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## Financial support for reclamation work

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### Abstract

**Relevance.** Currently, the mining industry is faced with a number of environmental problems, since mining is associated with a large burden on the natural environment. As a result, atmospheric air, water bodies and soils are polluted with heavy metals, the natural landscape changes, man-made accidents occur, etc. With the growth of production, the areas of disturbed land, which subsoil users are obliged to restore to their original state, also grow.

**The purpose of the work** is to identify possible schemes for financial support for reclamation work.

**Research methods.** Generalization, systematic approach, logical analysis, comparison methods, analogies.

**Results.** The experience of financing reclamation during the existence of the USSR, when the Instruction on the procedure for financing reclamation work was in force, is generalized and analyzed. The features of financing reclamation in EU countries are considered. The main attention is focused on the recommendations of domestic researchers on the creation of liquidation funds, which involve the allocation of the main share of funds for reclamation, as well as reserve liquidation and reclamation funds. It follows from the analysis that the solutions to this problem are diverse, both in relation to determining the number of financial resources and the procedure for accumulating these funds. In each case, substantiation is required for the procedure for determining the number of financial guarantees, the amount of monthly or quarterly contributions, the period for making them, etc. Recommendations for the creation of a land reclamation fund in the Kemerovo region, the legal basis for its creation and support from parliamentary hearings regarding “Reclamation of lands in the Kemerovo region” are addressed in more detail.

**Conclusion.** Each of the considered models for financing reclamation can be used in practice. Preliminary work involves introducing appropriate changes to a number of federal laws and other regulatory documents. Undoubtedly, it is advisable to adopt the Federal Law “On Reclamation”.

**Keywords:** subsoil use, mining, disturbed lands, reclamation, financing, guarantees, specialized funds.

### Introduction

The specificity of reclamation work that involves the development of mineral deposits presupposes the need for a special procedure for their financing. In the Soviet period, according to paragraph 3 [1], enterprises were required to carry out these works at their own expense. The state assumed the responsibility for the reclamation of land plots, the use of which was terminated before July 1, 1969. Reclamation work was carried out either during the exploitation of the deposits, or within a year after completion of the work. According to the authors [2], the organization could not “disappear” (in the modern interpretation, imitation of bankruptcy, etc.). The procedure for financing reclamation was determined by the Instruction on the procedure for financing land reclamation work, approved by the USSR Ministry of Finance, the USSR State Planning Committee and the USSR State Bank dated June 21, 1978.

The main provisions of the instructions were as follows:

- reclamation costs are determined on the basis of projects and estimates approved by ministries and departments of the USSR and the Councils of Ministers of the Union Republics (according to the subordination of enterprises, organizations and institutions);
- clause 1.3 defines the list of costs for the technical stage of reclamation, clause 1.4 – costs for restoring land fertility;
- work included in the technical stage is carried out by the enterprises themselves that disturbed the soil cover, work included in the biological stage is carried out by land users to whom the land is transferred (returned);
- reclamation costs are included in the cost of production when developing mineral deposits and peat;
- the annual volumes of work and costs for reclamation are determined by higher-level organizations and are provided

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for in the plans of enterprises, organizations, institutions that carry it out;

- accumulation of funds for reclamation is carried out by enterprises on a monthly basis. The amount of funds is determined based on the volume of extraction of minerals and peat and special rates of deductions for reclamation, approved by ministries and departments of the USSR and the Councils of Ministers of the Union Republics according to the subordination of enterprises;

- the amount of deductions is included in the cost price under the item “Other production costs” and reflected as funds for special purposes (account “Targeted financing and targeted revenues”). Ministries and departments have the right to centralize up to 60% of these funds;

- financing of reclamation work is carried out by institutions of the State Bank and Stroybank of the USSR in the presence of approved projects and estimates;

- payment for completed reclamation work (technical stage) is carried out at the cost of production costs and is made from the company’s current accounts for fully completed work in accordance with the acceptance certificate, which is drawn up in accordance with [3];

- payment for reclamation work at the biological stage is made within the amounts provided for these purposes in the estimates for mining operations; funds are transferred to the current accounts of land users to whom the lands are transferred (returned). They are spent for their intended purpose under the control of higher organizations;

- reclamation work can be carried out by contract or in-house. When using the contract method, enterprises enter into contracts to perform these works;

- acceptance of completed reclamation work (technical stage) is carried out on the basis of a transfer certificate or work acceptance certificate in accordance with [3].

In the 1990-s the transition to market relations required a change in the procedure for financing reclamation. If previously mining enterprises were state-owned and reclamation costs were annually planned and paid from the state budget, now most enterprises have become private property and their own funds have become sources of financing. The state has assumed the responsibility for financing liquidation work, including reclamation, only in cases where the use of subsoil is terminated through no fault of the subsoil user or in the event of emergency situations. The need for legal and regulatory support for financing reclamation was also explained by the fact that in the mid-1990-s mass closure of especially unprofitable

mines and open-pit mines began as part of the restructuring program, while in the work to eliminate the harmful effects of mining operations, reclamation costs had the largest share (Table 1) [4].

### Results

By the beginning of 1998, design institutes were equipped with a technical base for liquidation work prepared by that time, and the “Basic provisions on land reclamation, removal, preservation and rational use of fertile soil layer” were approved, but the question of financing remained open. Only the subsoil users who develop mineral deposits on the basis of a Production Sharing Agreement (PSA) were lucky. The agreement provided for the creation of a target liquidation fund (TLF), which, according to [5], was created through quarterly contributions made by the investor from the beginning of industrial production, in proportion to the volume of production. Deductions per unit of extracted raw materials were established by the management committee based on the need to fully finance liquidation work before the start of their production. This fund for subsoil users developing deposits of all minerals in addition to hydrocarbons was to be created in the form of an extra-budgetary fund under the Ministry of Natural Resources and Ecology of the Russian Federation. The question of the need for a legislative solution to this problem for all other situations has been raised more than once by a number of researchers [6–9]. At the same time, it concerned both the development of deposits of solid minerals and oil and gas resources [10–12].

For some time, from the introduction of deductions for the reproduction of the mineral resource base (RMRB) and before the change in the taxation mechanism for subsoil users, when the RMRB was abolished in 2002, such a mechanism for the formation of a liquidation fund existed. As part of the formation of rates for RMRB, the “Regulations on the procedure for the formation and use of funds from the liquidation fund of the enterprise” were in effect. The liquidation fund was formed from 10% of the number of regular payments for the extraction of mineral resources and 10% from contributions to the RMRB. Since 2002, it was abolished, and to this day, despite numerous appeals to the Government of the Russian Federation with proposals to create an off-budget liquidation fund, this problem remains unresolved. As a result, subsoil users develop their own internal corporate procedures that regulate issues related to the completion of the enterprise, and some of them, characterized by dishonesty and low social responsibility, find a way out, for example, in bankruptcy, when the costs

**Table 1. Distribution of costs for activities during liquidation work**

**Таблица 1. Распределение затрат на мероприятия при выполнении ликвидационных работ**

Events	Expenses	
	Million rubles	%
Construction, expansion and operation of drainage systems	3100,0	20,4
Treatment plants	645,1	4,2
Protection against flooding of surface and drinking water sources	734,6	4,8
Construction of environmental safety facilities	1830,0	12,0
Extinguishing rock dumps and underground fires	253,2	1,7
Reclamation of disturbed lands and filling of gaps	7484,7	49,4
Monitoring of industrial and environmental safety	1152,4	7,5
Total for eliminating the consequences of harmful impacts from mining operations	15 200,0	100,0

**Table 2. Formation of a liquidation fund****Таблица 2. Формирование ликвидационного фонда**

Author	Recommendations
M. K. Smitten [8]	Creation of a liquidation fund (centralized or by each organization) at the expense of contributions from the subsoil user. The total amount of funds accumulated must correspond to the cost of closing the mine (open-pit mine). The funds of the fund should not be included in the assets of the enterprise to ensure that they are used for liquidation, even in bankruptcy. The procedure for the formation and use of the fund must ensure a balance of interests of the state and the subsoil user
V. B. Nechaev [18]	Creation of a regional liquidation fund with a deposit efficiency of at least 12% per annum. Mandatory contributions to the fund from enterprises in the amount of 1% of gross revenue. The amount of funds for liquidation work is differentiated depending on the complexity of socio-economic and mining-technological conditions, production capacity, and the life of the enterprise. Contributions to the fund are included in cost
M. E. Pevzner, E. M. Kiryukhina, I. P. Korneeva [7]	The first option is to transfer funds to a current account in the Federal Treasury for the purpose of purchasing government target bonds (GTS). Coupon income (interest) on GTS is accrued and paid annually The second option is to transfer funds to a current account in the Federal Treasury and accrue interest on them, the amount of which is established by the Government of the Russian Federation; the manager of the reserved funds is the authorized federal government body
V. G. Karpov, M. A. Khalikova, D. R. Musina [19]	Creation of a single target liquidation fund within a company. The deduction rate is determined based on the start date of fund accumulation and the return on investment. The effectiveness of fund management involves two models: passive – accumulation of funds on a bank deposit (risk-free investment method), the source of financing is cost, and active – investing in government securities, corporate securities, currency values, etc. The essence of the active model is the creation of an optimal structure investment portfolio
V. A. Ivanova, N. Yu. Korobeinikov [11]	Creation of a target reserve liquidation fund from the beginning of operation. The total number of liquidation funds consists of monthly deductions (standards per 1 ton of oil production, multiplied by the volume of production), part of depreciation charges, a percentage of payments for production, part of excise taxes on sales and income from the investment of fund resources for the entire period of their use
D. R. Musina [12]	Creation of a target reserve fund for the liquidation of an enterprise. It is assumed that there are two models: creation and management. The first is one direction of investment (bank deposit – a risk-free investment of funds), a fixed tax rate, the amount of management work is minimal, monthly contributions to the fund and monthly interest accrual. Active model – formation of an investment portfolio, verification of investments, taxation of income in the amount of 15–24%, presence of transaction costs, possible contact with a trust manager, development of special financial instruments
A. I. Bogurasev, Yu. V. Kaplunov, I. E. Bogopolsky [6]	Development of the project "Regulations on the formation and use of a specialized liquidation fund for carrying out liquidation work during the closure of a mining enterprise". Creation of the Fund as a division of the Federal Energy Agency, which carries out its functions in accordance with agreements with subsoil users or liquidation workers. Subsoil users make monthly contributions to the fund, starting from reaching production capacity. Deductions are taken into account in the cost price and spent for their intended purpose. Funds are accumulated for each mining enterprise separately. Upon receipt of a license, the subsoil user transfers a one-time contribution to the open Fund, and also compensates for the amount of state expenses for geological exploration work performed in this area. The maximum contribution amount is 15% of the liquidation costs. Control and disposal of the funds of the liquidation fund is carried out by the Fund in agreement with the authorized federal executive body
O. V. Bylbas [15]	Creation of a personal account for an enterprise in a bank. Making a security deposit in the amount of 30% of the value of the liquidation fund for a period of up to 10 years, 20% for a period of 11–20 years and 15% for a period of more than 20 years. Monthly deductions from the date of reaching production capacity (0.3–2.5% as a share of costs in the cost price) depending on annual production and operating time
V. P. Voskoboynik [20]	Opening a special deposit account in a bank for the purpose of liquidation work with a special regime for its use and capitalization of funds. Quarterly deductions for the share of depreciation with capitalization of interest, recommended deduction rates from 2.5 to 20% depending on the duration of the work
Draft regulations on the creation of liquidation funds by coal mining enterprises to finance work on the liquidation and preservation of mining enterprises [21]	Opening a deposit account, accumulating funds through quarterly deductions from depreciation. The rate of deductions is 1–20% depending on the period of acceptance of fixed assets on the balance sheet
O. S. Anashkin, V. A. Kryukov [13]	Two financing options: the first is the development of internal corporate documents to create some kind of liquidation trust fund and use it; the second is changes in tax legislation that allow contributions to the liquidation trust fund to be included in operating expenses. The liquidation trust fund is the property of the state. Every year the state issues securities according to the funds of the liquidation fund. Deductions are reflected in the item "Reserves for future periods" in cost. A list of changes that should be made to the legislation is provided

- K. K. Khodorovich [22] The amount of funds for liquidation is established in the project documentation, the formation of a liquidation fund (LF) is on a bank deposit with a special mode of use. Two possibilities for generating income – income from a deposit or creating an investment portfolio. Liquidation fund resources are excluded from the bankruptcy estate in bankruptcy. The changes that should be made to the legislation are justified
- R. R. Safin, P. A. Maslovsky, V. B. Khakimov [23] In modern conditions, the creation and accumulation of a LF is economically unprofitable for the subsoil user, federal and regional budgets. Large companies developing several fields must create one common LF for all subsoil areas. For small and medium-sized ones, it is advisable to create it no earlier than 1.2–2.0 years before the end of production. Funding guarantees can be provided by pledging liquid assets or creating a non-profit fund on the principles of mutual insurance. The technology of financial support must be chosen by the subsoil user
- V. B. Khakimov, Yu. S. Sergeev, A. N. Chernikov [24] T. V. Petrova, E. Ya. Frank [25] Characteristics of mutual insurance, which can be used to guarantee financing of liquidation work  
Proposal for the creation of a regional reclamation fund. Monthly contributions to the fund by subsoil users (source – cost and (or) net profit). The Fund identifies priorities and sequence of reclamation, holds tenders to attract reclamation contractors and finances them. The Fund's authorities participate in justifying the expenditure of funds and carry out control functions. The Fund system includes two subsystems (formation of financial resources and their distribution)
- K. I. Bobko, T. V. Petrova [26] Analysis of the experience of the mechanism for monitoring and ensuring reclamation in China, the USA, Australia and Germany. The results of the comparison allow us to conclude that it is advisable to use the mechanism for monitoring and ensuring reclamation used Germany
- Yu. A. Manakov [27] Creation of a regional non-profit fund for the reclamation of disturbed lands. The financial source of the Fund is the annual budgets of coal enterprises for reclamation. For the money transferred to the fund, enterprises receive an acceptance certificate for reclaimed land. The Fund controls the performance of work by the contractor and publishes reports on the use of property in the public press. The activities of the Fund are supervised by the Board of Trustees. In addition to payments from coal enterprises, money from the federal or regional budgets, voluntary contributions and donations can be transferred to the Fund
- A. V. Yakovleva [28] Создание Проектного фонда рекультивации (ПФР) по каждому проекту разработки месторождений с учетом его технико-экономических показателей. Главгосэкспертиза оценивает вероятность достижения заданной суммы рекультивации. Источник финансирования средств ПФР – себестоимость. Предполагается открытие банковского целевого депозита и исключение налога на доход, полученный по банковскому депозиту. Отчисления осуществляются регулярно за весь период эффективной работы предприятия с учетом объема добычи, корректировки на величину инфляции и депозитной ставки банка. Создание ПФР требует изменений в законодательстве  
Creation of a Project Reclamation Fund (PRF) for each field development project, taking into account its technical and economic indicators. General Board of State Expert Review assesses the probability of achieving a given reclamation amount. The source of financing for the PRF is cost. It is planned to open a bank deposit and exclude tax on income received from a bank deposit. Deductions are made regularly for the entire period of effective operation of the enterprise, taking into account the volume of production, adjustments for inflation and the bank's deposit rate. The creation of the PRF requires changes in legislation

of liquidation work are shifted to the state, or violate design decisions, do not comply with established environmental protection standards, etc.

An analysis of proposals from domestic scientists and practitioners regarding the creation of such a fund to accumulate the necessary funds for liquidation work, including reclamation, and rich foreign experience indicates the presence of a wide variety of approaches. And if in Russia its formation is at the stage of methodological development, then abroad liquidation funds, fees for reclamation and obligations of subsoil users to eliminate damage caused by subsoil development have been used for quite a long time.

Since 1972, in the EU countries, the “extract-reclaim” principle has been implemented in the development of environmental policy [2]. In the UK, the law requires the license holder to demonstrate assurance that funds will be available to carry out the work after the mine closes. The National Coal Department may require an advance payment from the subsoil user (at least 30% of the cost of the upcoming liquidation work) even before the license expires, and later organizes their

implementation in accordance with the mine liquidation plan. The Coal Industry Act (1994) provides for periodic payments by the subsoil user to a special account (fund) opened in a bank and managed by the coal industry department. The amount of payments depends on the cost of eliminating damage caused by the development of the field. Funds from the accounts on which interest is accrued are earmarked and are used only to eliminate the consequences [8]. It should be especially noted that in the UK the state has recognized its obligations to finance work related to the elimination of past damage.

Of interest is the system for liquidation of oil and gas facilities that operates in Norway. It provides insurance for all types of oil operations and must cover damage caused by natural disasters, damage to the environment, demolition of structures and elimination of traces of their presence, and personnel insurance. All costs associated with the liquidation of the fishery are deducted from the tax base [13]. This issue has also been resolved in certain neighboring countries, in particular in Kazakhstan. The Model Contract for conducting subsoil use operations in the Republic of Kazakhstan, approved



by Government Decree no. 1015 dated July 31, 2001, describes the procedure for liquidation work and the formation of a liquidation fund.

The comparative features of various approaches to the creation of liquidation funds are reflected in the “Guidelines for the implementation of financial support for the closure of mining facilities (workings)”, released in 2009 by the World Bank [14]. According to his estimates, Trust funds (an agreement between a trust commission and a client) are most widespread. They are transparent in their creation, inexpensive to establish, do not charge interest, but are characterized by cumbersome administrative procedures, and in the event of premature closure, the amount of funds may be insufficient. In addition, financial guarantees include insurance, guarantees, irrevocable letters of credit (known as bank guarantees), bank deposits, and flexible (other, such as bilateral) forms. Each of them has its own advantages and disadvantages, which are discussed in [13, 15, 16].

A number of publications discuss options for the formation and use of a liquidation fund in Russian conditions; their numerousness is noted by the authors [17]. Some recommendations are summarized in table 2.

A bill developed in accordance with the instructions of the Government of December 14, 2011 No. SN-P9-8912 and on the instructions of the President of the Russian Federation on the implementation of subparagraph “p” of paragraph 3 of section 1 of the minutes of the meeting of the Commission under the President of the Russian Federation on strategic development of the fuel and energy complex and environmental security dated December 18, 2018 No. Pr-2418, was not accepted. Its consideration took place despite the fact that the draft of this act has already been adjusted three times. Based on an assessment of the draft act of the Ministry of Economic Development of the Russian Federation, it was concluded that it does not establish new powers of the authorities of the constituent entities of the Russian Federation and local governments and the risk of imposing additional costs on the corresponding budgets of the budget system of the Russian Federation [29].

The first recommendations on the creation of a liquidation fund appeared in early 2010 [2, 6–12, 19, 30–32]. Proposals of a fairly general nature were gradually fleshed out. In particular, V. B. Nechaev in his work [18] determines the procedure for forming a regional liquidation fund and calculating the value of the liquidation fund depending on mining-geological and mining-technological, as well as socio-economic conditions, divided into light, medium and severe. Reclamation costs in the total cost of liquidation work range from 4.5% (light conditions) to 9% (severe conditions). From the analysis of the size of the liquidation fund it follows that as conditions become more complex, the costs of eliminating environmental consequences, including reclamation, increase. In general, the total cost of eliminating environmental consequences increases by 3.43 times, and for eliminating social consequences by 2.18 times, i. e., deterioration of environmental conditions requires a large increase in costs [32, 33].

The authors of [7] propose two options for creating a liquidation fund when transferring funds to the current account of the Federal Treasury: purchasing state target bonds or charging interest on the current account funds, the amount of which is established by the Government of the Russian Federation. The works [12, 19] substantiate the active and passive model of liquidation fund management. Passive involves the accumulation of funds on a bank deposit with the receipt of a constant interest, active – investing in government securities, corporate securities, etc., i. e., the formation of an investment portfolio with greater income. A number of studies pay attention to justifying the size of the liquidation fund, as in works [2, 11], and even propose projects for their creation and use [6].

The author [2] proposes to take into account in the costs of liquidation work, in addition to funds for performing a set of liquidation works, funds for conducting an audit of the consequences, for developing a project, and for maintaining the organizational structure. Economic and statistical models for determining funds for the implementation of liquidation work in mines (open-pit mines) are presented, the values of the deposit and the standards of monthly deductions (the share of costs in the cost), the size of which increases with a decrease

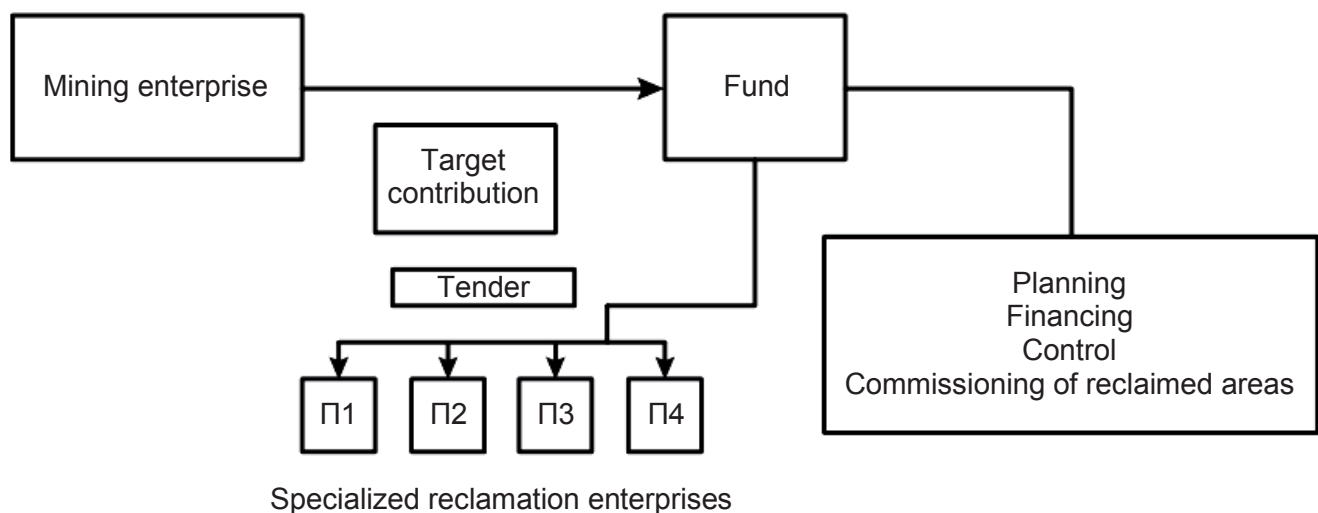


Figure 1. Scheme of work of the non-profit Fund for Reclamation of Disturbed Lands [27]

Рисунок 1. Схема работы некоммерческого Фонда рекультивации нарушенных земель [27]

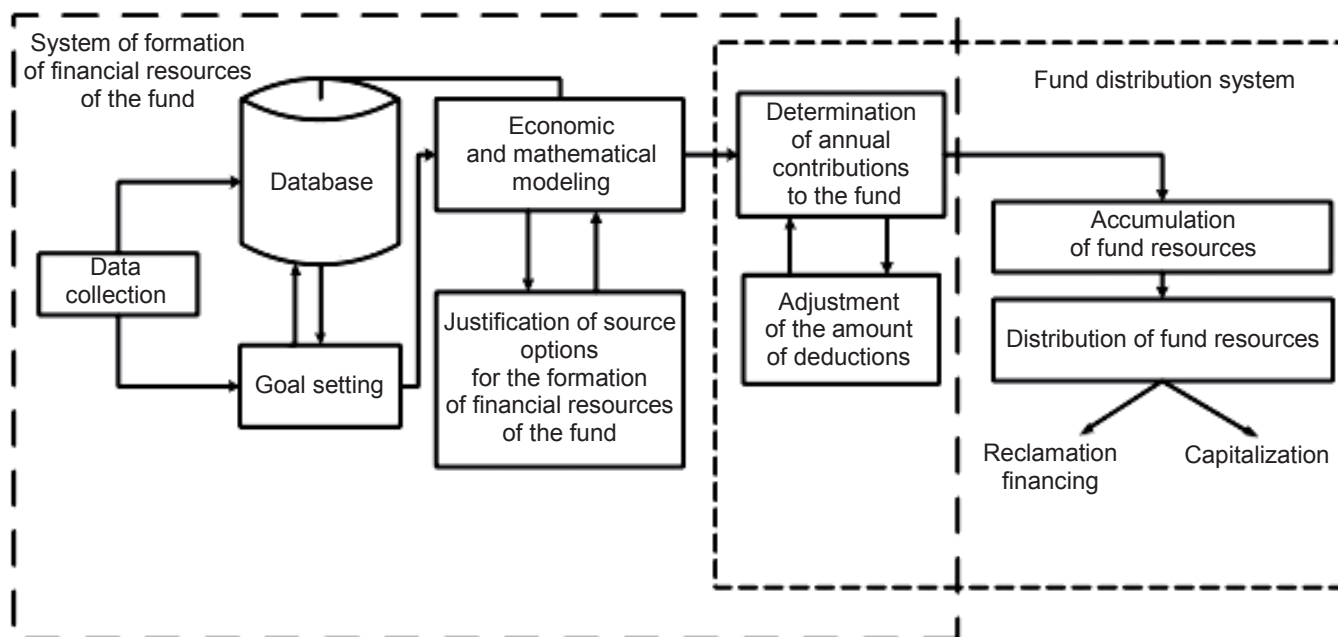


Figure 2. System of financing and distribution of financial resources for reclamation work [25]

Рисунок 2. Система финансирования и распределения финансовых средств для проведения работ по рекультивации [25]

in the operating period and a decrease in annual production, are justified. From the analysis it follows that the operating life has the greatest influence on this value (a change in the standard by 2.8 times), a change in annual production reduces the standard by approximately 2 times (for a service life of more than 20 years – three times). In works [15, 21], depreciation is considered as a source of contributions to the liquidation fund. The deduction rate recommended by [20] is 2.5–20%; in [21], the minimum rate was reduced to 1%. The draft regulations on the creation and use of liquidation funds, intended for coal mining enterprises, were not adopted.

The authors of [13], formulating recommendations for the creation of a target liquidation fund (TLF), note the need to adjust the tax legislation, allowing contributions to the TLF at the expense of operating expenses, and not profit, as is currently determined by tax legislation. Of interest are the authors' proposals for changes to the legislation of the Russian Federation necessary to create the conditions for the formation of the Central Financial Facility. Recommendations for changes in legislation are also given in [22]. The authors of [23] analyze the possibilities of applying the Draft Law on the creation and use of a LF and justify the financial unprofitability of its creation from the first years of field operation, and offer the most reasonable options for creating a LF for large, small and medium-sized companies. As a financial guarantee, it is recommended to turn to mutual insurance [23, 24, 33]. The work [25] substantiates the feasibility of creating a regional fund for the reclamation of disturbed lands, using the example of the Kemerovo region, the model of which was developed by specialists from the Kemerovo region [34] and specialists from the Institute of Human Ecology SB RAS [27]. The scheme of the proposed Fund is shown in fig. 1.

The concept of the fund was published in the open press [35, 36] and received the approval of deputies of the Regional Council of the Kemerovo region, who adopted a number of

documents sent to the Government of the Russian Federation and the State Duma, including an appeal on the need for the speedy adoption of the Federal Law "On reclamation of disturbed lands" [27]. The legal basis for the creation of the Fund, developed in the Kemerovo region, is the long-term municipal target program "Reclamation of disturbed lands, restoration of degraded lands and protection of the territory of the city of Novokuznetsk from adverse natural and man-made processes for the period 2012–2017", as well as Law of the Kemerovo Region No. 11-OZ "On eliminating the consequences of the negative impact of the economic activities of enterprises on the environment during their liquidation" and recommendations of parliamentary hearings regarding "Reclamation of disturbed lands of the Kemerovo Region. Legislative support for industrial waste management activities". The authors detail the model of a non-profit fund developed by employees of the Institute of Human Ecology of the SB RAS in terms of the formation of a trust fund (Fig. 2).

The proposed system consists of two subsystems: the formation of financial resources (FFR) and distribution (DFR). Based on the information, using economic and mathematical modeling, sources of deductions (cost and (or) net profit) are selected. Determining the amount of fund resources is also based on the collected information on the scale of the violation and project costs for reclamation.

The analysis of world experience carried out in [26] allowed the authors to recommend using the German experience in organizing control and ensuring reclamation. A more extensive generalization of world experience distinguishes the work [28]. In Germany, laws at the federal level establish the requirements of financial guarantees for obtaining a license for the right to use subsoil; recommendations on the determined sizes are formed by the lands. For example, in Saxony, instructions are used for assessing financial collateral; the decision on the amount of collateral is made by the mining department; it

can be differentiated over time. Reclamation costs are included in the cost. According to experience, they amount to 1.5–2.5% of the cost of coal.

### Conclusion

There is currently no unified approach to determining the future cost of reclamation. Most often, the number of financial guarantees is established on a long-term basis between the responsible government agency and the subsoil user. In general, a generalization of foreign and domestic experience in financing reclamation, including as part of liquidation work, shows that approaches to solving this problem are diverse, both in relation to determining the number of financial guarantees and the procedure for accumulating funds. Today, for domestic practice, the issue of financing is very relevant, as evidenced by

the Project for the creation and use of a LF, developed by teams of academic and research institutes, as well as examples of the preparation of documentation on the creation and use of such trust funds at the regional level.

From the experience of foreign countries, it follows that various types of financial guarantees should be used, the type of which is chosen by the subsoil user himself. Preliminary work is related to amendments to legislation (Federal Law “On Subsoil”, Land Code, Forestry Code, etc.), allowing for the implementation of various types of guarantees. In each case, a justification is required for the procedure for determining the number of financial guarantees, the amount of monthly or quarterly contributions, the period for making them, etc.

### REFERENCES

- 1978, Instructions on the procedure for financing land reclamation work: approved by the Ministry of Finance of the USSR, State Planning Committee of the Council of Ministers of the USSR, State Bank of the USSR, 16 p. (*In Russ.*)
- Buer A. O., Porunov A. N. 2002, Tax Code and land reclamation. *Zakon i pravo* [Law and order], no. 7, pp. 56–57. (*In Russ.*)
- 1977, Regulations on the procedure for transferring reclaimed lands to land users by enterprises, organizations, institutions developing deposits of minerals and peat, carrying out geological exploration, survey, construction and other work related to soil disturbance. (*In Russ.*) URL: <http://docs.cntd.ru/document/9014801>
- Azimov B. V., Navitny A. M. 2002, Problems of eliminating environmental consequences when closing coal mines and open pits. *Ugol'* [Coal], no. 3, pp. 10–12. (*In Russ.*)
- 1999, Regulations on the formation and use of the liquidation fund during the implementation of the production sharing agreement: approved by the Decree of the Government of the Russian Federation, no. 74. (*In Russ.*) URL: <http://docs.cntd.ru/document/901738367>
- Boguraev A. I., Kaplunov Yu. V., Bogopolsky I. E. 2006, Economic and organizational principles for regulating liquidation work during the closure of mining enterprises. *Gornyy zhurnal* [Mining journal], no. 6, pp. 82–86. (*In Russ.*)
- Pevzer M. E., Kiryukhina E. M., Korneeva I. P. 2003, Compensation for environmental damage during the liquidation of mining enterprises. *Gornyy zhurnal* [Mining journal], no. 3, pp. 86–90. (*In Russ.*)
- Smitten M. K. 2002, On possible mechanisms for fulfilling obligations related to the liquidation of coal mining enterprises. *Ugol'* [Coal], no. 11, pp. 13–15. (*In Russ.*)
- Smitten M. K. 2004, Methods of forming and using the liquidation fund of a coal mining organization. *Ugol'* [Coal], no. 7, pp. 56–61. (*In Russ.*)
- Ivanova V. A., Stepanov P. O. 2003, Organization of the work of the target reserve and liquidation fund of an oil and gas producing enterprise. *Neftyanoye khozyaystvo* [Oil industry], no. 6, pp. 24–27. (*In Russ.*)
- Ivanova V. A., Korobeinikov N. Yu. 2003, Economic mechanism for the formation and use of a target reserve liquidation fund. *Neftyanoye khozyaystvo* [Oil industry], no. 2, pp. 16–18. (*In Russ.*)
- Musina D. R. 2004, Resource support for liquidation work in oil and gas production, PhD thesis. Ufa, 155 p. (*In Russ.*)
- Anashkin O. S., Kryukov V. A. 2012, On the problem of liquidation of fixed production assets at mineral deposits. *Mineral'nyye resursy Rossii* [Mineral resources of Russia], no. 2, pp. 18–27. (*In Russ.*)
- 2009, Guidelines for the implementation of Financial Surety for Mine Closure, 64 p. URL: <http://hdl.handle.net/10986/18386>
- Bylbas O. V. 2009, Economic justification of systems for ensuring liquidation work during the closure of coal mining enterprises, PhD thesis. Moscow, 142 p. (*In Russ.*)
- 2010, Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies: Executive Summary. Version 3.0 – World Bank Multistakeholder Initiative, 186 p.
- Strovsky V. E., Kosopalov O. V. 2015, Specific features of liquidation works and their financing. *Izvestiya vuzov. Gornyy zhurnal* [News from universities. Mining journal], no. 8, pp. 35–43. (*In Russ.*)
- Nechaev V. B. 2002, Formation of an economic mechanism for mitigating the consequences of the liquidation of coal mining enterprises, PhD thesis. Moscow, 16 p. (*In Russ.*)
- Karpov V. G., Khalikova M. A., Musina D. R. 2003, Organizational and economic mechanism for the formation and management of a liquidation fund in an oil and gas producing enterprise. *Neftgazovoye delo* [Oil and gas business]. (*In Russ.*) URL: [http://www.ogbus.ru/authors/Karpov/Karpov\\_1.pdf](http://www.ogbus.ru/authors/Karpov/Karpov_1.pdf)
- Voskoboynik V. P. 2010, Mechanism for financing liquidation work of coal mining organizations. *Ugol'* [Coal], no. 1, pp. 11–15. (*In Russ.*)
- 2011, Draft regulations on the creation of liquidation funds by coal mining enterprises to finance liquidation and preservation of mining enterprises. Moscow, 28 p. (*In Russ.*)
- Khodorovich K. K. 2013, The problem of financial and economic support for the liquidation processes of mining enterprises. *Ratsional'noye osvoyeniye nedr* [Rational development of subsoil], no. 1, pp. 17–21. (*In Russ.*)
- Safin R. R., Maslovsky P. A., Khakimov B. V. 2013, Liquidation funds. Problems and solutions. *Mineral'nyye resursy Rossii. Ekonomika i upravleniye* [Mineral resources of Russia. Economics and Management], no. 3, pp. 14–17. (*In Russ.*)
- Khakimov B. V., Sergeev Yu. S., Chernikov A. N. 2005, Mutual insurance and lending for geological prospecting work. *Mineral'nyye resursy Rossii. Ekonomika i upravleniye* [Mineral resources of Russia. Economics and Management], no. 4, pp. 42–46. (*In Russ.*)
- Petrova T. V., Frank E. Ya. 2014, Creation of a financial support system for reclamation work in resource-extracting regions. *Diskussiya* [Discussion], no. 1 (42), pp. 69–72. (*In Russ.*)
- Bobko K. I., Petrova T. V. 2015, Mechanisms for ensuring and monitoring reclamation in the context of world experience. *Gornyy informatsionno-analiticheskiy byulleten'* [Mining information and analytical bulletin], no. 3, pp. 271–280. (*In Russ.*)
- Manakov Yu. A. Disturbed lands of Kuzbass. The way to solve the problem is a reclamation fund. (*In Russ.*) URL: <http://ineca.ru/&gr=bulletin/arhiv/012jipg=013>
- Yakovleva A. V. 2015, Organizational and economic mechanism for ensuring land reclamation during open-pit mining, PhD thesis. Saint Petersburg, 24 p. (*In Russ.*)
- 2020, Conclusion on the assessment of the regulatory impact on the draft federal law “On amendments to certain legislative acts of the Russian Federation (regarding the creation of liquidation funds by subsoil users)” 29208-AH/D264, 7 p. (*In Russ.*)

30. Krassov O. I. 2012, Improving the legal regulation of land reclamation. *Ekologicheskoye pravo* [Environmental law], no. 6, pp. 2–8. (*In Russ.*)
31. Likhтерman S. S., Nechaev V. B., Ponomarev V. P. 2001, On the creation of a mechanism for mitigating the environmental and social consequences of the liquidation of coal mining enterprises. *Ugol'* [Coal], no. 10, pp. 9–11. (*In Russ.*)
32. Ponomarev V. P., Nechaev V. B. 2001, Integrated cost estimates of measures to eliminate the environmental and social consequences of the closure of mines and open-pit mines. *Ugol'* [Coal], no. 11, pp. 45–48. (*In Russ.*)
33. Orlov V. P., Khakimov B. V., Sergeev Yu. S. 2012, Environmental risk insurance during the development of oil fields on the continental shelf. *Geologiya nefi i gaza* [Geology of oil and gas], no. 1, pp. 93–97. (*In Russ.*)
34. Strategy for the socio-economic development of the Kemerovo region – Kuzbass until 2035. (*In Russ.*) URL: [https://www.economy.gov.ru/material/file/c461e87bcae53d7d6f06e406c0f24063/kem\\_obl.pdf](https://www.economy.gov.ru/material/file/c461e87bcae53d7d6f06e406c0f24063/kem_obl.pdf)
35. Kupriyanov A. N., Manakov Yu. A., Sorokin A. V. 2006, Non-profit Reclamation Fund for Kuzbass. Reclamation of disturbed lands in Siberia. Kemerovo, issue 2, p. 6. (*In Russ.*)
36. Manakov Yu. A. 2006, Dumps, or it's time to make strategic decisions. Kuzbass, no. 44, pp. 2–3. (*In Russ.*)

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## Финансовое обеспечение рекультивационных работ

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### Аннотация

**Актуальность.** В настоящее время горнодобывающая промышленность столкнулась с рядом экологических проблем, так как добыча полезных ископаемых связана с большой нагрузкой на окружающую среду. В результате происходит загрязнение атмосферного воздуха, водоемов и грунтов тяжелыми металлами, изменяется естественный ландшафт, происходят техногенные аварии и т. д. С ростом добычи растут и площади нарушенных земель, которые недропользователи обязаны восстанавливать до первоначального состояния.

**Цель работы** – выявление возможных схем финансового обеспечения рекультивационных работ.

**Методы исследования** – обобщение, системный подход, логический анализ, методы сравнения, аналогии.

**Результаты.** Обобщен и проанализирован опыт финансирования рекультивации в годы существования СССР, когда действовала Инструкция о порядке финансирования работ по рекультивации. Рассмотрены особенности финансирования рекультивации в странах ЕС. Основное внимание сосредоточено на рекомендациях отечественных исследователей по созданию ликвидационных фондов, которые предполагают выделение основной доли средств на рекультивацию, а также резервно-ликвидационных и рекультивационных фондов. Из анализа следует, что решения данной проблемы многообразны как в отношении определения размера финансовых средств, так и порядка аккумуляции этих средств. В каждом случае требуется обоснование порядка определения суммы финансовых гарантий, размера ежемесячных или ежеквартальных отчислений, период их внесения и т. д. Более подробно рассматриваются рекомендации о создании фонда рекультивации земель в Кемеровской области, правовые основы его создания и поддержка со стороны депутатских слушаний по вопросам «Рекультивация земель Кемеровской области».

**Заключение.** Каждая из рассмотренных моделей финансирования рекультивации может использоваться на практике. Предварительная работа предполагает внесение соответствующих изменений в ряд федеральных законов и других нормативно-правовых документов. Несомненно, целесообразно принятие ФЗ «О рекультивации».

**Ключевые слова:** недропользование, добыча полезных ископаемых, нарушенные земли, рекультивация, финансирование, гарантии, специализированные фонды.

### ЛИТЕРАТУРА

1. Инструкция о порядке финансирования работ по рекультивации земель: утв. Министерством финансов СССР, Госпланом Совета министров СССР, Госбанком СССР 21.06.1978 г. 16 с.
2. Бурер А. О., Порунов А. Н. Налоговый кодекс и рекультивация земель // Закон и право. 2002 № 7. С. 56–57.
3. Положение о порядке передачи рекультивированных земель землепользователям предприятиями, организациями, учреждениями, разрабатывающими месторождения полезных ископаемых и торфа, проводящими геологоразведочные, изыскательские, строительные и иные работы, связанные с нарушением почвенного покрова: утв. Минсельхозом СССР от 18.02.1977 г. URL: <http://docs.cntd.ru/document/9014801>
4. Азимов Б. В., Навитный А. М. Проблемы ликвидации экологических последствий при закрытии угольных шахт и разрезов // Уголь. 2002. № 3. С. 10–12.
5. Положение о формировании и использовании ликвидационного фонда при реализации соглашения о разделе продукции: утв. Постановлением Правительства РФ от 8.07.1999 № 74. URL: <http://docs.cntd.ru/document/901738367>
6. Богураев А. И., Каплунов Ю. В., Богопольский И. Е. Экономические и организационные принципы регулирования ликвидационных работ при закрытии горнодобывающих предприятий // Горный журнал. 2006. № 6. С. 82–86.
7. Певзер М. Е., Кирюхина Е. М., Корнеева И. П. Возмещение экологического ущерба при ликвидации горных предприятий // Горный журнал. 2003. № 3. С. 86–90.
8. Смиттен М. К. О возможных механизмах выполнения обязательств, связанных с ликвидацией предприятий по добыче угля // Уголь. 2002. № 11. С. 13–15.
9. Смиттен М. К. Способы формирования и использования ликвидационного фонда организации по добыче угля // Уголь. 2004. № 7. С. 56–61.
10. Иванова В. А., Степанов П. О. Организация работы целевого резервно-ликвидационного фонда нефтегазодобывающего предприятия // Нефтяное хозяйство. 2003. № 6. С. 24–27.
11. Иванова В. А., Коробейников Н. Ю. Экономический механизм формирования и использования целевого резервно-ликвидационного фонда // Нефтяное хозяйство. 2003. № 2. С. 16–18.

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12. Мусина Д. Р. Ресурсное обеспечение ликвидационных работ в нефтегазодобыче: дис. ... канд. экон. наук. Уфа, 2004. 155 с.
13. Анашкин О. С., Крюков В. А. О проблеме ликвидации основных производственных фондов на месторождениях полезных ископаемых // Минеральные ресурсы России. 2012. № 2. С. 18–27.
14. Guidelines for the implementation of Financial Surety for Mine Closure. 2009. June. 64 p. URL: <http://hdl.handle.net/10986/18386>
15. Былбас О. В. Экономическое обоснование систем обеспечения ликвидационных работ при закрытии угледобывающих предприятий: дис. ... канд. экон. наук. М., 2009. 142 с.
16. Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies: Executive Summary. Version 3.0 – World Bank Multistakeholder Initiative. 2010. March. 186 p.
17. Стровский В. Е., Косопалов О. В. Специфические особенности постановки ликвидационных работ и их финансирования // Известия вузов. Горный журнал. 2015. № 8. С. 35–43.
18. Нечаев В. Б. Формирование экономического механизма смягчения последствий от ликвидации угледобывающих предприятий: автореф. дис. ... канд. экон. наук. М., 2002. 16 с.
19. Карпов В. Г., Халикова М. А., Мусина Д. Р. Организационно-экономический механизм формирования и управления ликвидационным фондом в нефтегазодобывающем предприятии // Нефтегазовое дело. 2003. Электронный журнал. URL: [http://www.ogbus.ru/authors/Karpov/Karpov\\_1.pdf](http://www.ogbus.ru/authors/Karpov/Karpov_1.pdf)
20. Воскобойник В. П. Механизм финансирования ликвидационных работ угледобывающих организаций // Уголь. 2010. № 1. С. 11–15.
21. Проект положения о создании угледобывающими предприятиями ликвидационных фондов для финансирования работ по ликвидации, консервации горных предприятий. М.: 2011. 28 с.
22. Ходорович К. К. Проблема финансово-хозяйственного обеспечения процессов ликвидации горнодобывающих предприятий // Рациональное освоение недр. 2013. № 1. С. 17–21.
23. Сафин Р. Р., Масловский П. А., Хакимов Б. В. Ликвидационные фонды. Проблемы и решения // Минеральные ресурсы России. Экономика и управление. 2013. № 3. С. 14–17.
24. Хакимов Б. В., Сергеев Ю. С., Черников А. Н. Взаимное страхование и кредитование геолого-поисковых работ // Минеральные ресурсы России. Экономика и управление. 2005. № 4. С. 42–46.
25. Петрова Т. В., Франк Е. Я. Создание системы финансового обеспечения работ по рекультивации в ресурсодобывающих регионах // Дискуссия. 2014. № 1(42). С. 69–72.
26. Бобко К. И., Петрова Т. В. Механизмы обеспечения и контроля проведения рекультивации в разрезе мирового опыта // ГИАБ. 2015. № 3. С. 271–280.
27. Манаков Ю. А. Нарушенные земли Кузбасса. Путь решения проблемы – фонд рекультивации. URL: <http://ineca.ru/&gr=bulletin/архив/012.jpg=013>
28. Яковлева А. В. Организационно-экономический механизм обеспечения рекультивации земель при открытых горных работах: автореф. дис. ... канд. экон. наук. СПб, 2015. 24 с.
29. Заключение об оценке регулирующего воздействия на проект федерального закона «О внесении изменений в отдельные законодательные акты Российской Федерации (в части создания пользователями недр ликвидационных фондов)» 29208-АХ/Д264 от 8 сентября 2020 г. 7 с.
30. Крассов О. И. Совершенствование правового регулирования рекультивации земель // Экологическое право. 2012. № 6. С. 2–8.
31. Лихтерман С. С., Нечаев В. Б., Пономарев В. П. О создании механизма смягчения экологических и социальных последствий от ликвидации угледобывающих предприятий // Уголь. – 2001. № 10. С. 9–11.
32. Пономарев В. П., Нечаев В. Б. Укрупненные стоимостные оценки мероприятий по ликвидации экологических и социальных последствий от закрытия шахт и разрезов // Уголь. 2001. № 11. С. 45–48.
33. Орлов В. П., Хакимов Б. В., Сергеев Ю. С. Страхование экологического риска при освоении нефтяных месторождений континентального шельфа // Геология нефти и газа. 2012. № 1. С. 93–97.
34. Стратегия социально-экономического развития Кемеровской области – Кузбасса до 2035 года [https://www.economy.gov.ru/material/file/c461e87bcae53d7d6f06e406c0f24063/kem\\_obl.pdf](https://www.economy.gov.ru/material/file/c461e87bcae53d7d6f06e406c0f24063/kem_obl.pdf)
35. Куприянов А. Н., Манаков Ю. А., Сорокин А. В. Некоммерческий Фонд рекультивации для Кузбасса // Рекультивация нарушенных земель в Сибири. Кемерово: КРЭОО «Ирбис», 2006. Вып. 2. С. 72–77.
36. Манаков Ю. А. Отвалы, или пора принимать стратегические решения // Кузбасс. 2006. 15 марта (№ 44). С. 2–3.

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