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**ROMANIAN NATIONAL AGENCY FOR  
MINERAL RESOURCES (NAMR)  
NATIONAL DATABASE**

**FINAL REPORT**

**November 6, 1998**

*Requested by*  
**Government of Romania**

*Prepared under Contract for*  
**United States Agency for International Development**  
DHR-0030-C-00-5016-0  
**Regulatory Energy Efficiency Project**  
**Project No 180-0030**  
*In Cooperation with*  
**World Bank**

*Bechtel International Consulting Group*

**22934-009-015**



Romania  
file for CSIE

**Mezey, Lydia**  
**From** Hartel, Charles  
**Sent** Tuesday, November 10, 1998 4:18 AM  
**To** Menaker, Howard  
**Cc** Mezey, Lydia  
**Subject** NAMR Final Report  
Howard,

I managed to dig out the final report I prepared last year on the NAMR National Database work. I added a brief update on developments this year and gave Roberto a copy. I have attached copies of the cover letter and the report.

As I mentioned in the report, there is one item still outstanding that the NAMR would like to settle ASAP: formal turnover of the computer equipment we provided. Apparently repairs are needed to some of the Bechtel-owned PCs that we supplied. The agency can't spend any money for repairs or maintenance until they have title to the equipment. For the PCs that we provided from Bechtel's surplus inventory, I think that we could just send a letter to the NAMR stating that the project is finished and that we are turning over the PCs to the Agency per our agreement when we installed the computers. As far as Bechtel's IT dept. in SF is concerned, those PCs belong to the project - we can dispose of them as we please. If you want me to take care of this, I will - just let me know. As far as the computers that USAID paid for are concerned, I don't know what the turnover procedure is, but I gathered that Lydia or someone else was handling that.

If you should need to reach me, I'm in Warsaw this week. Cheers.

Charlie

A

6 November 1998

Mr Roberto Figueredo  
United States Agency for International Development  
Blvd Natruilor Unite No 1  
Bucuresti, Sector 5 Romania

Re Final Report, NAMR National Database

Dear Roberto

Howard asked me to give you this final report of our work on the NAMR database. This is basically the report that I prepared when we completed our work at the end of last year, however, I have added a brief update at the end of each section summarizing what additional progress the NAMR has made during 1998. Although I have not been involved in any work on the database this year, I have stayed in touch with some of the NAMR staff. The status updates are based on what I have heard recently about progress on the project.

There is one item outstanding that the NAMR would like to resolve quickly. Formal turnover of the computer equipment, including the 18 PCs that Bechtel provided from our own surplus inventory. The NAMR can't undertake maintenance of this equipment until it receives a letter formally turning the computers over to the Agency. Apparently some repairs are needed which the NAMR is willing to make but not until the computers are officially turned over. I have not been involved in this equipment turnover process, so I don't know where it stands. I know that Bechtel doesn't want the PCs back, so that shouldn't be a problem. I'll pass this information along to Howard too.

Sincerely,

Charles F Hartel

Enclosure

cc Howard Menaker

B

**USAID Regulatory and Energy Restructuring in Eastern Europe and the Baltics**  
**Job 22934-009**  
**Romanian National Agency for Mineral Resources (NAMR)**  
**Final Summary Report, National Petroleum Database**  
**Charles Hartel**

This is a final report summarizing Bechtel's work to help the NAMR develop its National Petroleum Database. This activity took place between mid-1995 and November, 1997, when Bechtel completed its assistance to the NAMR on the database project. I have included an additional summary of the NAMR's progress on the database through October, 1998.

**Background**

The NAMR administers Romania's oil and gas resources. Its responsibilities include identifying concession blocks for development, soliciting, reviewing and selecting bids from potential developers, issuing licenses for and regulating exploration and production activities and establishing tariffs for pipeline transport of crude oil and gas. The NAMR is also responsible for collecting and managing relevant data from the activities it regulates, in particular, data from petroleum exploration and production activities that have long-term value toward future exploitation of these resources.

Romania's petroleum law (Article 5 of The Petroleum Law, Number 134, dated December 29, 1995, together with Chapter 6 of Government Decision Number 1265 approved November 22, 1996) provides that all data and information resulting from petroleum operations conducted with respect to Romanian Petroleum resources, irrespective of the period when such were obtained, belong to the Romanian State. The law and decision assign responsibility to the National Agency for Mineral Resources to set up and utilize the National Database containing such data. The Title Holders (entities licensed to undertake petroleum exploration or production) are obligated to ensure the collection, preparation, updating and transmission of the data in the manner requested by the NAMR. The Title Holders have the right to use the data for the duration of the Petroleum Agreement.

Bechtel's assistance to the NAMR toward development of the National Database is summarized in the report which follows. The NAMR was and still is responsible for overall management of the database project. The NAMR's prime contractor (under its World Bank loan) for development of the database software is Landmark Graphics, Inc.

This report is organized by tasks according to Bechtel's NAMR work plan, which included tasks outside the scope of the database. All activities under Tasks 3 and 4 were directed toward development of the National Database. In addition, some of the regulations prepared under Task 2 were to support the database effort.

## **Task 2 Oil & Gas Regulatory Consultancy Support**

In early 1997 the NAMR asked for assistance in developing detailed regulations governing submittals of exploration and production (E&P) data by licensees. Such regulations are necessary to make sure that licensees submit the required data on a timely basis and in a format suitable for incorporation into the National Database. The five Romanian oil "entities" (Petrom, Romgaz, Prospectuni, Atlas GIP and Foradex) had initially agreed to cooperate voluntarily in compiling and submitting E&P data. By early 1997 it became apparent that the entities would not submit the necessary data until the NAMR formally adopted data submittal regulations.

In August, 1997 Bechtel completed detailed regulations and technical instructions that specify how and when licensees must submit E&P data to the NAMR. In October Bechtel supplemented these regulations to include data components required to calculate crude oil transport tariffs. The rates and tariffs data regulations followed the NAMR's receipt of the pipeline tariff model from Beicip in August.

The NAMR originally planned to adopt the E&P regulations by September, 1997 so that the database project could move ahead according to the schedule in effect at that time. Instead, the Agency decided to delay adoption of all the database regulations until a separate environmental component could be added. (The NAMR was receiving advice on the environmental data from other sources.) The regulations had not been adopted by the time Bechtel's support ended in November, 1997 and the entities had not made any significant data submittals to the NAMR.

***Additional developments through October, 1998*** The NAMR still has not adopted the database regulations, however, the entities have begun submitting some data to the agency. See discussion in the following section.

## **Task 3 Oil & Gas Database System Consultancy Support**

Bechtel held initial discussions with the NAMR and the entities in April, 1996 to discuss specific database training and support requirements. The planned focus of our support was on the flow of information between the entities and the Agency, particularly data loading and conversion by the entities.

By July we reached agreement with the NAMR and the entities on the approach to training and support. Bechtel agreed to sponsor a formal training program on basic use of the Sun workstations and Landmark software, followed by additional assistance tailored to meet the needs of each entity. (Acquisition of the Sun workstations was under Task 4, described in the following section.) We installed the Sun workstations at a temporary training facility and contracted with Landmark to provide database training to 24 entity staff members between September and December, 1996. Landmark had two local Romanian engineers who were uniquely qualified for this work. Also, using local resources enabled us to provide this training at a much lower cost than through alternative sources.

During mid-1996 we also worked with the NAMR and Landmark to review what specific data the Agency should collect to fulfill its regulatory functions. The results of this effort were incorporated into the data loading software that Landmark developed for the Agency. Pat Kelly led Bechtel's support on this activity.

In early 1997 the Sun workstations were relocated to the entities Bechtel and the NAMR held a series of follow-up meetings with the entities to discuss each entity's plans to begin loading data and supplying it to the agency. Although the entities continued to express interest in the project, they were putting little effort into loading or converting data. One reason, we were told, was that the entities lacked enough PCs for this effort. Our response to this problem is discussed in the following section.

In February, 1997 the largest entities, Petrom and Romgaz, agreed in principle to a pilot program of 2-3 months duration during which time they would load data for specific areas of interest and submit this information electronically to the Agency. During this period we helped the entities with Unix and networking support, as discussed in the following section. The entities were generally not interested in receiving direct assistance on data loading or conversion.

Although the entities, particularly Petrom and Romgaz, did apparently load some data, virtually none of this information had been submitted to the NAMR by November, 1997, when Bechtel's participation ended. The Agency expected data submittals to begin in 1998, following adoption of the database regulations.

A major factor in the NAMR's willingness to postpone the collection of data were the delays the Agency encountered in procuring its own database computer system. Under the original NAMR/Landmark project schedule the Agency's computers should have been installed by spring, 1996. The database should have been fully operational by December, 1996. The computers were not actually procured and fully installed until September, 1997. The Agency seriously underestimated how much time it would need to complete this procurement. There is no technical reason why the work to build the database could not have moved ahead without the NAMR computers. The USAID-supplied workstations offered more than enough computing power for this stage of database construction. The Agency was not committed to keeping the remainder of the project on schedule. Following installation of its computers in September the NAMR and Landmark drafted a new plan and schedule for completing the project. Under the revised plan the database was scheduled to become fully operational in September, 1998.

In October, 1997 Bechtel provided the NAMR with data quality guidelines and a list of key performance objectives to help the Agency measure its own progress toward successful completion of the project. The list of objectives is included at the end of this report. The data quality guidelines were really a starting point toward more comprehensive quality control procedures that should be developed as part of the pilot test of the system.

***Additional developments through October, 1998*** Although the database is not fully operational yet, the NAMR has made progress. The NAMR and Petrom are well into a pilot project where Petrom is collecting and submitting data, mostly production information, from current operations. A similar pilot with Romgaz is getting under way. Foradex and Prospectium are also collecting data in accordance with NAMR procedures, though they haven't submitted significant quantities yet. The entities are building pieces of the database using software developed by Landmark and the PCs and Sun workstations supplied by USAID/Bechtel. The NAMR has no general timetable or agreement with the entities on

loading historical data, however, the agency will contract with Prospectum for loading some historical records

The NAMR staff has continued to receive training from Landmark on use of the database software and related analytical tools. Landmark's contract will end in December, 1998. The NAMR plans to use the system to help prepare data packages for the next concession promotion round, scheduled for early 1999.

#### **Task 4 Hardware Acquisition for Source Entities Interface with NAMR**

Preliminary work on this task began in mid-1995 to develop specifications for the database hardware that Bechtel would supply to the entities. Bechtel purchased the major hardware components, five Sun Sparcstation 20 computers, in May of 1996. These computers were shipped to Romania and used for the entity training program during the remainder of 1996. The computers were installed at the entity sites, where they reside today, in early 1997. The value of these computers was approximately \$110,000.

After the computers had been installed we discovered that the vendor, Gulfcoast Workstations, Inc. (Florida) had shipped previously used monitors with the systems. Our purchase specification was for all new equipment. The vendor said that this was a mistake and eventually delivered new monitors, which we installed at each site.

In July, 1996 Bechtel contracted with a Romanian firm, Romsys, S.A. to install and maintain these five workstations. The current maintenance contract, which includes resolution of hardware and operating system (Solaris) software problems is in effect until July, 1998.

In September, 1996 the NAMR asked USAID to supply three laptop computers to support the Agency's effort to evaluate bids on oil and gas concessions. At USAID's request Bechtel purchased and delivered to the NAMR in December, 1996 three IBM Thinkpad 560 notebook computers.

In January, 1997 the NAMR requested that Bechtel supply additional PCs for use by the entities in loading data. PCs were in very short supply at the entities. Also, the software that the NAMR and Landmark developed during 1996 depended more heavily on PCs than the Sun workstations for loading data. We did not have funds in the hardware budget to purchase more PCs, however, Bechtel agreed to lend some of its own PCs to the database effort. In early 1997 we obtained 18 "surplus" 486 PCs from Bechtel's office in San Francisco. These PCs were equipped with Pentium upgrade chips, voltage converters and other accessories, as required, and shipped to Romania for use on the database project. Through a joint agreement among Bechtel, USAID and the NAMR the PCs were lent to the entities to load data.

The PCs were shipped to Romania in March, 1997. After considerable difficulty clearing them through customs, 15 of the PCs were installed at the entities during April and May. The remaining three are at the NAMR office. In addition to installing the PCs, Bechtel set up local-area networks at the entity sites to link these PCs to the Sun workstations and, where feasible, to other pre-existing PCs and workstations. These PCs are not being fully utilized for their intended purpose because the entities are currently putting little or no effort into the

database project. If the entities step up their efforts on the project following adoption of the database regulations the PCs will probably get more use.

*Additional developments through October, 1998* Although this equipment was underutilized in November, 1997, the NAMR reports that these systems are being used now by the entities for data collection activities. The NAMR asks that Bechtel and USAID complete the formal turn-over of all computer hardware. The NAMR is unable to undertake maintenance of this equipment until it is formally turned over.

### Conclusions

The NAMR and the five entities have the basic tools that they need to build the database. Bechtel provided the entities with the necessary computing infrastructure and training to supply the NAMR with data. We prepared the regulatory framework to enable the NAMR to collect petroleum information from the five Romanian entities and other current or future license holders. In addition, we helped the NAMR on a day-to-day basis with a wide range of database-related issues, including the scope of information required, evaluation of commercial software and hardware to implement the system, quality control procedures, electronic data interchange with the entities and project management.

The ultimate success of the database project depends primarily on the NAMR's ability to collect the information it needs and build a working database. The Agency has not put enough effort into achieving this central objective. The Agency has put much effort into buying computers and software, attending classes, drafting plans and schedules, then later revising them, as well as proposing new initiatives for USAID assistance. Many of these activities are important, but by themselves they don't constitute real progress toward creating a functioning database.

In October we prepared a list of performance-oriented objectives to help the NAMR measure its progress for the remainder of the project. We reviewed these objectives with the NAMR and local USAID representatives. A copy of these objectives is included at the end of this report.

*Additional developments through October, 1998* The NAMR has made real progress in building the database during 1998. Little data have been loaded, though, and the capabilities of the database software and the NAMR staff's ability to use it have not really been tested. The Agency's first real test may come in 1999, when it plans to conduct a new round of bidding for concession blocks. With the Bechtel and Landmark work on the project ended, it appears that the Agency will have to become self-sufficient very quickly to make the National Database project a success.

### Computer Equipment

Here is a summary of computer equipment procured for this project

5 Sun workstations The Sun workstations are installed at the entity sites. Three are in Bucharest (Petrobr, Prospectiuni, Foradex), one is in Ploiesti (Atlas) and one is in Medias (Romgaz)

3 IBM Thinkpad 560 notebook computers These computers are being used by the NAMR staff

18 Bechtel-owned PCs plus miscellaneous networking hardware Bechtel agreed to leave these computers in Romania at the conclusion of the project. Fifteen of these PCs are installed at entity sites. Three of them are at the NAMR office. **Formal turn-over of this equipment is a high-priority item for the NAMR**

## Performance Objectives for the National Petroleum Database 31 October 1997

Although efforts to implement the National Database system have been under way for over two years, little progress has been made toward the central objective of collecting the necessary information from oil and gas operations and building the database. Computers have been purchased and installed, plans and schedules have been drafted and revised, regulations written, software developed, staff trained. These things are important, but by themselves they do not constitute real progress toward building a useful information management system. Real progress can be measured only by the NAMR's ability to collect and use effectively the information it needs to manage and develop Romania's oil and gas resources.

The purpose of these performance objectives, or milestones, is to focus attention on collecting and using information, rather than on completing the individual tasks that go into building the database system. This list is not intended to be a complete schedule of all activities required to implement the National Database. Certainly other milestones and higher-level objectives, such as improvements to Romania's petroleum development through better data management, could be added. If the Agency achieves these goals, though, the database project will be an unquestionable success.

The NAMR and Landmark have recently agreed on a revised date of September, 1998 to have the database system fully operational. To meet this target, the Agency will have to pass most of the milestones on this list before then. Many of the milestones will have to be passed well before next September. The "Target Dates" are suggestions. The NAMR staff should develop a schedule that they think is achievable to complete the work by next September. The NAMR may have ideas on additional milestones or modifications to these. The staff should feel free to suggest any changes.

### Milestones do not necessarily have to occur in the order shown

No	Milestone	Target Date	Description & Comments
1	Adoption of database regulations	31-Dec-97	NAMR adopts regulations for data submittal. Key E&P regulations are complete. Agency intends to include new environmental data before adopting entire package.
2	Ability to load newly collected data automatically from entities, using the latest Landmark OpenWorks software	31-Jan-98	NAMR should be able to receive data from on-going operations (drilling, production, etc.) in specified electronic format and load to database without having to manually reformat information or write new conversion software.

3	Ability to perform basic automated quality control checks	1-Mar-98	Basic quality control checks should be automated and performed prior to or during data loading
4	Receipt of initial data sets from entities	15-Mar-98	NAMR begins receiving data from entities in NAMR-specified formats Adoption of regulations is considered pre-requisite
5	Regular receipt of well drilling data for current operations	1-May-98	NAMR receives data from new drilling operations on a regular basis, as specified in regulations This implies that the NAMR and entities have used the system enough to work out the bugs so that incoming data can be routinely loaded Applies to newly collected data, i e , from new wells Loading historical data will involve special problems of reformatting and quality control The NAMR should focus on being able to load new data from on-going operations before trying to solve all the problems associated with historical data
6	Regular receipt of production data	1-May-98	Same concept as previous item, but applies to well and field production data
7	Regular receipt of well logging data	30-May-98	Same concept as previous item, but applies to data from well logging activities
8	Regular receipt of seismic data	31-Aug-98	Same concept as previous item, but applies to reporting of data from new seismic surveys
9	Schedule and plan for receipt of historical data from entities	15-May-98	Set priorities and establish a plan and schedule for loading historical data from each entity Some historical data have already been loaded, however, most are still held by the entities
10	Receiving and loading historical data according to plan	1-July-98	Begin receiving historical data on a regular basis, according to the established plan A reasonable time frame for loading all usable historical data would be 3-5 years
11	Ability to produce basic reports and graphics using actual data	1-Mar-98	In addition to loading data, the staff must be able to use the application software required for regulatory oversight and the preparation of

			concession promotion data packages
12	System demonstration by NAMR staff		Demonstration by NAMR staff of the range of capabilities of the database management system, including software to load data, produce reports and graphics, oversee exploration and production activities. This should include a formal demonstration to interested parties outside the NAMR, such as oil company representatives, officials from other government agencies, USAID, the World Bank
13	System fully operational	30-Sep-1998	NAMR receiving and processing data on a regular basis. Staff self-sufficient at performing routine data management and analysis tasks
14	Production of first concession promotion package		Using the database system, NAMR produces data packages required to solicit bids for future development of oil and gas properties