries the possibility of access to detailed information on a paid basis is available. In the Czech Republic, access is based on the credit system introduced by Geofond. For this purpose a new borehole selection and display application was developed. The Multilingual Thesaurus, initially designed as a simple tool, has been further developed by Geofond. By enlargement and incorporation of additional languages this may become the basis for a truly European geological thesaurus. For Geofond, eEarth was the first international project undertaken as one of an integrated team of EU members. After the Czech Republic entered the EU, Geofond became a full member of the consortium, together with the other participants from former "candidate countries". This brought many advantages, but also certain problems. The main problems arose because of conflicts between the regulations governing the eContent programme and the rules under which a state organization of the CR is obliged to operate. In addition to the valuable experience gained through the eEarth project, the information system of Geofond was rated in comparison with the other European geological surveys as one of the best, both as regards the high quality and quantity of detailed information available, and also with respect to the technical integration and high standard of presentation. This has led to invitations for Geofond to join newly established consortia preparing new project proposals for the eContentPlus programme. Unfortunately, most of these proposals were not approved for support by the Ministry of the Environment, but Geofond was finally able to confirm that it would participate in one of them, eWater, which was submitted to the EC for approval in November 2005.

2. INFORMATION SYSTEMS

PRESERVATION OF, AND MAINTAINING ACCESS TO, THE RESULTS OF GEOLOGICAL WORKS

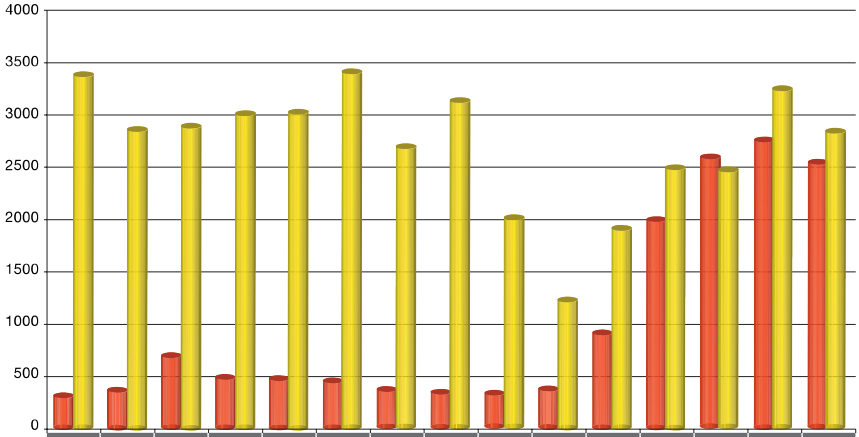
This task is undertaken in accord with §12 of Law No. 62/1988 Coll., on Geological Works, and all amendments. In 2005, 3.360 reports and manuscripts were handed over to Geofond. Of these, 2.935 were new documents submitted by persons or by organizations in accord with the above law. There were 429 items fewer than in 2004. Of these, 3.324 were reports of category "P", 19 of category "FZ", and 17 of category "ZC" (foreign travel reports). The remaining 425 reports were taken from the project: "Completion of the Documentographic information subsystem in 2003–2006".

Number of organizations and persons handing over the results of geological works



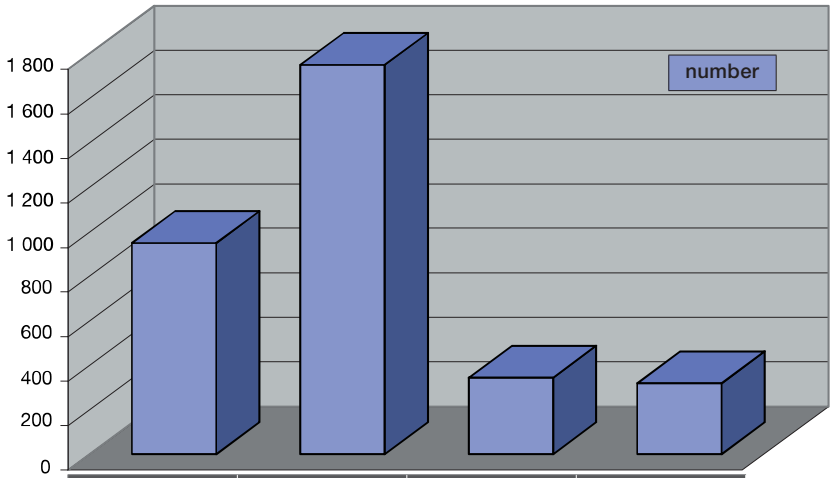
1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
83	77	141	138	142	123	110	114	100	90	131	149	181	165	165

Comparison of number of filing (before 2000 registration) with increment of new reports



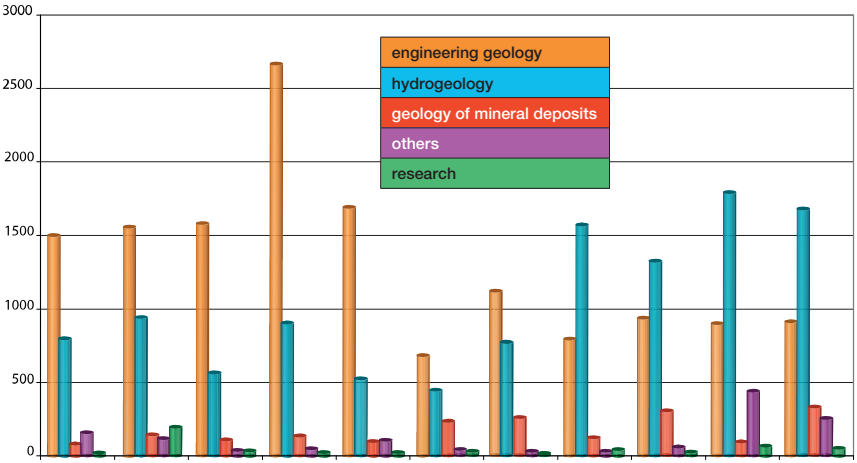
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
filing	315	376	713	498	489	463	370	346	330	381	941	2069	2680	2859	2631
increment	3508	2971	3003	3122	3143	3536	2786	3249	2077	1273	1981	2588	2553	3364	2935

Categories of reports acquired by Geofond in 2005



Engineering geology 28.3	Hydrogeology 52	Mineral deposits 10.2	Other 9.5
949	1 748	344	319

Increments in number of reports and files in selected categories



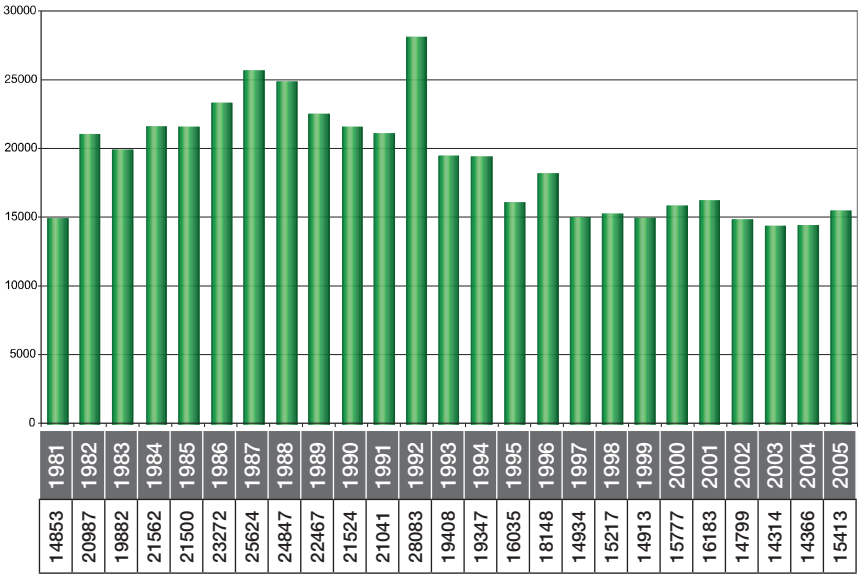
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
engineering geology	1561	1624	1646	2778	1760	713	1166	826	976	938	949
hydrogeology	830	982	586	943	546	463	803	1635	1378	1866	1748
geology of mineral deposits	87	151	114	143	102	244	271	131	318	98	344
others	164	125	43	55	112	44	33	37	62	457	263
research	25	202	38	27	28	33	17	49	28	72	56

By the end of 2005, 3.869 reports had been received and documentographically processed for inclusion in the Geofond archive. The 445 new reports received at the end of 2005 will be processed during the first months of 2006. In 2005, the total number of reports put into the Geofond archive was 438 more than in 2004.

In 2005, 406 visitors used the study room service, making a total of 2.727 separate visits. In total, 15.413 reports and 1.873 maps were consulted.

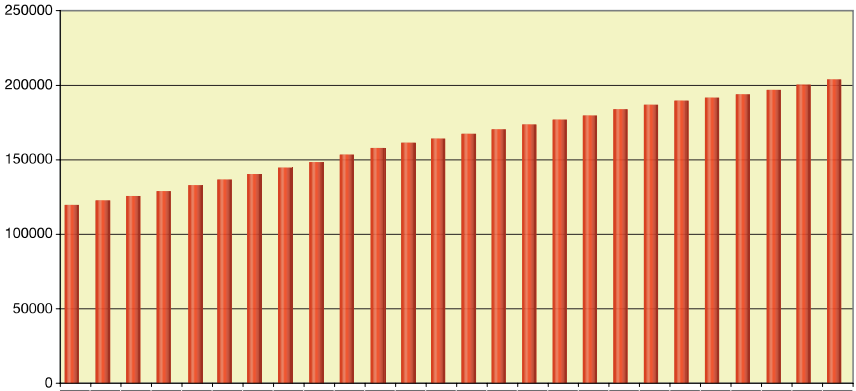
Compared to 2004, the number of individual visits was 115 less, the number of loans of maps decreased by 689 and the number of reports loaned increased by 1.047. The decrease in the number of visits is believed to be due to the increasing ease of access to basic information via the internet.

Number of loaned reports



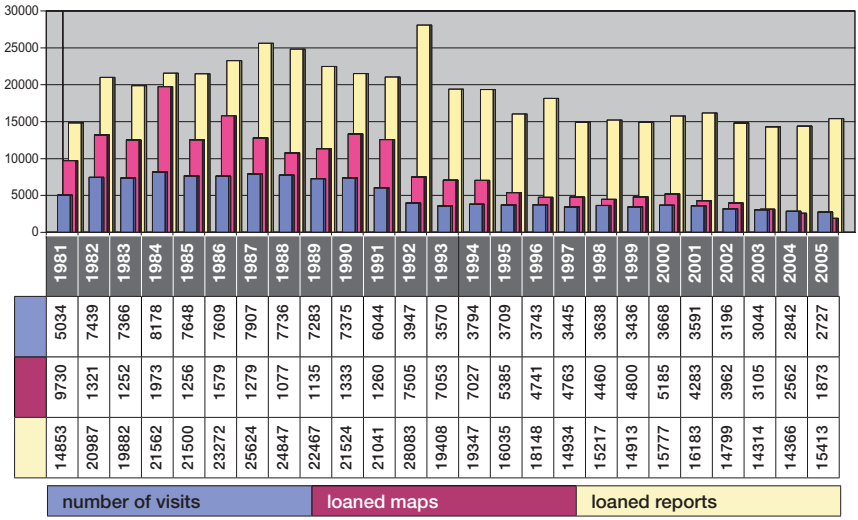
1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
14853	20987	19882	21562	21500	23272	25624	24847	22467	21524	21041	28083	19408	19347	16035	18148	14934	15217	14913	15777	16183	14799	14314	14366	15413

Numbers of archived reports and files (1980–2005)



1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
119809	122839	125807	128987	133005	136636	140471	144782	148364	153320	157823	161331	164252	167305	170427	173570	176981	179767	184001	186869	189733	191602	193988	196808	200349	203868

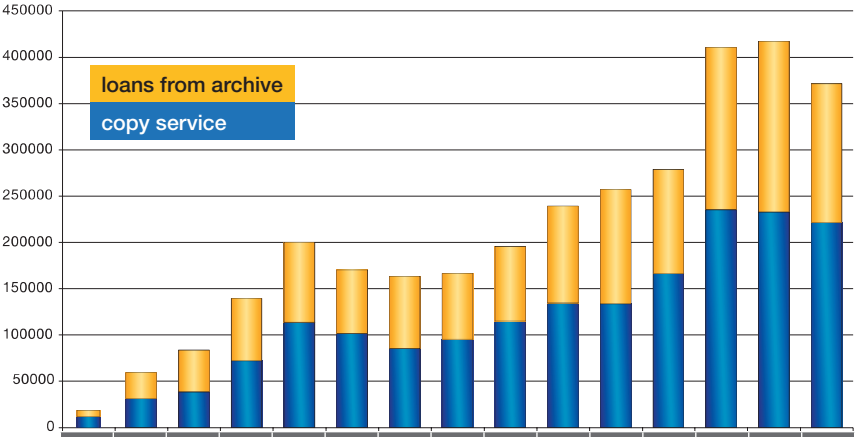
Activity of the loan service (1981–2005)



	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
number of visits	5034	7439	7366	8178	7648	7609	7907	7736	7283	7375	6044	3947	3570	3794	3709	3743	3445	3638	3436	3668	3591	3196	3044	2842	2727
loaned maps	9730	1321	1252	1973	1256	1579	1279	1077	1135	1333	1260	7505	7053	7027	5385	4741	4763	4460	4800	5185	4283	3962	3105	2562	1873
loaned reports	14853	20987	19882	21562	21500	23272	25624	24847	22467	21524	21041	28083	19408	19347	16035	18148	14934	15217	14913	15777	16183	14799	14314	14366	15413

In 1992 the procedure for counting loans and visitors was changed

Development of the paid loan service (in CZK) (introduced since 1991)



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
loans from archive	11772	27849	45319	67541	86855	68715	78531	70940	80873	105170	123619	112310	175513	184513	149891
copy service	6893	31265	38415	71885	113337	101444	84940	95342	114750	134163	133413	166368	235146	232730	221613

Summary of activities of the Material Documentation Unit

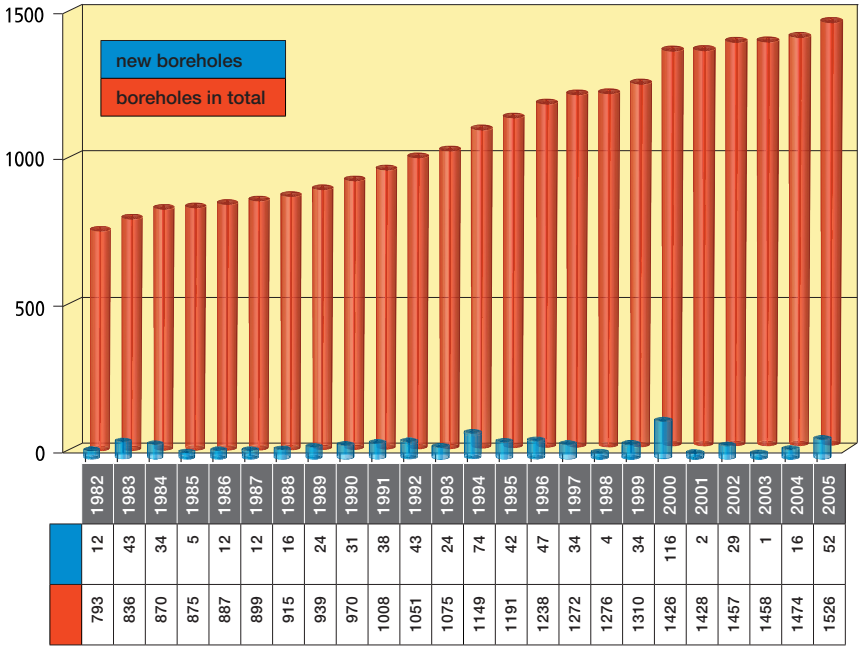
In 2005 the core from 1 borehole drilled by Sokolovská uhelná Inc. in the area of Nové Sedlo was acquired for permanent storage. The core from one borehole of those formerly acquired from the Zlaté Hory area was incorporated. Samples from the archive of Dr. Jindřich Vodička taken from 50 boreholes drilled during the years 1944 to 1969 in the area of the Czech Cretaceous Basin were processed for permanent storage.

During the year, core from 57 boreholes acquired was stored. Simultaneously, transfer of core specimens from the original field boxes to unified storage in boxes of the CH-I type continued. Cores from 8 boreholes were transferred.

As of 31 December 2005, the number of objects in storage was 1.526 (mainly drill cores). Of these, 1.399 have been permanently stored in 8.490 CH-I boxes, while the remaining cores are still in their original boxes. Of the total number of boxes containing heavy mineral samples acquired from the archive of Geomindružstvo Jihlava, 400 boxes were placed in permanent storage. Work continues on the remaining boxes.

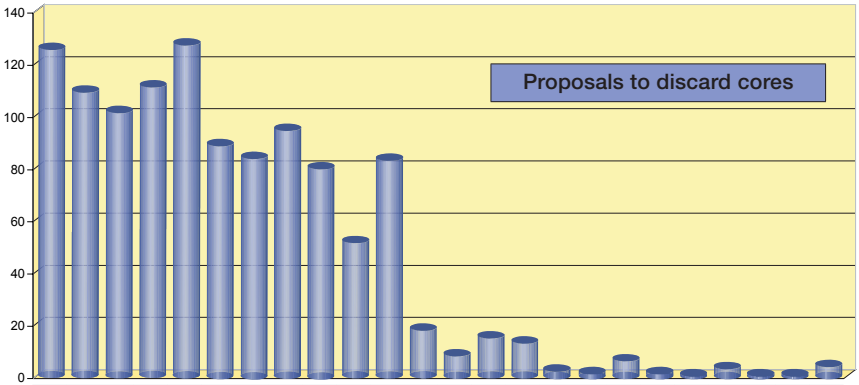
In 2005, archived core material was used by 2 researchers. During 4 visits, material from 11 boreholes was studied and 29 samples were taken. These were taken from the collection of samples from mines in the Libčice area for the Faculty of Science, Charles University. Samples of boreholes from 5 other places were taken by private individuals for publication purposes.

Number of boreholes with material documentation acquired by Geofond



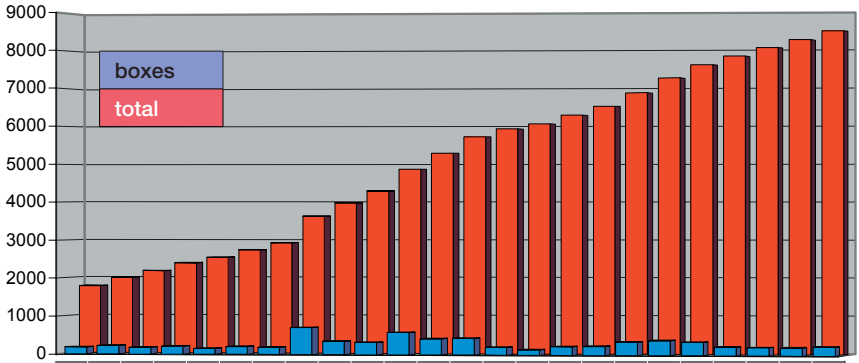
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	12	43	34	5	12	12	16	24	31	38	43	24	74	42	47	34	4	34	116	2	29	1	16	52
	793	836	870	875	887	899	915	939	970	1008	1051	1075	1149	1191	1238	1272	1276	1310	1426	1428	1457	1458	1474	1526

Proposals to discard cores (1982–2005)



1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
131	114	106	116	133	93	88	99	84	54	87	19	9	16	14	3	2	7	2	1	4	1	1	4

Number of filled boxes (1982–2005)



	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	181	221	173	209	149	201	187	706	347	320	579	420	435	200	138	224	234	350	388	344	229	216	209	231
	1780	2001	2174	2383	2532	2733	2920	3626	3973	4293	4872	5292	5727	5927	6065	6289	6523	6873	7261	7605	7834	8050	8259	8490

The Centre for Documentation of Gold Deposits at the Regional Museum in Jílové u Prahy gathers geological documents and original sample material from exploration and mining works at gold deposits in the Czech Republic. The collection includes samples of minerals, ores and host rocks with alteration types, selected segments of drill core (halved cores), thin sections of rocks and veins, and polished sections of gangue and ore minerals. The collection also includes original geological reports and geological maps, and especially old maps of gold-bearing districts. The material has been classified according to locality and comprises 5.500 samples of minerals, ores and rocks, 2.000 thin sections and 400 polished sections.

In addition to work undertaken on the project "Completion of the Documentographic Information Subsystem in 2003–2006", a selection of material used for investigating the safety of the old mine workings in Jílovské pásmo (for DIAMO s.p., SUL o.z. Příbram) and of the Antonín Paduánský Shaft in Kocourkovské pásmo and of the New Halířov Shaft (for the Regional Museum in Jílové u Prahy) was provided. In addition, a selection of documents was provided for the court expert Ing. J.Růžička to enable the compilation of a report on undermining in the Pepř u Jílového area.

Creation, updating and use of databases in the Information System

Systematic filing and updating of data concerning geological conditions and ground water resources in the territory of the Czech Republic is carried out under the terms of §17 of Law No. 62/1988 Coll., on Geological Works, and all amendments.

The Documentographic Information System

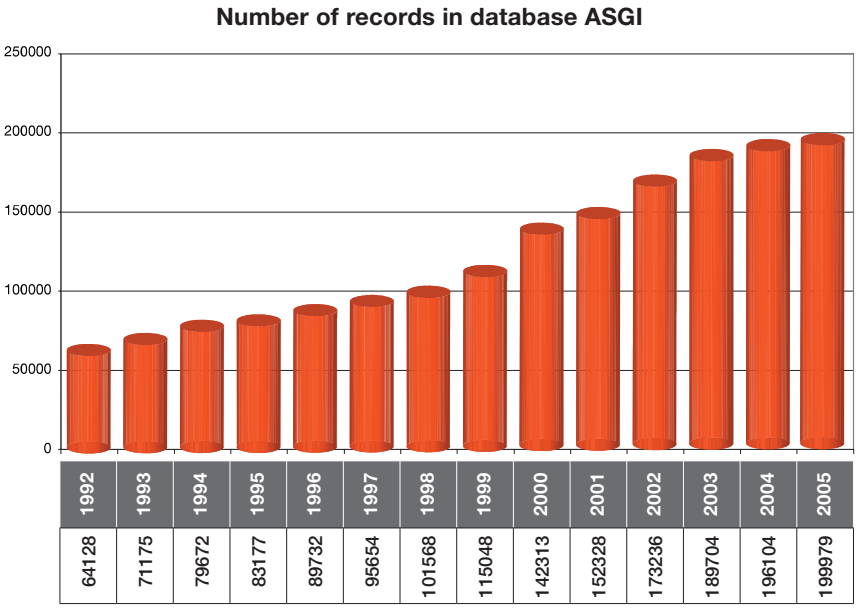
Compilation of an **ASGI documentographic database** that is used as a digital card index for searches for reports and other geological information is a part of the system used routinely for storing and ensuring access to the results of geological work and documentation.

In 2005, 3.876 new documentographic records were added. Of these, 3.875 new records originated from newly acquired reports (3.851 coded as "P", 24 coded as "FZ") and 1 from reports already archived (coded as "P"); 5 duplicated records were deleted (4 coded as "P" and 1 coded as "V").

As of 31 December 2005, the ASGI database contained, in all, 199.975 records (109.990 coded as "GF P" (reports), 3.538 coded as "GF FZ" (records of mineral deposits), 10.383 coded as "GF ZC" (foreign travel), 72.711 coded as "GF V" (boreholes), 7.598 coded as "GF MS" (shallow pits), 349 coded as "GF KT" (down-hole geophysical logs), 1.319 coded as "CGU" (reports from the Czech Geological Survey archive), 1.709 coded as "ITG" (reports from the Intergeo archive), 1.162 coded as "DIAMO" (reports from archives of the uranium exploration organizations), 377 coded as "RDP" (reports from archives of Rudné doly Příbram), 900 coded as "MND" (reports from the archive of Moravské naftové doly), 1.674 coded as "SG" (reports from the archives of Stavební geologie), 134 coded as "JIL" (reports from archives of Středisko dokumentace ložisek zlata v Jílovém), 202 coded as "UNIG" (reports from archives of Unigeo Ostrava) and 11 coded as "UVR" (reports from archives of Ústav pro výzkum rud). The number of items entered in the database is 12.082 less than the total of listed entries.

This is because duplicate listings (P+V, P+FZ) and multiple listings (V) have been made in certain cases.

In 2005, a total of 4 searches containing 1.150 records were made for external users.



The Factographic Information System

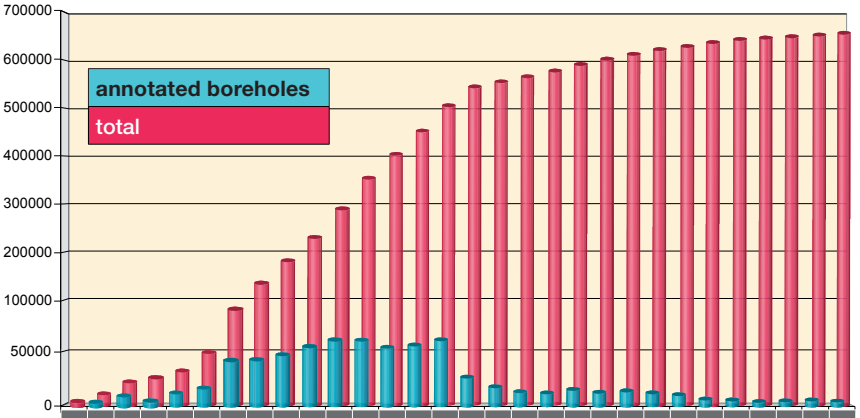
Database of boreholes and other geologically documented objects

Annotation of new drilling was made both by permanent staff at Geofond and by external contractors. In total, 4.537 boreholes were coded. After formal and factual revision, 4.006 boreholes, compiled from 2.050 reports, were added to the Central Information System. A total of 45 objects from 25 reports from the archives acquired from other organizations were also processed.

By 31 December 2005, a total of 639.808 boreholes were in the database, including 7.484 boreholes without geological log descriptions in the archives of Geofond. This is 19.494 less than were originally entered; some were removed because of duplication and others because the quality of the geological logs was not acceptable.

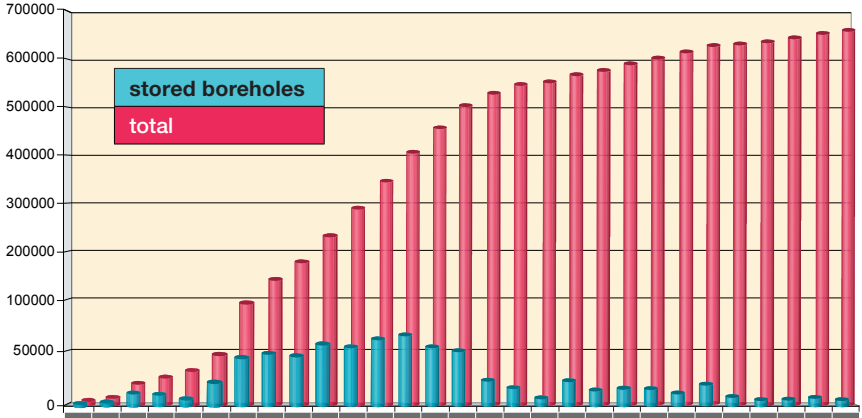
The significant decrease in the numbers of borehole records annotated and stored after 1990 was because the borehole archive was nearly complete by this stage. A further decrease is evident in the number of reports acquired by Geofond since 1998, this being due to the reduction in the number of geological investigations since this time.

Number of annotated boreholes (1976–2005)



	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	0	4803	8257	5098	9147	13840	42331	43782	48812	51819	60378	60089	52243	54285	58927	24926	14107	11872	9701	12725	10647	11138	8692	7718	5753	5019	4559	4354	5364	4537
	4055	8858	17115	22213	31360	45200	87531	131313	180125	231944	292322	352411	404654	458939	517866	542792	556899	568771	578472	591197	601844	612982	621674	629392	635145	640164	644723	649077	654441	658978

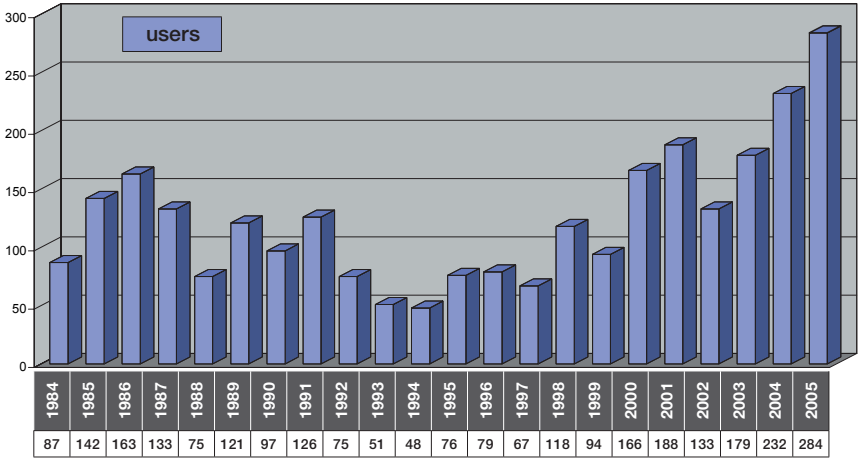
Number of stored boreholes (1977–2005)



	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	2095	3059	10639	8220	5816	17167	43351	47898	46556	53906	52414	55124	60200	50713	48971	21706	14618	6725	20679	11953	13628	13383	9724	15955	6291	3805	4786	5917	4006
	2095	5154	15793	24013	29829	46996	90347	138245	184801	238704	291118	346242	406442	457155	506126	527832	542450	549175	569854	581807	595435	608818	618542	634497	640788	644593	649379	655296	659302

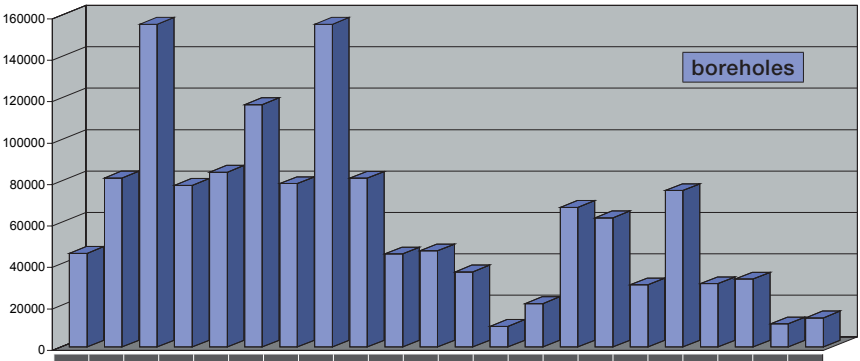
There was an increase of interest in the borehole database during 2005 as compared to the previous year. Requests for information increased from 232 in 2004 to 284 in 2005 (5 requests from the Czech Geological Survey, 2 from the Academy of Science, 11 for diploma works and other educational purposes, and 266 from private organizations and individuals). That is, 52 more requests.

Number of users of the borehole database (1984–2005)



1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
87	142	163	133	75	121	97	126	75	51	48	76	79	67	118	94	166	188	133	179	232	284

Number of borehole records provided for users (1984–2005)



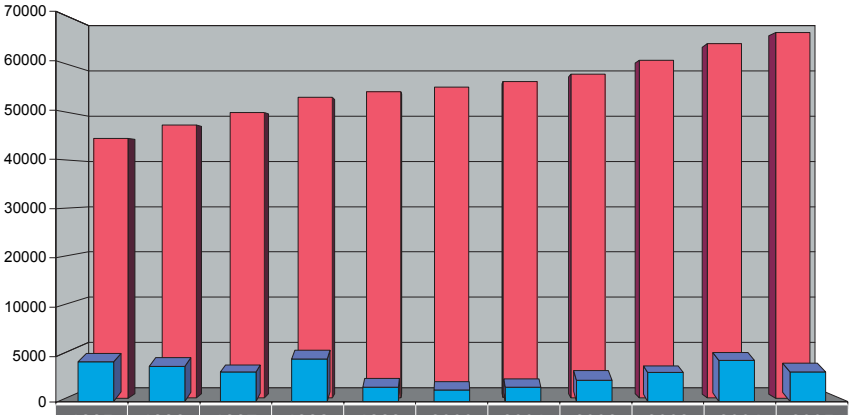
1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
45144	81554	155739	77960	84435	116978	78919	155710	81472	44922	46391	36180	10009	20972	67311	62293	29978	75449	30516	32812	11162	14044

Database of hydrogeological objects

In 2005, a total of 2.460 objects (boreholes, wells and springs) were entered in this database. Of these, 557 objects were from archived reports and 1.903 from new reports. By the 31 December 2005, the database contained 67.450 objects. A specialized database of potential geothermal energy sources also forms part of this database (1.248 objects). It contains 900 records of thermal waters, for which the measured temperatures were higher than 20°C, and 348 production boreholes for extraction of crude oil and gas. The specialised database of objects relating to anthropogenic impact on groundwater now contains 9.317 test wells, 1.220 remedial wells and 4.778 monitoring wells.

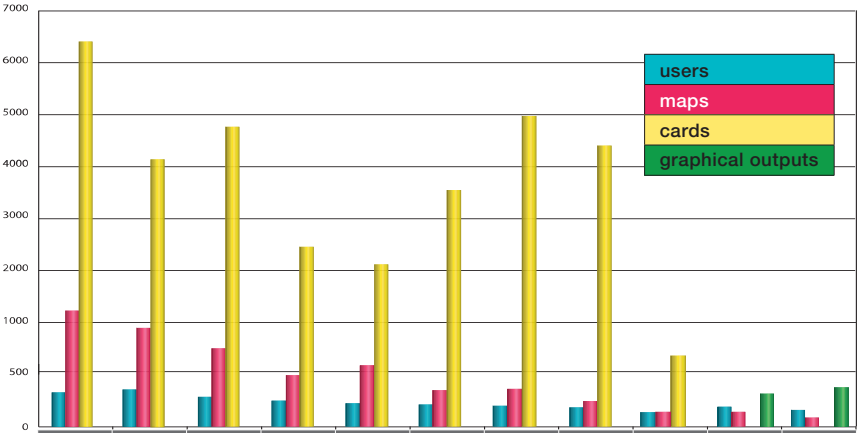
In 2005, 78 maps at a scale of 1 : 25 000 showing the locations of hydrogeological objects were loaned to 140 customers. Hydrogeological data on 34.694 objects were provided to 90 users in the agreed form and content. Of these, 20 requests were from the Czech Geological Survey, 3 from regional councils, 5 from local authorities, 15 for educational purposes and 47 from private organizations and individuals. The diagram shows that searches using the classical card index have decreased while use of digital outputs from the database have increased. Since 2004 the classical card index serves only for internal purposes of CGS-Geofond and users can obtain only outputs from the database and maps. The number of graphical outputs provided for users from the database increased from 302 in 2004 to 342 in 2005.

Entries to the database of hydrogeological objects (1995–2005)



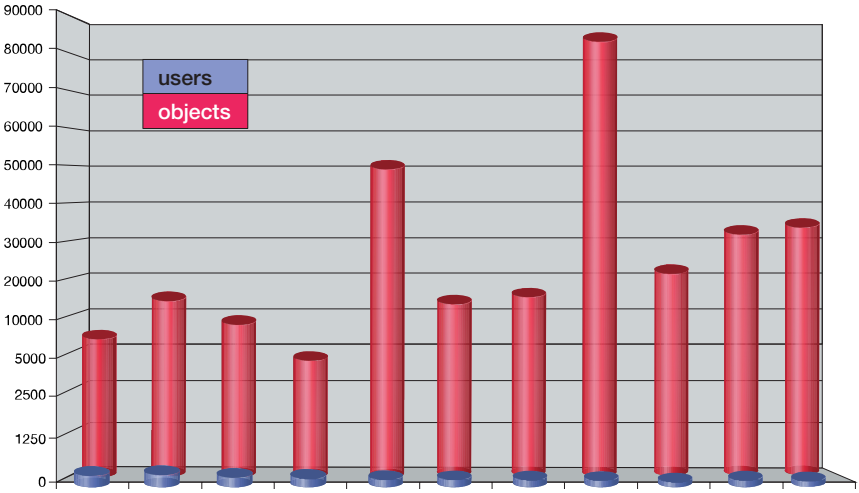
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
input objects	3074	2912	2691	3221	1235	1059	1228	1558	2982	3498	2460
total	44801	47659	50345	53526	54739	55755	56967	58511	61493	64990	67450

Use of the card-index of hydrogeological objects (1995–2005)



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	292	316	254	239	208	202	196	166	122	173	140
	1224	951	738	474	564	327	363	224	123	123	78
	6395	4166	4804	2409	2135	3528	4978	4339	645	302	342

Use of the database of hydrogeological objects (1995–2005)



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	292	316	254	239	208	202	196	166	122	173	140
	7177	14798	9687	4778	54847	14842	16256	88104	22859	34159	34694

Database of borehole geophysical measurements

The creation of this database was started in 1999 under the terms of the project: "Comprehensive Information System of Geofond CR". During the period 1999–2002, the first borehole geophysical and inclinometric measurements were processed. The boreholes were selected from original reports on structural, hydrogeological and exploration drilling for black coal made by the former Geophysical Logging Centre Tuchlovice and acquired from the GMS archive. Geophysical logs made by the former Liberec Uranium Exploration, Hamr Uranium Mines, and other organizations working in the Czech Cretaceous Basin were also checked and digitized. The data were processed under contract by Aquatest and DIAMO s.p. Files of old data, processed in 1995 by GMS, Aquatest and Geotrend by order of the Ministry of Economy and Trade, were also incorporated. Subsequently, measurements from boreholes in the Vídeňská basin and the Carpathian foredeep were acquired from Moravské naftové doly Inc. Hodonín.

In 2003, three 4-year projects were started with the main aim of processing borehole geophysical logs from other sources and putting them into the Central Relational Database. These were data from measurements made by the former uranium exploration branch UP-IV Nové Město na Moravě (Moravian area-Rožínka), compiled by Diamo s.p., and from the former Liberec UP (Uranium Exploration), Branch VIII Příbram (Crystalline Terrain of South-West Bohemia), processed by 1.Příbramská Ltd. Also, other boreholes from archives of the former GMS made for hydrogeological purposes and investigation of non-metallic resources were processed by Aquatest Inc. In 2004, a project proposed in co-operation with Geofyzika GP Ltd. was started. This project is focused on digitizing and incorporating data from boreholes drilled in North Moravia, financed in the past from the state budget. By 31 December 2005, after corrections and deletion of duplications, the database contained logs of geophysical data from 3.667 boreholes and inclinometric measurements from 2.619 boreholes.

There were no requests for information from this database during 2005.

Database of geological specimens (diamond drill core, samples)

In 2005, the integration of the database of geological specimens within the subsystem of geologically documented objects continued, 51 new boreholes were incorporated. The total number of boreholes for which samples of core are stored and the records integrated into the subsystem was increased to 1.445. The information on the existence of core samples from specific boreholes is part of the basic information about objects available through the web application for borehole investigations.

Database of regional hydrogeological investigations

In recent years, regional hydrogeological investigations have been minimal, so that only archived reports have been put into the database. By the 31 December 2005, the database contained 649 outlines of areas taken from 670 reports for which the reserves of drinking water were calculated in the past. New calculations of usable reserves of drinking water were made. For 15 areas the results were in the category "A", for 62 in the category "B", for 82 in the category C1 and for 85 in the category C2. In 2005 there was one request from a local authority for data from 2 localities which was processed to the required output.

Database of radiometric anomalies

This database contains information on radiometric anomalies measured during exploration for uranium by the former ČSUP (Czechoslovak Uranium Explorations). Data from Cretaceous sediments and boreholes in mineral deposits were not included. In 2005, the database was not updated. There were no requests for information from this database in 2005. By 31 December 2005, the database contained 16.203 objects.

Database of radiometrically anomalous areas

Maps of radiometrically anomalous areas show the effects of radiation over designated regions. The surveyed areas are classified into three categories with respect to radiation. These are, respectively, areas with high, middle and low radio-ecological effects. In 2005, the database was not updated. By 31 December 2005 the database contained 3.420 objects. A request from 1 user was fulfilled, in which data on 24 objects were processed to the required output.

Database of radiometric investigations

This database contains information on radiometric mapping and shows the boundaries of areas where surveys for radioactive materials have been carried out using various methods. In 2004, a revision of the database was made. The areas depicted on the internet application of Geofond as polygons on maps at 1 : 100 000 scale (otherwise at 1 : 50 000 and 1 : 200 000 scales) were compared with the original maps during this revision. By 31 December 2005, the database contained 466 objects. There were no requests for information from this database during 2005.

Database of landslides and other dangerous slope deformations

Regular updates continued during 2005, and data from 17 expert reports were processed. Priority was given to processing reports made by the Czech Geological Survey and the Academy of Science of the Czech Republic on mapping of landslides and slope deformation in North Moravia, where the majority of these geological features have been recorded. There were 242 new objects put into the database, while information on 95 objects was amended. In all, by the 31 December 2005, the database contained 7.662 objects. In 2005, 15 expert opinions on specific localities or areas were given by the Risk Assessment Unit in Kutná Hora. A total of 38 requests for information were processed. The outputs contained basic information on 21.863 objects. (1 request from the Ministry of Economy and Trade, 1 from the Czech Geological Survey, 1 from the Academy of Science, 3 for educational purposes, 3 from the regional councils, 10 from local councils and 19 from individuals and private organizations).

Database of undermined areas

In 2005, a major update of the database has continued at the Kutná Hora Office. Changes of outlines of undermined areas were made with reference to the database of main mine workings using Geomedia (Intergraph) software. Particular attention was given to the processing of information from the Moravian regions. The database was continuously updated and 188 new objects from 265 expert reports and assessments were added, 44 objects were deleted and 363 polygons were updated. As of 31 December 2005, the database contained 5.365

objects. In 2005, a total of 118 expert opinions giving details of the state of undermining at particular localities or over wider areas were compiled by the Risk Assessment Unit in Kutná Hora. A total of 44 requests were dealt with in which information on 11.838 objects was processed (the Ministry of Economy and Trade–1, CGS–2, universities–1, regional councils–1, local authorities–12, private companies and individuals–27).

Database of main mine workings

In 2005 the filling of this database has continued under the terms of the project "Database of Main Mine Workings II". During 2005, 273 objects were collected and added to the database. This involved updating and completing data sheets, including photodocumentation, from the area of Prague 8, 9 and 14 (mining operations in chalk sediments around Prosek) and from the Zlaté Hory mining district in Jeseníky. During this work, 96 duplications were found and removed from the database. As of 31 December 2005, this database contained 14.595 objects. Information from this database is mainly used during the inspection of mine workings in accord with §35 of the Mining Law, for the purpose of local planning, and for improving the knowledge of undermined areas.

Database of mine waste dumps

In 2005, the compilation of this database continued under the terms of the project "Database of mine waste dumps II". A total of 422 objects from the Krušné Hory were added to the database. These were collected paricularly from the areas surrounding Moldava and Luby. Records from the Plzeň area should be approved by the Ministry of the Environment and added to the database in 2006. As of 31 December 2005, this database contained 1.851 objects. Information from this database was only accessible in the form of signal information through the Internet in 2005. Interest in these data is expected to increase when more objects are incorporated and the area covered by this survey is enlarged.

Database of areas affected by the exploitation of mineral resources

Data on areas affected by the exploitation of mineral resources form part of the State Statistical Statement "Hor(MPO)1-01", technical information on mining operations. The data concerns mining claims and registered non-exclusive mineral deposits. Since 1999, the data have been continuously monitored and updated every year. As the information in this database is confidential, only summaries are given as outputs. Complete data are circulated to organizations selected by the Ministry of Industry and Commerce.

In 2005, data relating to 899 mining claims and 231 registered non-exclusive mineral deposits were listed and used by the following users:

- Ministry of Agriculture: comprehensive outputs from "Hor (MPO)1-01" covering the whole CR with information on areas affected by the exploitation of mineral resources, and on areas where recultivation is in progress or already completed.
- Czech Agency for Nature Conservation and Landscape Protection: for the compilation of a report on the environment in CR with data on areas in the territory of the Czech Republic affected by the exploitation of mineral resources, or where recultivation is in progress or already completed.

• CENIA: outputs from "Hor (MPO)1-01" for the annual report of the Ministry of the Environment with information on areas affected by the exploitation of mineral resources, and areas where recultivation is in progress or already completed within the mining claims and also outside them, and a summary of information on the total area of the Czech Republic affected and sub-totals for each of the Czech Regions.

Database of historical mining maps

A collection of more than 9.000 mining maps is stored at the Kutná Hora Branch of the Czech Geological Survey - Geofond. These form parts of separate special collections. Since 1990, references to these maps have been entered into a database.

In 2005, progressive updating of the database continued with the correction of existing information and addition of new records. A total of 1.472 records were put into the database and 246 new maps were added. By 31 December 2005 the database contained records of 9.590 mining maps. In 2005, searches on particular mining maps requested by 32 users were undertaken at the Kutná Hora Branch. In total, 361 archive maps were used.

Database "Library of the Kutná Hora Branch"

The specialist library located at the Kutná Hora Branch contains more than 7.000 publications and other historical documents related to mining, technology and the geological sciences. Since 1992, the information on this resource has been entered in the database. By 31 December 2005 the database contained records of 7.025 publications. In 2005, the database was used only internally to assist the updating of information on undermined areas. Searches for publications for visitors to the branch were also undertaken.

Information System on Raw Materials (SurIS)

All available data on the raw materials potential of the CR is gathered and comprehensively presented in this information system. All sub-databases were continuously updated during 2005. By 31 December 2005, the system contained:

• **Register of mineral deposits:** *9.466 objects*, of which:

1.560 are exclusive (state-controlled) deposits with calculated reserves (Subregister B)

752 are non-exclusive registered deposits (Subregister D)

810 are other non-registered deposits (Subregister N–deposits of exclusive and non-exclusive minerals, that are not included in the Register of reserves, but which do have calculated reserves in any category). Mostly these are smaller deposits of non-exclusive minerals for which the calculations of reserves were not approved, so they do not appear in Subregister D. There are also former exclusive (state-controlled) deposits that were excluded from the Register of reserves for a specific reason, also chiefly because calculations of their reserves were not approved. Mostly, these "deposits" are not viable under present economic conditions but, because they have historically calculated reserves that have not yet been extracted, they were not included in subregisters V, Z or U.

206 are approved prognostic (hypothetical) resources (Subregisters P, R)

1.072 are other prognostic resources (Subregister Q–other registered prognostic sources)

1.409 are areas for which the results of exploration were negative, or areas which were not prospective or with sub-economic mineral occurrences, and areas where exploration revealed industrial minerals in sub-economic amounts. In accord with §4 of Mining Law (Subregister V) these are not approved as mineral deposits

3.610 are cancelled or abandoned deposits (Subregisters Z and U).

In 2005, 49 new records were entered and 2.120 were updated.

- **Register of protected areas of mineral deposits (CHLU)**

In total this register contains 1.328 objects of which 39 were added and 58 updated in 2005.

- **Register of mining claims (permits delineating mining operations-DP)**

In total this contains 1.293 objects of which 12 were added and 496 updated in 2005.

- **Register of preliminary permits delineating mining operations (PS DP)**

In total this contains 732 objects of which 21 were added and 91 updated in 2005.

- **Register of exploration areas and projects (PÚ)**

In total this contains details of 574 sites of which 25 were added and 78 updated in 2005.

- **Register of graphical objects (GO)**

This register is common for all sub-registers. In total it contains 15.767 objects. In 2005, 172 new graphical objects were added, 11 removed and 477 updated.

- **Economic register (ER)**

This contains data on prices of the main mineral commodities in the domestic and world markets, and on the value and volume of foreign trade in raw materials.

- **Administrative registers**
  - ***Register of companies***

This database contains information on 2.938 organizations undertaking geological work, exploration for mineral resources and mining (including those no longer in existence). In 2005, 28 new companies were added and data on 757 companies were revised using public sources of information and statistical statements. Names and registration numbers, together with other general information on existing organizations, are listed in accord with the Trade and Business Register.

  - ***Register of decisions governing approval and depreciation of reserves***

In 2005, existing files concerning approvals of reserves made by the Committee for Classification of Reserves (KKZ) were updated, the entering of approvals by the Ministry of Economy and Trade for the depreciation of reserves has begun, and new reports approved by the Committee for Projects and Final Reports (KPZ) were entered–in total 404. By 31 December 2005 this database contained information on 4.068 approved or depreciated reserves.

In 2005, a total of 62 requests were dealt with and information on 17.788 mineral deposits, 4.955 mining claims and 4.632 protected areas of mineral deposits was supplied (the Ministry of the Environment–1, the Ministry of Economy and Trade–1, Ministry of Agriculture–1, CGS–1, universities–2, regional councils–3, municipalities–12, private companies and individuals–41). In

fulfilling 17 requests, data on 5.049 exploration areas and projects were supplied (Ministry of the Environment–1, the Ministry of Economy and Trade–1, Ministry of Agriculture–1, CGS–1, regional councils–2, municipalities–1, universities–1, private companies–9).

Subsystem of geophysical and geochemical data

Most parts of this subsystem were created externally as specialised databases. Data were compiled or maintained under the terms of particular projects, financed and contracted by the Ministry of the Environment. In 1997, Geofond was appointed by the Geological Department of the Ministry of the Environment to supervise the compilation of specialised databases. Subsequently, parts of these have been incorporated into the information system of Geofond.

The creation of a geophysical database from measurements and surveys carried out by Geofyzika n.p. was started in 1972. This was financed from the state budget. After Geofyzika Inc. Brno, as successor to the former state organization, was dissolved on 31 August 2003, some of the key personnel were re-employed by Geofond in the Geophysical Data Unit and all geophysical data were integrated into the information system of Geofond. Based on a new Contract between the Ministry of the Environment and Geofond, the work of compiling the database continued at Geofond, completing the original programme, up to 2005. This involved work on the registers of geophysical exploration, airborne geophysics, gravimetry, petrophysics, geoelectric measurements and the register of seismic data, including management and maintenance of geophysical data.

The geochemical database was created under the terms of the project "Unified geochemical database" by Geomin Co-op. Jihlava from 1996 to 2004. Initially, the project was based on the contract between Geomin and the Ministry of Economy, and since 1997 on the contract between Geomin and the Ministry of the Environment. After necessary corrections and final approval of the project by the Ministry of the Environment in 2005, data were imported to the geochemical subsystem as a part of the comprehensive information system of Geofond. By December 2005 this subsystem contained the results of geochemical analyses of 1,072.362 samples.

Under the terms of the project "The development and maintenance of the information system of the Czech Geological Survey-Geofond 2004" a database for geochemical exploration was generated by MGE Ltd. acting as a subcontractor. The database is designed as a part of the Subsystem of Explorations, which is provided as a signal level of information enabling navigation to large collections of data in the geochemical subsystem.

Summary of outputs from all databases in financial terms

	Number of orders	Total costs according to price list	Invoiced
Ministry of the Environment	2	140 300,---	0,---
ČGS [1]	37	592 793,---	343 549,---
Ministry of Industry and Trade	2	84.600,---	84.000,---
Ministry of Agriculture [2]	1	84 000,---	0,---
Land Registry	1	200,---	0,---
Academy of Science	3	2 198,---	2 198,---
Academy of Science [3]	5	102 470,---	32 000,---
Towns and cities [3]	38	33 647,---	30 030,---
Universities [4]	30	643 470,---	12 161,---
Other users [5]	478	171 997,---	14.058,---
	444	872 532,---	743 188,---
TOTAL	**597**	**2 556 210,---**	**1 247 126,---**

Note: 'Total costs according to price list' means the price calculated in accord with the Geofond Price list for work and services.

1) Geofond is expected to co-operate with the Czech Geological Survey in work on relevant projects. In many cases the invoiced price is therefore lower then the price designated in the price list.

2) Under the terms of the contract between the Ministry of the Environment and Lesy ČR s.p. on the exchange of data

3) For these councils, a fixed charge is levied for providing thematic coverage of signal information or, on request, some more detailed data (hydrogeological information)

4) Outputs from databases were given free of charge for educational purposes and for diploma work.

5) The difference of about 130.000 CZK between the total costs according to the price list and the amount invoiced for services is due to some services not being chargeable (Moravské naftové doly a.s.–under the terms of agreement on the exchange of data), or discount was offered (work of some firms for the Ministry of the Environment–Geomin, Geotest) or in cases where the result of searches for the required data was negative.

Compared to 2004, the number of requests (29 more) and payment for outputs (411.269 CZK more) showed a slight increase. The greatest increase in demand came from those in the category of other users (34 requests and 317.065 CZK more) and CGS (7 requests and 244.946 CZK more). There was a slight decrease in requests from the regional councils (1 request less, but 124.615 CZK less in income (this marks a return to normal conditions; the exceptional income in 2004 was earned for providing detailed data on landslides to fulfil the Public Order "Slope deformation of Moravskoslezský Region" (117.500 CZK)).

COMPILATION OF SPECIALIZED MAPS

Maps with special geological features

One of the most important functions of Geofond is the regular publication of maps depicting areas with special geological features, such as protection of mineral deposits, landslide hazards and undermined areas, which could affect regional and local planning and environmental protection. These maps, at a scale of 1 : 50.000, are published in revised editions every 1–3 years and are produced in accord with §17 of Law No. 62/1988 Coll., and all amendments. According to this law, the organizations responsible for the National Geological Service are obliged to collect and make available data on geological conditions, on protection and use of raw material resources and ground water resources, and on potential geological hazards within the territory of the Czech Republic. These maps are designated as a primary source of information to assist state authorities responsible for regional and local planning and decision making in the preparation of technical documents concerning land use. These maps are passed to the Department of Geology and the Regional Departments of the Ministry of the Environment, Regional Councils and, through them, to District Administrations and Building Offices. To enable distribution, the Regional Councils are also given digital copies of the printed maps on CDs. Maps of protection of mineral deposits are also passed to the Ministry of Industry and Commerce and to Regional Mining Offices.

In 2005, Maps of Protection of Mineral Deposits for the Liberecký, Královéhradecký, Pardubický and Plzeňský Regions were published. These maps take into account the results of the project "Re-evaluation of deposits of state-controlled minerals in the Czech Republic" and information taken from reports made by other organizations is added. A new edition of Maps of Undermined Areas was made for the Ústecký, Moravskoslezský and Zlínský Regions and a new edition of Maps of Landslides and other Dangerous Slope Deformations was made for the Liberecký, Královéhradecký, Pardubický and Vysočina Regions.

Additional large-scale maps and digital maps

Since 1999, maps of borehole exploration, maps of protection of mineral deposits, maps of landslide areas and undermined areas, maps of other mineral deposits that were not included in the previously completed series, maps of exploration areas, old mine workings and main mine workings have been gradually made accessible at www.geofond.cz, using the Geomedia Web Map technology. All the maps are supplemented with "signal information" for individual objects. At the end of 2004 and the beginning of 2005, a new version of these applications, using more modern Arc IMS–ESRI technology, replaced the old one and was introduced on the website. New applications giving access to information about geophysical and geochemical surveys have been added.

If required, signal information can be provided in the form of vector maps and data files in GIS formats suitable for use in local information systems. These can be updated yearly on request.

3. OTHER ACTIVITIES

Purchase of geological magazines and other necessary periodicals

In 2005, the total number of geological magazines and other necessary periodicals purchased was 27, the same as in the previous year.

Publications

Based on the Plan of Publication, Geofond produced the following publications in 2005:

- Annual Report of the Czech Geological Survey-Geofond 2004 (250 copies of the Czech version and 100 copies of the English version)
- Updated web pages of Geofond (they were completely redesigned and published on the web in Czech and partly also in English)

Geofilm and Video Library

The Czech Geological Survey-Geofond is responsible for one of the video-rental facilities of the Ministry of the Environment. The video library contains 428 videos, mainly ecologically oriented. Geology is less well represented. In addition, 33 videos belonging to the ENvideo Foundation and 16 video transcriptions of geological films from the former Czech Geological Bureau are available. In 2005, 37 new videos were acquired, of these 5 concerning geology are on DVD. The archive of documentary films on geological topics was given to the National Film Archive and Geofond now keeps only 31 titles on celluloid film. In 2005, a total of 9 videos were rented to 2 users.

4. INTERNATIONAL ACTIVITIES

In the field of mineral resources, international collaboration proceeded through exchange of the English version of "Mineral Commodity Summaries of the Czech Republic" for reports published by other geological surveys, and by provision of information on the balance and changes of raw material resources in the Czech Republic to international journals and to other institutions. Regular systematic exchange of information and consultations with the U.S. Geological Survey, Mineral Resources Section, continued.

In the field of information technologies, international activities took the form of collaboration on the project "e-Earth–electronic access to geological data from borehole databases". This involved an increase in travel abroad and attendance at working meetings. Meetings were also organized by Geofond in Prague and Kutná Hora. The activities of GIC (Geoscience Information Consortium) continued. Dr. Čápová has been a member of its Steering Committee (the elected council for co-ordination of the consortium) since 2003

- From 2 February to 4 February 2005, a representative from Geofond took part in the Mid-term Review Meeting of the project eEarth in Luxembourg (L). This was financed from the project "eEarth".

- From 6 March to 8 March 2005, three representatives from Geofond took part in the working meeting of the project eEarth in Berlin (D). The main topics were WP6 (Multilingual Thesaurus) and WP7 (Service Implementation). This was financed from the project "eEarth".
- From 27 April to 30 April 2005, two representatives from Geofond took part in the consortium meeting of the project eEarth in Nottingham (UK). The main topics were introduction of the agreed solution of WP6 (Multilingual Thesaurus) and WP7 (Service Implementation). This was financed from the project "eEarth".
- From 16 to 19 May 2005 six representatives from Geofond took part in the seminar "47th Forum on non-metallic minerals" in Spišská Nová Ves (SK). The main activities were an excursion to the mineral deposits and mineral occurrences of non-metallic mineral resources around Spišská Nová Ves and Poprad, a visit to damaged forests in the Vysoké Tatry and meeting at the directorate of TANAP. This was financed from the Geofond budget.
- From 1 to 3 June 2005, a representative from Geofond took part in the conference "European Kaolin and Plastic Clay Association (KPC)", with members of IMA-Europe in Amberg (D). The main aim of the conference was mining, processing and use of kaolin and plastic clay. This was financed from the project "Economic registers of SurIS".
- From 18 to 28 June 2005, a representative from Geofond took part in "20th Geoscience Information Consortium" in Trondheim (N). This is an annual meeting of IT managers of the world geological surveys. Geofond presented results of the international project eEarth, carried out under the eContent programme. This was financed from the Geofond budget.
- From 20 to 23 June 2005, two representatives from Geofond took part in a "Congress of the Slovak Geological Society" in Zemplínská Šírava (SK). This was financed from the project "Economic registers of SurIS".
- From 3 to 7 August 2005, 2 representatives from Geofond took part in a consortium working meeting of e-Earth in Vilnius (LT). The main topics were the results of WP7 (Implementation of the Service), WP9 (Testing and Documentation) and WP11 (Promotion and Marketing). Geofond provided training in the use of the Multilingual Thesaurus application. This was financed from the project "e-Earth".
- From 14 to 17 September 2005, 2 representatives from Geofond took part in a meeting of the MTG group (part of CGI) in Warszaw (PL). The main activity was to discuss and prepare the project proposal "The Multilingual Thesaurus of Geosciences". This was financed from the project "e-Earth".
- From 17 to 25 September 2005, 3 representatives from Geofond took part in the "14th. Meeting of the Association of the Earth Geological Society" (MAEGS) in Turin (I). The main topics were natural hazards related to recent geological processes and their regional distribution, classification, and monitoring, including warning systems and stabilization procedures aimed at the elimination or reduction of the dangerous features. The scope for international collaboration in solving these problems in different countries was discussed. This was financed from the projects "Database of main mine workings II" and "Database of mine waste dumps II".
- From 20 to 24 September 2005, a representative from Geofond took part in the 15th. conference "The Present State and Perspectives of the Mineral Economy" in Krynica (PL). A presentation on "The importance of various raw materials in mining of building stone" was delivered. This was financed from the project "Economic registers of SurIS".

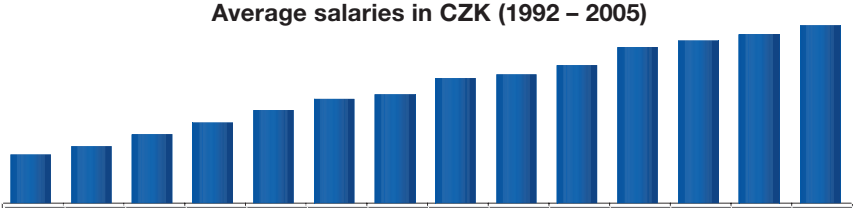
- From 11 to 14 October 2005, a representative from Geofond gave a presentation of the results of eEarth in Bratislava (SK) and Budapest (H). The possibilities of adding Slovak and Hungarian terms to the Multilingual Thesaurus were discussed. This was financed from the project "e-Earth".
- From 25 to 27 October 2005, a representative from Geofond took part in a meeting in Utrecht (NL). The topics were the presentation of results of the eEarth project, discussion of the possibility of adding more languages to the eEarth service and to the Multilingual Thesaurus and also preparation of the eWater project. This was financed from the project "e-Earth".
- From 14 to 16 November 2005, a representative from Geofond took part in the Final Review Meeting of the project eEarth in Luxembourg (L). This was financed from the project "e-Earth".

5. ECONOMIC STATEMENT FOR 2005

The budget for non-capital expenses was set at 27 221 000 CZK in January 2005; during the year it was subsequently increased to 41 160 000 CZK by additional dedicated supplements to the Geofond budget of which 42 803 069.20 CZK, i.e. 103.99% of the total, was actually used. This overspending was due to the negotiated procedure for financing the international project eEarth ("e-Earth–electronic access to geological data from borehole databases"). For the second stage of this project Geofond received non-budget financial support from the EC (European Commission) through the co-ordinator TNO-NITG (NL). Discounting these resources the total spend of routine non-capital expenses was 41 107 069.20 CZK, i.e. 99,87%.

Most of this was spent on salaries. The financial allocation for salaries (17 457 000 CZK) was overspent by 2.67 %. Overspending by 465 700 CZK for other personnel costs was due to the use of non-budget resources. This was spent under the terms of the grant from the EC (466 000 CZK) for co-operation in the project e-Earth. Relative to the year 2004, there was an increase in salaries of about 1 369 000 CZK and the sum paid back to the state by the employer as mandatory social and health insurance increased from 5 564 000 CZK to 6 083 000 CZK. From 2004 to 2005, the average monthly salary increased from 17 797 CZK to 18 736 CZK, being an increase of 5.27%. During 2005, 94% of the set limit of 82 full-time employees were used (the equivalent of 77 full-time employees). The average salary band number for all Geofond employees in 2005 was 9.70, compared to 9.49 in 2004.

Average salaries in CZK (1992 – 2005)



1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
5120	6004	7273	8490	9778	10964	11424	13142	13517	14519	16424	17107	17797	18736

The highest expenditure (13 746 000 CZK) was for services purchased from other institutions. This was 2 409 000 CZK more than the amount spent in 2004. Of this, a total of 7 937 000 CZK was paid for the completion of projects financed from the funds of the Department of Geology of the Ministry of the Environment, ("Completion of the Documentographic Information Subsystem in 2003–2006" (D)–145 000 CZK, "Economic registers of SurIS (Information Subsystem of Raw Materials) /Enlargement and update of the economic branch of SurIS" (E)–214 000 CZK, "Database of mine waste dumps II" (X)–30 000 CZK, "Database of main mine workings II" (H)–60 000 CZK, "Evaluation of exclusive mineral deposits in the state reserve" (R)–577 000 CZK, "Digitisation of borehole geophysical logs from selected boreholes and entering them into the Central Relational Database of Geofond" (KA)–22 000 CZK, "Processing the borehole geophysical measurements from DIAMO s.p. and transferring them to the Central Relational Database of Geofond–Crystalline formations of the South-Western part of Bohemia" (KP)–17 000 CZK, "Digitisation of borehole geophysical measurements from DIAMO s.p.-Moravia (leader DIAMO s.p., GEAM Dolní Rožínka branch)" (KD)–37 000 CZK, "Stratigraphic architecture of the Cenomanian in the Bohemian Cretaceous Basin" (T)–80 000 CZK, "Compilation and use of geophysical data, obtained with finance from the state budget" (GF)–1 609 000 CZK), "Geographical location and interpretation of old mining maps" (M)–780 000 CZK, "Beginning the creation of the digital archive of reports for incorporation in the information system of the Czech Geological Survey-Geofond" (DA)–738 000 CZK, "Development and maintenance of the information system of the Czech Geological Survey-Geofond 2004" (K)––1 705 000 CZK, "Digitisation of reports available on microfilms and their incorporation in the Digital Archive of Reports of the ČGS-Geofond" (DM)–980 000 CZK, "Implementation of Map Services within the IS of the ČGS-Geofond" (KM)–122 000 CZK, "Updating of the files of geologically documented objects" (A)–14 000 CZK, collaboration on the projects: "Portal of the State Geological Service" (B)–41 000 CZK, "3D Modelling of the basement relief of the Sokolov and Cheb Basins, creation of a data file for digital modelling from the GDO Database of the CRD of Geofond" (P)–50 000 CZK, "Revision of Old Mine Workings" (S)––85 000 CZK and "e-EARTH–electronic access to geological data from borehole databases" (under the terms of the "e-Content" programme (EE)"–631 000 CZK. That is, in total, 1 545 000 CZK more than in 2004.

Travel expenses increased markedly from 496 000 CZK in 2004 to 568 000 CZK. In particular the costs of travels abroad rose from 395 000 CZK in 2004 to 455 000 CZK in 2005. This increase was largely due to the journeys abroad made in relation to the project eEarth. Inland travel expenses increased from 101 000 CZK in 2004 to 114 000 CZK in 2005. Costs also increased due to other international activities: the charges for attendance at **conferences** increased from 23 000 CZK in 2004 to 45 000 CZK in 2005 and **charges for hospitality** increased from 17 000 CZK in 2004 to 38 000 CZK. This was due to the greater number of events attended in other countries and more reciprocal visits to Geofond.

The cost of **external reprographic services** also increased from 518 000 CZK in 2004 to 1 198 000 CZK in 2005 as a result of higher charges for the printing and publication of "Mineral resources of the Czech Republic in 2004" to which coloured maps were added. Expenses for **meal subsidies** increased from 442 000 CZK in 2004 to 464 000 CZK in 2005 owing to an increase in the cost of meal-tickets.

Water, energy and fuel costs increased slightly again from 604 000 CZK in 2004 to 890 000 CZK in 2005. This reflects the increase in the cost of electricity from 371 000 CZK in 2004 to 459 000 CZK in 2005, expenses for **gasoline** of 134 000 CZK in 2005 compared to 103 000 CZK in 2004. Payment of 82 000 CZK was made for water in 2005 compared to 46 000 CZK in 2004. This was the result of a breakdown of the water supply equipment in Chotěboř. Charges for **telecommunication** services also increased from 356 000 CZK to 774 000 CZK. This was due to the increase in charges for the internet and telephone services in the offices at Brno, Kutná Hora and Kovanice. Expenses for **education** increased to 130 000 CZK in 2005 from 82 000 CZK in 2004. The cost of **production work** increased to 216 000 CZK in 2005 as compared to 158 000 CZK in 2004. **Maintenance and repair** costs were 538 000 CZK in 2005 as compared to 338 000 CZK in 2004. Costs for the purchase of **software** were 249 000 CZK in 2005 as compared to 209 000 CZK in 2004; **minor equipment** costs were 1 459 000 CZK in 2005 compared to 1 195 000 CZK in 2004, costs for **books and manuals** were 194 000 CZK in 2005 compared to 110 000 CZK in 2004 and expenses for **office stationery** were 694 000 CZK in 2005 compared to 680 000 CZK in 2004.

There was a slight decrease in costs for services of **post offices and financial** institutions to 74 000 CZK in 2005 as compared to 82 000 CZK in 2004, and also in **rental expenses** that were 1 085 000 CZK in 2005 as compared to 1 169 000 CZK in 2004. There was also a notable decrease in the expenditure for **sundry services** to 1 452 000 CZK in 2005 from 2 100 000 CZK in 2004.

Applications for **capital expenditure** submitted during the year were approved in 2005. Geofond was given a capital grant of 2 593 000 CZK. Of this, 2 562 810.29 CZK was spent, and the remaining 30 189.71 CZK was returned to the state budget. The following actions were taken

21501L0009–Improvement of transport for Geofond–purchase of a Škoda Octavia Combi 4x4 1,9 TDI vehicle. Of 670 000 CZK granted, 668 400 CZK was spent.

21501L0014–Maintenance and repair of the building in Kutná Hora–repair of defects discovered during inspection of gas pipes. Of 130 000 CZK granted, 110 410 CZK was spent.

215011L024–Enlargement and improvement of the geographical information system workstation - purchase of software products ArcSDE (ESRI) and ORACLE for ArcSDE, and GIS server. Of 1 203 000 CZK granted, 1 202 656,29 CZK was spent.

215011L026–Improvements to security of the local network–purchase of file and backup servers. Of 370 000 CZK granted, all was spent.

215011L030–Administration of electronic mail services–purchase of the 64 bit AMD mailserver and Norton Antivirus (Symantec) programme. Of 220 000 CZK granted, 211 344 CZK was spent.

The target of 1 700 000 CZK set for **income** earned through Geofond activities in 2005 was exceeded. The total income reached 4 335 529.71 CZK, which was 2 635 529.71 CZK more than in 2004. This notable increase in income was caused partly by the grant of 816 000 CZK from the European Commission that was paid to the income account of Geofond to enable co-operation in the project e-Earth. A sum of 880 000 CZK was transferred from the reserve fund to the income account to cover essential non-capital expenses and 199 626 CZK was the refundable deposit returned by the Local Council of Praha 7 for the rent of part of the building in Kostelní 26. The implications from these figures are that the income increased in real terms only by 739 903.71 CZK, i.e. 43,5%. This rapid increase of income for services provided from the factographic systems, loans and reprographic services is considered to be an exception, not a trend.

The budget deficit is determined by the difference between income and expenditure. After calculation of the final budget provision, the budget deficit was expected to be in the order of 42 053 000 CZK. Thanks to increases in earned income of 940 000 CZK and savings on some capital investment and non-capital costs (83 000 CZK), the deficit decreased to 41 030 000 CZK, which was 1 023 000 CZK (2,43%) lower than anticipated.

6. ORGANIZATIONAL STRUCTURE OF GEOFOND

In 2005, the organizational structure was as described below. Planned numbers of staff are given in brackets; middle and high-level managers are denoted as +1, while heads of lower units are included in the staff number. Certain changes were introduced from 1 January 2006, and the most important of these are shown in italics.

100 DIRECTORATE (20+1) RNDr. Jaromír Starý

110 Secretariat and Offices reporting directly to the Director (2)

Co-ordinates the agenda for which the Director is ultimately responsible. This unit includes the Secretariat, Personnel Department, Accounts Department, Office of Foreign Affairs, Legal Department, Civil Defence Unit, Fire Prevention Office and an Occupational Health and Safety Unit. Part of the agenda is determined by law. Some services are carried out under contract. This unit is also responsible for the editorial policy of Geofond.

120 Department of Information Systems (16+1)
RNDr. Dana Čápová
(from 1 January 2006 Department of Informatics)

121 Computer Services (3)

(from 1 January 2006 Computer Administration Unit)

Responsible for the maintenance of the local computer network (Intranet) of Geofond and its connection with the Internet, looking after computer operation systems and hardware, keeping an inventory of computers and software, co-ordinating requests for new computer equipment, periodically making back-up copies of databases and operation systems which are archived, ensuring data is protected from unauthorised users and ensuring compatibility of the information system of Geofond with higher-level information systems (SIS, Intranet of the Ministry of the Environment, Internet).

122 Unit for Operation and Development of Computer Systems and Applications (5)

(from 1 January 2006 Computer Systems and Applications Unit)

Ensures development, maintenance and updating of methodology for the information system of Geofond (indexes, coding manuals, operation manuals). Implements new systems, maintains and develops software tools for management, maintenance and use of databases, including the developments of software applications, maintains programming and user's documentation, organizes training of employees, implements new technologies (WWW, GIS) and uses these

technologies to enable user-friendly access to databases, supervises building and development of the Information System of Geofond, including the design of the integrated model of the geo-information system, supervises compilation of external specialised databases and information subsystems, ensures integration of these subsystems into the Central Information System, provides information on specific use of the Geofond Information System, provides non-standard outputs from databases, co-ordinates research, grants or other projects in the field of development and use of modern technologies and data processing in geology.

123 Data Processing Unit (4)

(from 1 January 2006 Data Digitisation Unit)

Responsible for acquisition and pre-processing of data, including digitisation, provides standard outputs from databases, collaborates in maintenance and updating of individual databases of the Information System.

124 Geophysical Data Unit (4)

Responsible for compilation and use of geophysical data, established with finance from the state budget. Tasks involve the creation, maintenance, management and updating of the geophysical database, maintenance of an archive of geophysical reports and measurements, and provision of the most common outputs from the databases.

200 DIVISION OF THE DEPUTY DIRECTOR OF FINANCE (12+1) Ing. Libor Mareš

In charge of all activities necessary for the financial and logistical operation of the organization. The Deputy Director for Finance manages the budget, supervises civil defence and fire protection, presides over the investment panel, and oversees building activities and purchase of machinery and equipment.

210 Department of Accounts (3+1) Ing. Zuzana Hanousková, from 1 June 2005 Ing. Michaela Plisková

Responsible for the operation of the comprehensive payroll and invoicing systems, registering orders and contracts, controlling the cash-flow during fulfilment of contracts, preparing statistical statements, running an accounting information system to enable control of the budget, and for implementation of software for accounting and operations, carrying out money transfers, ensuring cash payments, calculating travel expenses and destroying accounting papers and other old documents.

220 Department of Operations (7+1) Blanka Hroňková

Administers assets, takes inventories of property and equipment, prepares contracts on property leases, manages the use of telephones, radio, television, water, electrical energy, and the payment of municipal fees, oversees utility payments and prevents budget deficits, supplies materials, ensures maintenance of buildings, office equipment, technical equipment, disposes of obsolete equipment, organizes audits of selected technical appliances and repairs, supervises company cars, night guards, switchboard and fire alarms.

300 Division of the Deputy Director for Geology (47+1)
RNDr. Jiří Rambousek

(from 1 January 2006 RNDr. Vít Štrupl)

Responsible for all activities of the expert departments, collaboration with the Department of Geology and Regional Departments of the Ministry of the Environment in the field of geological information and ecogeological aspects of territorial planning and state administration. Undertakes compilations of manuscripts on past geological projects, and reports on special geological phenomena, on protection, contamination and damage of bedrock and on conflicts of interest between mineral exploitation and environmental protection.

310 Department of Geological Documentation (14+1)
RNDr. Zora Hyblerová

311 Documentography Unit (6)

(from 1 January 2006 Document Processing Unit)

Responsible for all activities involving acquisition, inventory, control and documentographic processing of written and graphic documents containing the description and results of geological work designated for permanent storage. Carries out annotation of unpublished reports and enters data into the ASGI documentographic database, provides standardized outputs from it; registers new geological works; processes reports on foreign travel for the Ministry of the Environment, manages film and video rentals.

312 Geological Specimens and Material Archives Unit (2)

(from 1 January 2006 Document Acquisition Unit)

Responsible for selection of material for preservation in the Geofond archive and disposal of unwanted rock samples in collections acquired from other commercial and scientific organizations (diamond drill core and rock samples). Collects and stores geological samples and makes them accessible and is responsible for the database of geological specimens. Maintains the archive and storage facilities for physical samples, co-ordinates acquisition and transfer of geological documentation from external archives. Maintains the registers of maps of geological investigations and geochemical surveys.

313 Loans and Reprographic Services Unit (6)

(from 1 January 2006 Archive Service Unit)

Responsible for all activities involving the archive, in-house loans for study purposes and in-house reprographic services. Registers reports acquired for the archive, checks on completeness of accepted manuscripts, records loans, tracks manuscripts between departments during processing, prepares forms for invoices.

320 Department of Factographic Information (12+1)
RNDr. Milena Schröfelová

(from 1 January 2006 Geological Exploration Department)

321 Boreholes Database Unit (6)

(from 1 January 2006 Borehole Exploration and Object Location Unit)

Builds, maintains and updates the Database of boreholes, Database of radioactive anomalies and Database of radioactively anomalous areas.

322 Hydrogeological Unit (6)

(from 1 January 2006 Hydrogeological Exploration and Hydrogeological records unit)

Builds, maintains and updates the Database of hydrogeological objects, groundwater pollution (test wells), geothermal energy, mineral springs and their protected zones, protected zones surrounding spas, water resources and past hydrogeological projects.

330 Department of Mineral Resources Information (7+1)
RNDr. Jaroslav Novák

(from 1 January 2006 Mineral Resources and EIA Information Department)

Administers deposits of industrial minerals in compliance with the Geological and Mining Law (in collaboration with the Ministry of the Environment and Ministry of Industry and Commerce). Supports the protection and use of mineral resources by providing information, provides data for the state policy on raw materials and geological exploration, runs SurIS (Information System on Mineral Resources), provides outputs from SurIS and literature searches, including sources of primary documentation.

331 Unit for Protection and Registration of Mineral Resources (4)

(from 1 January 2006 Mineral Resources Records Unit)

Registers deposits forming state reserves and ensures protection of these deposits. Maintains archives of rulings of the former Commission for Rating of Reserves, rulings on reserves by the Ministry of the Environment, rulings on cancellation of reserves by the Ministry of Industry and Commerce, certificates of mineral deposits and approved prognostic resources, decisions on protected land surrounding deposits, further documents on state-controlled deposits in compliance with the Mining Law, State Statistical Statements Geo (Ministry of the Environment)V3-01, and other documents, drafts on establishment and changes in the protected land surrounding deposits in cases registered and managed by Geofond. Maintains the Register of protected areas surrounding deposits, limits of mining operations (mining claims), preliminary mining permits, exploration licenses, licenses to carry out geological work, and a register of geological and mining companies. Prepares basic documents on cancellation of reserves for the relevant Commission of the Ministry of Industry and Commerce. Collaborates with the State Mining Bureau, provides information related to administrative documents, participates in state-financed projects aimed at changing quantitative and qualitative parameters of reserves resulting from economic trends. Updates information systems on past mineral exploration projects in the Czech Republic, maintains the Register of mineral raw materials and all its sections: Exclusive (state-controlled) deposits with calculated reserves (subregister B), non-exclusive registered deposits (subregister D), other non-exclusive deposits (subregister N), approved prognostic resources (subregisters P and R), other prognostic resources (subregister Q), and mineral occurrences and areas with industrial minerals in sub-economic amounts (subregister V). Calculates reserves of exclusive (state-controlled) deposits, registers reserves of non-exclusive deposits, compiles maps of protection of mineral deposits for individual regions in compliance with the Geological Law. Provides outputs, including graphics, on the raw material basis of the Czech Republic to bodies of the central state administration, the State Geological Service and businesses. Uses GIS at a specialized workstation, prepares compilations of data from unpublished reports. Participates in state-

financed projects aimed at enlarging the information base on mineral deposits, maintains archives of registration sheets of mineral deposits and Statistical Statements GEO (Ministry of the Environment) V3-01. Updates lists of numeric codes for mineral deposits in the territory of the Czech Republic, delivers these codes to the Information System of Geofond.

332 Raw Materials Policy Unit (3)

Prepares statistical evaluation of imports and exports of mineral raw materials, follows prices of selected commodities both in the Czech Republic and at foreign commodity exchanges, prepares regular documentary summaries for the Department of Raw Materials Policy of the Ministry of Industry and Trade. Prepares the publication of specialized booklets: Mineral Commodity Summaries of the Czech Republic, Securing the Czech Republic with Industrial Minerals, Balance and Changes of Reserves of Mineral Raw Materials in the Czech Republic, and Summary of Pricing of Mineral Raw Materials in the Czech Republic. Participates in international collaboration in the field of mineral raw materials and pricing. Carries out market-oriented studies on selected industrial minerals.

340 Department for Support of State Administration (10+1)
RNDr. Vít Štrupl

(from 1 January 2006 this department is to be abolished––its activities will be transferred to department 330)

Administers old mine workings in compliance with the Mining Law. Responsible for the processing of the Statistical Statement "Hor(MPO)1-01" (assignment from the Ministry of Industry and Trade); responsible for the Database of main mine workings (joint assignment with the Ministry of the Environment, Ministry of Industry and Trade and the Czech Mining Bureau). Provides information sensu Law No. 123/1998 Coll. and 106/1999 Coll., responds to specific queries by state administrative bodies at all levels and/or co-ordinates such response through specialist organizations.

341 Land Information Unit (5)

(from 1 January 2006 Unit of Land Impacts)

Carries out comprehensive processing of the Statistical Statement "Hor (MPO)1-01", passes on data to all relevant Registers (Institutions, Reclamation, Deposits, Spatial limits of mining operations). Produces customized outputs from these Registers for ministries and the Czech Mining Bureau. Publishes the annual "Summary of reserves of non-exclusive industrial minerals in active mines". Maintains and updates the Register of main mine workings and old mines, provides basic documents to the Ministry of the Environment for categorisation and securing of mines, deals with requests made by the state administration and other institutions, provides evaluations for developers, land-use planners and the Land Registry of the Czech Republic regarding special geological features in selected areas.

342 Risk Assessment Unit (5)

Compiles the Database of landslides and other dangerous slope movements, Database of undermined areas and specialized databases on historical mining activities. Periodically issues reports for land-use planners in compliance with Section 13 of the Geological Law. Offers evaluations of geological hazards, runs specialized library and archives of historical publications on mining and mineral processing.

Organizational structure of the Czech Geological Survey-Geofond (until 31 December, 2005)