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Ministry of Land Reclamation
Republic of Tajikistan



GUIDELINES

ON THE IMPLEMENTATION OF DRINKING WATER SUPPLY PROJECTS IN TAJIKISTAN

Dushanbe 2009



**MINISTRY OF LAND RECLAMATION
AND WATER RESOURCES
OF THE REPUBLIC OF TAJIKISTAN**

DECREE

From October 15, 2009

№307,

Dushanbe

Endorsement of the “Guidelines
on the implementation of drinking water
supply projects in Tajikistan”

In accordance with the Memorandum of Understanding between the Ministry of Land Reclamation and Water Resources of the Republic of Tajikistan and UNDP Tajikistan from November 5, 2008 and on the basis of the Regulation of the Ministry of Land Reclamation and Water Resources of the Republic of Tajikistan approved by the resolution of the Government of Tajikistan from December 28, 2009 №595,

Order:

1. Endorse the “Guidelines on the implementation of drinking water supply projects in Tajikistan”, which is prepared with financial support of the Swiss Development Agency and UNDP Tajikistan in the frame of the project “Encouraging collaboration between governmental institutions, donors and organizations in the field of rural drinking water – to improve accountability, sustainability and effectiveness”.
2. These Guidelines are recommended to use for all the Departments and Institutions of the Ministry, and other legal and natural entities implementing rural drinking water supply projects.
3. Supervision over the current Order is delegated to the First Deputy Minister Inoyatov Kh.

Minster

Said Yoqubzod

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List of Abbreviations

Field Supervision	Technical supervision of engineering-investigation organizations
Architecture Construction Agency	Agency on construction and Architecture under the Government of Tajikistan
WC	Watershed Construction
GOST	State Standard
SC IMSP	State Committee on the Investment and Management of State Property in the Republic of Tajikistan
SUE KhMK	State Unitary Enterprises “Khajigii Manziliyu Komunali”
SSES	State Sanitation and Epidemiological Supervision
PRSD	Poverty Reduction Strategy Document
Jamoat	Local self-governance body in settlements and villages
ZSP	Zones of Sanitation Protection
CPE	Committee on Protection of Environment under the Government of RT
IO	International Organization
MoU	Memorandum of Understanding
MN MO RT	Majlisi Namoyandagon Majlisi Oli (Lower Chamber of the Parliament of Tajikistan)
MLRWR	Ministry of Land Reclamation and Water Resources of RT
MoH	Ministry of Health of RT
MLSP RT	Ministry of Labor and Social Protection of RT

MEDT	Ministry of Economic Development and Trade of RT
NDS	National Development Strategy of Tajikistan for the period of 2006-2015 in the sphere of “Water Supply and Sanitation” (2005)
NGO	Non-governmental Organizations
UE RT	Union of Employers of Tajikistan
UN	United Nations
WP	Programme on improving clean drinking water supply systems to the population of Tajikistan for the period of 2008-2020
EIA	Engineering Investigating Activities
UNDP	United Nations Development Programme
PPD	Project Price Documentation
RT	Republic of Tajikistan
Manual	Manual on the Implementation of Drinking Water Supply Projects in Tajikistan
PSW	Permission for Special Water Usage
BCW	Building and Construction Works
SDWST	Strategy on the Development of the Water Sector of Tajikistan (2006)
USSR	Union of Soviet Socialist Republics
CIS	Commonwealth of Independent States
Tajikstandard	Agency on standardization, metrology, certification and trade inspection of RT
Technadzor	Technical Supervision

TSV	State Department “Glavnoye Upravleniye «Tajikobdekhhot»; (in the past it had a title “Department on Construction, Projecting and Exploitation of the Systems of Rural Drinking Water Supply and Irrigation of Pastures: “Tajikselkhozvodoprovodstroy”)
FIT RT	Federation of Independent Trade Unions of RT
Hukumat	District level Government
SDC	Swiss Development Agency
MDG	Millennium Development Goals
JRC	Jamoat Resource Centre

Terms and Definitions

Subscriber (user) – Person, owing, holding or managing the objects, systems of water supply and (or) sewage that is directly connected with the systems of municipal water supply and (or) sewage, who has signed a legal agreement with the water-and-sewage organization to issue (receipt) of water and (or) the intake (release) of waste waters.

Emergency – The disabling or break down of a water supply system, sewage or separate structures, equipment, which can lead to the termination or significant reduction of water delivery volume, quality of water or can cause the damage to the environment, property and public health.

Autonomous Water Supply System – Structures and facilities for water intake, preparation of the supply to the users without water supply for common use and closed for the common use.

Water Body – Concentration of water on the surface of the earth repeating its relief, or subsoil that have the borders, volume and features of a water regime.

Water Resources – Water stock from superficial and ground waters.

Water Passage – Hydraulic structure for the supply and withdrawal of water in the intended direction.

Water Intake Facility - Hydraulic structure to channel water to the water passage from the superficial water body, (reservoir or waterway) or underground water body.

Water Removal – Technological process, which ensures the intake of waste waters from the subscribers which the subsequent transfers to sewage disposal facilities.

Water Protection Zones – Territory directly adjoining the river-bed, various channels, water reservoirs, other water objects

equipped with a special water consumption regime to protect these objects from pollution, silting which causes erosion, blinding from driftwood and other negative effects, establish a favorable water regime.

Water-user –Person who has gained the legal right to use a water object in accordance to the set legal order for the centralized, non-centralized or autonomous water supply.

Water Consumer - Person that receives access to water according to the set legal order to satisfy the water use needs.

Water Pipe – Complex of structures including water intake, water pumping stations, water purification or preparation stations, water pipe networks and reservoirs which ensure anality water provision.

Water Supply System – System of pipes and structures assigned the water supply.

Water Supply – Activity to ensure access to water to users.

Water Management Activity – Activity of citizens and legal bodies to use, rehabilite and protect water objects.

Hygienic Norms of Water Supply Sources – System of organoleptic properties of water, with a maximum concentration of chemical, biological materials, bacterium and radiation which is defined by the sanitary regulations and ensures the use of water for drinking and common needs prior after the proper treatment of water.

State Water Cadastre – Set of systemized official data on the condition, use and protection of water objects.

State Register of Water Management Structures – Set of systemized data on registration of water management structures having complex characteristics including target assignment, legal, physical and geographical, hydrological, technical and economical and other indicators.

State Support – Validation and implementation of national level and local programs which provide to owners with centralized systems. Support can be provided to, but not limited organizations producing equipment, lathes, materials and reagents which satisfy drinking water needs, subsidies, subventions, privileged credits and customs facilities.

Limit of Balance Inventory – Line dividing the elements of a water supply system and (or) sewage and its structures between the owners according to the property status, economic management or operational control.

Limit of Operational Responsibility – the line dividing the elements of water supply system and (or) sewage (water pipe and sewage networks and its structures) according to the responsibilities (duties) for the operation of the elements of water supply and (or) sewage systems, which agreed by relevant parties. In the case of the absence of a legal agreement the limit of operational responsibility is defined by the limit of the balance inventory.

Customer – Person intended to be the subscriber.

Zone of Sanitary Control (ZSC) – the Space assigned for the sanitary control of water supply sources pollution and water pipe structures as well as the territories of their location.

Sources of Drinking Water Supply – Water objects or their parts containing water that meets the set hygiene quality standards and or might be used for water intake in drinking water supply systems.

Sewage Network - A System of pipelines, collectors, channels and structures to collect and waste disposal.

Tapping – Collection and running water to a particular bed-river for its full usage and protection from pollution.

Quality of Water – Water condition in the source and system that meets the set standards and requirements required by the consumers.

Laboratory Control – Analysis of drinking and waste waters in accordance with the acting sanitary standards and other regulatory documents.

Limit of Water Consumption (Water Removal) – Maximum limit of drinking and waste waters required for the particular period of time set by local authorities.

License – Permission to use water objects, which issued by the authorized state body to regulate the use and protection of water.

Monitoring – Supervision, evaluation and forecasting of the water condition.

Reliability of Water Supply System – Ability of the system to provide a particular regime (uninterrupted, per house schedule) of water supply to the user in accordance with set standards for the quality of drinking water.

Non-centralized System of Water Supply – Complex of engineering structures and facilities to intake and treat water, for common use.

Drinking Water Supply Rate – Estimated quantity of drinking water required to satisfy user needs within 24 hour period in a particular settlement. The object should have normal with functioning of drinking water supply, in case of malfunctioning and emergency situations.

Quality Standards of Drinking Water – Complex of indicators of chemical and microbiological composition of drinking water that ensures public health security and safety which is identified by scientific research methods and regulated by sanitation standards.

Operator of Drinking Water Supply and Sanitation System – person with legal status, involved in the operation of drinking water supply and sanitation systems.

Operational Control – Public enterprise, limited by the right to property for the targeted use right of ownership, use and disposition of property.

Organization of Drinking Water Supply –persons with legal status, operating and using a system of drinking water supply according to set standards to receive water for their own needs or transfer it to other persons.

Health Risk Assessment – Probability analysis of pool water quality to public health.

Drinking Water – Quality of water in its natural state or after treatment (purification, disinfection, adding of missing substances), which meets standards for drinking, production of food items or other common purposes.

Drinking Water Supply –Activity aimed to ensure needs in drinking water.

Surface Sources of Water Supply – Surface water objects (reservoirs and passages), suitable for water supply.

Underground Sources of Water Supply – Underground water objects, suitable for water supply.

Preparation of Water – Technological process that treats water to enable qualitative characteristics to the water to meet the standards and requirements for water use.

Permissive Documentation – Permission to connect to water supply systems (sewage), issued by the local authorities upon the agreement with local bodies of State Sanitation and Epidemiological Supervision, issued by water supply and sewage management.

Regime for Issuance (receiving) Drinking Water – Guaranteed consumption (per hour, second) or free water use for the subscriber's needs, according to the fixed regime.

Risk for Health – Probability of threat to public health, or threat for the future generations, as a consequence of pool water quality.

Unauthorized Use – Subscribes use of water supply and sewage systems without the agreement for issuance (receiving) and acceptance (release) of waste waters.

Above-limit Water Use – Volume of water, used by the subscriber for economic, drinking and industrial needs above the set limit.

Sanitary-engineering Activity – Disinfection and disposal of waste waters to ensure the sanitary control and improvement of river-side territories used for the activity.

Owner of Drinking Water Supply and Industrial Sewage Systems – Owner who manages its own property. The owner has the right to commit any actions with their property, which do not contradict the law or violate the rights of other owners persons.

Special Use of Water – Use of water via applying structures and technical facilities.

Waste Waters - Water released according to set standards to the water objects after its use from a polluted territory.

Schemes of Complex use and Protection of Water – The main water management, implementing to meet requirements of population the and economy of the state as well as the protection of water.

Economic Management – Enterprise limited by the right to receive property from the State as the owner exercising the right of ownership, use and disposition of property.

Centralized System of Water Supply – Complex of engineering structures and facilities for intake and treatment of water, storage, transportation to users according to set standards.

Legal Person – is considered to be the organization that owns, manages or operates a special property and is liable for it, they are able to purchase and perform material and personal no-material rights, incur obligations, and act as claimant and defendant in the court.

3. Introduction

Water is not only the living base but also an important factor for the formation of life quality and the health of population. Thus, an important factor to preserve the health of the nation is to prevent the negative impact of drinking water on public health.

Today the situation in the world is one third of the world population does not have adequate access water supply conditions. The republic of Tajikistan initiated the International Year of Fresh Water (2003) and the International Decade of Actions Water for life 2005-2015, supported by the UN General Assembly. These global events aim to solve the problems to meet the basic needs in safe drinking water that can be made available through adequate development of the sewage systems. In Tajikistan, approximate 52.3% (3.6 million people), including 20% of the rural population have access drinking water. The rest of the population (3.4 million people of people) use water from unsecured sources that do not meet sanitary and epidemiological requirements.

Due to the high amortization of water supply systems and increasing breakdown the rate of loss of rate drinking water is estimated at 50-60%. There are contamination hazards due to the unsealing of pipes and armature. Limitation of water supply is for 180 days a year, and is one to the deficit of the power in autumn-winter season in Tajikistan. Water supply in this period is usually for a maximum 5-6 hours/day.

During the Soviet period, the water supply management was implemented in three main directions: water supply of cities and district centers; water supply of rural areas, and water supply of industrial enterprises and settlements. There was a clear system of projecting, construction, reconstruction, overall and current repairs, as well as the operation of the water supply system. The funding of these events was founded mainly from state subsidies, water users, kol-khozs and cooperatives.

With the change of the political situation and transfer to the market relations, the Soviet mechanism of water supply management has broken down and has not been adequate restored through its new

management. As a result, the investments into the sphere of drinking water supply are restrained.

The Millennium Development Goals envisage the vitally important goal to reduce the number of people that do not have access to the safe drinking water by 50 %. To solve this strategic goal the Government of the Republic of Tajikistan adopted the following:

- Program to improve the provision of safe drinking water to the population of the RT for 2008-2020;
- National Development Strategy of the RT for 2006-2015 on «Water supply and sanitary» sector;
- Poverty Reduction Strategy Paper.

Implementation of this and other documents will ensure the increase of access of the population of the RT to the drinking water up to 90%, including the rural population from 20% (in 2007) up to 51% (in 2020), and sewage from 5% (in 2007) up to 65% (2015).

The current poor condition of water supply and sewage systems is predetermined by the lack of legal acts of various levels, mechanisms to regulate the property relations and status of the fixed assets, weakness of the existing management structures, unclear distribution of responsibilities, absence of accessible regulatory documentation on planning and projects' implementation, security of the sustainable operation system, staff training, inconformity of actions, low awareness and passivity of population.

The inaccessibility of legal acts and instructive documents hampers the project's rationale, initiation and adoption of the particular decisions by the organizations and donors.

The necessity to develop the code of rules and regulations, revealing the general order for the project initiators, funding organizations and decision makers became evident. Analysis and summarizing the experience on water supply management in Tajikistan and current situation, considering the workshops and meetings at the community and ministerial level, as well as thematic working groups helped to prepare the «Guideline on implementation of drinking water projects in the Republic of Tajikistan» («Guideline»). This document is developed within the framework of the project between the Swiss Cooperation Office and UNDP in Tajikistan: «Encouraging

collaboration between governmental institutions, donors and organizations in the field of rural drinking water – to improve accountability, sustainability and effectiveness» with participation of the Ministry of Land Reclamation and Water Resources of the RT.

The Guideline reveals the involvement of the key ministries and institutions, various organizations working in the sphere of drinking water supply and is devoted to the legal, organizational and technical, finance and economic regulation of water supply projects, increase of their sustainability within the frameworks of the existing provisions aimed to improve the activity.

This Guideline is envisaged for the wide audience interested in the water supply issues, including organizations and persons who intend to participate in construction and rehabilitation of the existing water supply system. It also might be used in educational institutions for training of staff involved in drinking water supply.

The working group expresses the hope that this Guideline will:

- facilitate mutual understanding among the stakeholders;
- improve the coordination and interaction on local and republican levels
- optimize the structure of drinking water supply management;
- help to understand the existing regulation and transparency of procedures in drinking water projects' implementation;
- build the capacity of state structures and share the information at all levels between the stakeholders.

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4. Implementation of the Program “Improved Drinking Water Supply for the Population of the Republic of Tajikistan 2008-2020”

The competence of the Government of RT includes development, validation and implementation of the national programs in the area of effective use, protection of water resources and development of drinking water supply systems.

As of January 1, 2009 the number of population in the RT was 7, 373 mln people, including rural population - 5, 432 mln people. In RT there are: cities - 17; settlements – 55; areas – 3; rural districts - 58; rural Jamoats – 368. As of January 1, 2008 according to the data of the State Statistics Committee of the RT, there are: water pipes – 199; separate water pipe – 210; extension of water pipes – 1952,1 km; outside water supply system – 2530 km, requires the replacement – 1167,7 km; internal and indoors network – 815 km.

Considering the low level of drinking water provision to the population (52,3%), especially in the rural area (20%), above 70% amortization of the existing water supply systems, significant loss of water, low level of technical maintenance of water supply structures, potential danger of infectious diseases, in order to reduce the poverty level and achieve the indexes on water supply and sanitary, stipulated in the Millennium Development Goals, the Resolution # 514 of the Government of the RT from December 2, 2006 approved the Program to improve the water supply to the population of the RT with the drinking water for 2008-2020.

The main goal and objectives of this Program, as well as the National Development Strategy of the RT for the period 2006-2015 on «Water supply and sanitary» sector (2005) are:

- Designing, construction, rehabilitation, reconstruction of centralized water supply and sewage systems in the places that do not have proper access to the water and sanitary services;
- Construction of the basis of projects of non-centralized, small, medium and local systems of water intake wells of individual and group use;
- Rehabilitation and reconstruction of the existing systems of water supply;

- Increasing the quality of drinking water according to the existing standards;
- Establishment of zones of sanitary control over the water sources and main water intake structures;
- Organization of water metering;
- Rehabilitation and construction of public and individual lavatories, ensure the collection and utilization of solid domestic waste;
- Development and validation of the Law of the RT «On drinking water and water supply»; development of standards and norms on the quality of drinking water;
- Reforming the system of drinking water supply and sewerage, introduction of active rate policy, clear segregation of authorities, including the public organizations;
- Training of the staff, increasing the awareness on rules and obligations of the population on drinking water supply and sanitary;
- Ensuring the target and effective use of internal and external investments, allocated for the needs of drinking water supply and sewerage;
- Development of corresponding investment projects and submission to the MEDT of the RT for considering the social and economic prognosis in the RT and finding based on priorities and terms;
- Introduction of new technologies into construction and rehabilitation of systems, modern purification methods and disinfection of drinking water, automation of management systems, quality control and water metering control;
- Improvement of resource management of drinking water supply and sewerage;
- Ensuring uninterrupted power supply;
- Establishment of target system of social protection of poor level population in regards of payment for the drinking water supply and sewerage systems;
- Involvement of public and private sectors into the system of drinking water supply;

- Renewal of activity in the scientific and research and project organizations, institutions on qualification upgrade working in the sphere of water supply and sewage;
- Development of the local water supply systems in mountain areas using the rivers, streams and underground waters of good quality.

During 2008-2009 (first half year) the works is implemented for 24,5% out of the envisaged by the Program, i.e. 4 times delay (see attachment #1). Thus, it is very important, within the framework of the existing regulations, stipulated in this Guideline, to involve the investments and realize in practice the water supply projects for the conclusive implementation of the Government program of water supply for the period up to 2020.

The main outcome of the measures envisaged for this period up to 2020 is increasing the access of rural population to the drinking water from 20% (in 2007) up to 51%, and to the sewage system from 5% (in 2007) up to 65% (2015, considering the cesspools and outside lavatories).

5. Normative and Legal Regulation

5.1. Legal basis of the Republic of Tajikistan in the area of water supply and sanitation

Legislation in the area of drinking water supply and sanitation is based on the Constitution of the RT and is comprised of the laws, normative and legal, international and legal acts acknowledged by the RT. According to the Constitution of the RT (Article 13) water is an exclusive property of the state and it guarantees its effective use and protection on behalf of people.

The peculiarity of the current legislation of the RT in the area of drinking water supply and sanitation is the absence of the law «On drinking water and drinking water supply», that accordingly reflects on the quality and sustainability of drinking water supply, guarantees and responsibility in this sphere.

To bridge the gaps in legislation of the RT, the brochure provides Annex #2 a draft law of the RT «On drinking water and drinking water supply» participatory elaborated with the Ministry of land reclamation and water resources (MLRWR) of the RT that was widely discussed among the specialists of the leading line ministries, departments, Khukumats, international and non-governmental organizations. Section 5.2 considers the procedure of the further promotion of the draft law.

Nevertheless, Tajikistan possesses the particular legislative basis that regulates the wide spectrum of issues related to the implementation of the drinking water supply projects and strengthening its sustainability and effectiveness. The legislative basis of water supply and sanitation is available in Annex #3

For the practical solution of the water supply and sanitation issues it is necessary to make amendments into «National development strategy of the Republic of Tajikistan for 2006-2015 on «Water supply and sanitation» sector, to specify the issues of for the water supply property and disposal, forms of management, conditions to involve the private sector into management of public water supply and sewerage systems, reporting requirements, that will allow to evaluate technical condition, effectiveness of operation, needs in investments.

At all authority levels it is necessary to define the clear targets and terms for reforms, break them up them into stages, define the in-

dicators for each stage, assess effectiveness and efficiency of reforms, develop monitoring system for these indicators.

5.2. Promotion of the draft Law of the Republic of Tajikistan “On drinking water and water supply”

The necessity to develop and validate the Law of the Republic of Tajikistan «On drinking water and water supply» is reflected in the Concept on efficient use and protection of water resources of the RT, approved by Resolution #551 of the Government of the RT of December 1, 2001, and Resolution # 447 of the Government of the RT «On preparation and carrying out of Dushanbe International Forum on fresh water» of December 3, 2002.

At the republican level, first of all it is necessary to legalize the competence of the government, central executive body, responsible for implementation of the national policy in this sphere, local authorities in the area of drinking water supply. It is necessary to finalize the development and adoption of the Law of the RT «On drinking water and water supply», that will serve as the basis to form legal basis in the area.

Development of the draft of the Law is implemented according to Article 5, Chapter 5 of the Law of the RT «On legal acts». In this regard, MLRWR of the RT, in accordance with its reference refers the draft Law of the RT «On drinking water and water supply», designed in national and Russian languages to: MEDT of the RT; Ministry of Finance of the RT; Ministry of Justice of the RT; Ministry of Health of the RT; Committee on Environment Protection under the Government of the RT; Department of geology under the Government of the RT; Agency on Land Management, Geodesy and Cartography under the Government of the RT; Agency on Construction and Architecture under the Government of the RT; SUE «Hojagii Manziliu Communalii», «Tajikstandard». Review and feedback from the Ministries and Institutions should be made within 15 days.

Upon receiving the feedback from the ministries and institutions, the draft Law is amended accordingly. The edited version of the draft Law, cleared by the Ministry of Land Reclamation and Water Resources of the RT and heads of the above-mentioned ministries

and institutions is submitted to the Government of the RT for review. The draft is accompanied with a note explaining the necessity to adopt the Law.

According to the procedures, the Government of the RT reviews the draft Law «On drinking water and water supply», and upon the approval adopts the Resolution and submits it to the MNMO of the RT for review. Upon the review of the draft Law by the Lower Chamber, the Resolution adopts a decision on its approval and refers its for the review to the Upper Chamber – Majlici Milli Majlici Oli of the RT. Upon approval by the Upper Chamber, the draft law is submitted for approval to the President of the RT. The law is valid after the publication according to the established procedure.

5.3. Registering of permission for special water use

Use of water objects for water supply needs involving the technical facilities is made on the basis of permission for special water use. Permission is provided in accordance with Procedure for registration and issuance of special permissions for water use, approved by the Resolution # 485 of the Government of the RT of December 3, 2002 and Instruction «On the procedure of coordination and issuance of permission for the special water use», approved by the State Committee on Environment Protection and Forestry of the RT of 20.01.2005.

If the underground waters are used for non-centralized water supply via placement in settlements/villages of open wells, wellpoints, and captation of the sources working without forced lowering of water level, the permission is issued by the local authorities, Jamoats of settlements and villages (Article 33 of the Water Code of the RT).

Settlement of the wells and captations on the government reserve land and forest fund is made according to the agreement with the specially authorized state bodies on regulation and protection of waters, on land management resources of SSES, based on permissions issued by the local Khukumats. In other cases PSWU is issued by the Committee on Environment Protection under the Government of the RT.

Water object is considered to be used as the source for centralized water supply, if the water delivery exceed 50 m^3 per day (0,57 l/sec).

Documents for obtaining the PSWU is drawn up by water user or, based on his/her request, by design, scientific, or other organization. To process PSWU for drinking water supply the following documents should be submitted:

- Copy of act on selection of site for construction supported by certificates from the authorized bodies (new construction);
- Brief characteristic of the object based on project materials (information on well or water object used for the drinking water supply, number of population, livestock, etc.)
- Scheme of water supply and diversion of dikes indicating the sources of water supply, intake basin, places of planned water intake points, water outlets, and other structures and facilities.

PSWU is issued upon coordination of conditions for drinking water supply with water consumers, SSES, and geology bodies in case of underground waters involvement.

Special water use at water objects provided for isolated use to the enterprises and organizations – primary water consumers is allowed upon the agreement with these enterprises and organizations. Special water use from water pipe line systems of other enterprise or object is coordinated with owners of these systems. Negotiation of conditions for special water use and issuance of permissions is made on the basis of written request from the water user. Disagreements between the water users and specially authorized state bodies related to the issuance of the PSWU are considered by the appropriate ministries and institutions.

PSWU for drinking needs is issued for the period of up to 3 years (for short-term use) and from three up to twenty five years (for the long-term use). Extension of the term for special water use is issued by the same body.

During design and construction of drinking water objects only one permission is issued for special water use for all period of designing and construction of object.

5.4. Registering acquisition of land for construction

Allocation of land plots for construction of drinking water supply systems is made according to regulations on land management for natural persons and legal entities approved by Resolution # 342 of the Government of the RT dated September 1, 2005. Resolution of the Government of the RT or a decision of the Chairman of the area, city and district according to their reference serves as basis for allocation of plots of land.

Land allocation case is processed in the State land management body of the RT or its local departments according to the agreement with land user.

Application for land allocation is submitted to the Chairman of the corresponding district. Application contains the goal for which land is necessary, size and place of the land plot location. Placement of construction objects is made on the basis of district planning, master plan, and other perspective projects based on opinion of the local architecture and urban planning bodies.

Upon the approval of construction project and availability of funds required for its implementation, the application for land management case is submitted supported with the following documents:

- materials on coordination of the location;
- copy of the construction project (placement of all construction objects on the requested land plot, together with calculations of the required spaces and priority of construction time frames).

Materials on allocation of land plot along with the decision of land users' meeting is submitted for review to the Chairman of the district (city). The review takes 15 days. Further the decision is made and permission for land use is issued by the local land management bodies within its reference. In regards of other issues outside its reference, all materials, decision, and explanatory note is submitted to the superior body.

Upon receipt of permission for land allocation, physical persons and legal entities are to pay the damages to land users and reimburse the loss of agricultural and forestry production on the special

account of the State land management body according to Articles 41, 42 of Land Code of the RT.

The approved project for allocation of the land plot is transferred to the ground by the local land management bodies in the presence of the users' representatives.

Certificate for land use is issued by the State land management body of the RT according to the land management documents and serve as a basis for funding of construction objects.

5.5. Owners and operators of water supply systems

In the Soviet period the ownership for water supply projects belonged to the Union, republic, municipal and kolkhoz-cooperative. In rural areas the systems of water supply and sewage have been in the municipal property (Khukumats), republican property (Ministry of Agriculture of the RT, sovkhozs), cooperative (kolkhoz), and all-union property («Tajikselkhozvodoprovodstroy», industrial enterprises).

Currently the issues of drinking water supply in the rural area are covered by enterprises and organizations of 'HMK' GUP and TSV. Today these enterprises cover not more than 20% of rural population of the republic. The remaining objects of drinking water supply do not have a specific owner. Thus farmer households, Jamoats, Mahalla committees and other initiative groups of population are engaged in drinking water supply. Other water supply objects are ownerless and out of order.

In accordance with the Law of the RT «On self-governance bodies of settlements and villages» it is defined that Jamoat, that acts as a legal person is a local governance body of settlements and villages. The Law defines that the property of the settlements and villages and other property being transferred for the use serves as economic basis for the activity of local governance bodies of settlements and villages. Jamoat's reference includes establishment of small enterprises, cooperatives and other organizations to solve the issues of maintenance and operation of drinking water supply object in rural area including maintenance and improvement of water supply sources and approval of regulations for their implementation. This

reference allow for Jamoats to independently take steps for protection of ownerless property transferred to the state's disposal, including water supply objects in rural areas.

According to the Decree # 522 of the President of the RT dated June 25 1996 «On reorganization of agricultural enterprises and organizations» objects of intercompany water supply and sewage were the subject of transfer to the corresponding ministries and institutions. In Muminabad, Faizabad, Shahrinav, Bokhtar and some other districts within the framework of this Decree, the systems of water supply and sewage of the former agricultural enterprises were transferred to the local authorities for further operation. But this work was not implemented in all districts. Thus, it is necessary to establish working committees to determine book and physical cost, location, quality condition of the system in terms of money with preparation of inventory tables.

Objects and property, built and purchased in kolkhozes utilizing funds of the state budget are evaluated separately and the issue of their transfer to the property is regarded by the State committee based on proposals of the local working groups (Decree # 522 of the President of the RT dated 25.06.1996, p.10).

Currently, the investment into rehabilitation and reconstruction of drinking water supply objects is launched. Thus, it is necessary to have valid data on the owner, as well as the composition and condition of the capital assets of the water supply object.

In order to determine actual cost of drinking water supply objects in municipal property, conditions and extent of wear, identification of the boundaries of responsibility and being guided by Article 127 of the Civil Code the following steps are required: inventory, preparation of technical documentation and compulsory registration of rights for ownership.

According to Article 57 of the Water Code of the RT, centralized and non-centralized systems of water supply might be in republican, municipal or legal person's ownership.

The system of drinking water distribution, separate systems of water supply, water supply on transportation facilities are owned by owners of housing and transportation facilities.

Centralized and non-centralized systems may not be privatized.

Physical persons and legal entities may own system of water supply built by themselves according to the requirements of current standards and legislation of the RT.

Physical persons and legal entities may establish non-governmental organizations on joint water supply on voluntary basis.

Non-governmental organizations on joint water supply are established to improve sustainability of one or a group of settlements with participation of all or part of population to build new network, rehabilitate the existing system, keep it operating, and funding.

According to Article 238 of the Civil Code of the RT, the state property acts as republican and municipal property.

The municipal property is comprised of local treasury and property assigned to the municipal legal entities in accordance with the legal acts.

Funds of the local budget and other municipal property that is not assigned to the state legal entity comprise local treasure.

Property owned by the state, may be assigned to the state legal entities based on the right of business or day-to-day management. HMK SUA and TSV serves as examples of this.

According to Article 3 of the Law of the RT «On state enterprises», state enterprises are divided into: those owning state property on the right of business management, and public enterprises with the right of day-to-day management.

Depending on the type of state property, the enterprises are divided into: republican state enterprises; municipal state enterprises.

According to the effective legislation of the RT the hand-over of the property of the state enterprises, organizations, institutions, buildings and structures is made as follows:

- from the republican property to the municipal property of the RT considering the opinion of the corresponding ministries, state committees and institutions of the RT and certificates of the State committee on investments and state property management of the RT (GK IUGI RT);
- from the municipal property to the republican property of the RT on the basis of resolution of the Majlisi Namoyandagon and Chairman of the area, city and district as well as GK IUGI RT;

- from reference of some ministries, state committees and institutions of the RT to the reference of other ministries, state committees and institutions of the RT by the Government of the RT according to suggestions of state bodies coordinated with the GK IUGI RT;
- from the reference of one state body to the reference of another state body subordinated to the same ministry, state committee and institution of the RT upon the decision of the corresponding ministries, state committees and institutions of the RT coordinated with the GK IUGI RT;
- ministries, state committees and institutions of the RT, Majlisi Namoyandagon, Chairmen of the areas, cities and districts are not authorized to transfer property without compensation to other enterprises of non-state property status and physical persons without coordination with the Government of the RT.

Local authorities may also have joint property and participate in its management. That is very important to involve investments into drinking water supply.

5.6. Establishment of enterprises to maintain the water supply and sanitation objects

Republican state institutions, enterprises to service drinking water supply and sanitation objects are established by the Decrees of the President of the RT, Resolutions of the Government of the RT, and in case of ministries and institutions structures, approved by the Government of the RT, by these ministries and institutional structures.

Municipal state enterprise is established by the local authority act following the procedure stipulated for in the legislation of the RT. Any state body that took the decision on establishment of the enterprise or authorized state management body may become a founder of state enterprise.

According to the Civil Code of the RT, Law of the RT «On the limited liability organizations», Law of the RT «On the state registra-

tion of legal persons» citizens/physical persons by themselves or together with legal entities may found associations, enterprises, cooperatives, and other forms of management.

According to Article 9 of the Law of the RT «On the state registration of legal entities» a decision on establishment of legal entity is made by the founders on the general meeting, and in case of establishment of an entity by one person – on personal decision of the founder. During the first meeting decisions are made on the following issues:

1. Election of Chairman and Secretary from founders.
2. Approval of the agenda, including the establishment of legal entity, approval of Charter, foundation agreement, formation of capital stock and election of executive bodies.

Decisions on the abovementioned issues are taken unanimously.

For registration purposes the Charter is submitted on national language.

Document on formation of minimum 50% of the capital stock (bank certificate on the payment of the capital stock in cash or certificate on forming the capital stock in property) is also submitted.

Document confirming the location, issued by the local executive body of the district or city is also submitted. If necessary contract with landlord is signed. Copies of the contract and Charter are the basis to receive the certificate on location of the organization.

Registering body also requires the data on director of the newly established organization, submitted on a special HR form and two color photos of him/her, size 3x4 sm.

The set of documents including the application from the head of organization is submitted to the authorized body for further registration on one of the following addresses:

1. For organizations located on the territory of Dushanbe and districts of republican subordination – Ministry of Justice of the RT, Dushanbe, 25 Rudaki. Tel: 221 – 44 – 05
2. For organizations located on the territory of GBAO, Department of justice of GBAO Khorog, 81 Lenin, Tel: 2 – 38 – 07.

3. For organizations located on the territory of Khatlon area,
Department of justice of Khatlon area

Kurgan-Tube, 17 Norinov, Tel: 2 – 56 – 15.

4. For organizations located on the territory of Sughd area,
Department of justice of Soughd area

Khujand, 46 Sirdainskaya, Tel: 5 – 41 – 24.

According to Article 9 of the Law of the RT «On the state registration of legal entity», state registration of legal entity is carried out not later than 10 working days from the moment of submission of the abovementioned documents to the registering body. Upon registration and registration in the state register of legal entities, the new organization receives certificate on registration.

Based on Article 13 of the above-mentioned law, registration may be declined in case of non-compliance with the requirements of the legislation on procedure of establishment of organizations and non-conformance of submitted documents to legislation of the RT.

After state registration, a minimum 5 copies of registered documents should be notarized.

Within 10 days after registration it is necessary to obtain statistics codes from the statistics bodies. For this purpose it is necessary to submit a copy of the Certificate on state registration and a copy of the Charter as well as a copy of passport of the head of organization.

For obtaining a stamp, upon receiving the Certificate on state registration it is necessary to apply to local DIA to receive permission, and submit copies of certificates on registration and founding documents of the organization. The application should also contain a sample of a stamp developed by the organization engaged in making stamps and seals.

To obtain individual tax payer number (INN), the organization should be registered with tax bodies. Notarized copies of Certificate on state registration and Charter of the organization, copy of the passport of the head should be submitted to receive INN. Issuance of INN is free of charge. INN is assigned once and remains until reorganization or liquidation of the organization.

The following documents are submitted to tax body:

1. Application form on registration, INN and issuance of the certificate to open current account and, if necessary currency account.
2. Charter of the organization.
3. Copy of the receipt on payment of state tax.
4. Certificate of location.
5. Copy of the document on statistics code.
6. CVs of director and chief accountant.
7. Rent agreement (if necessary).
8. File folder.

The following documents are submitted for registration in social protection bodies:

1. Application form on registration, SIN and issuance of certificate to open current account and currency account.
2. Charter of the organization.
3. Copy of the receipt on payment of state tax.
4. Certificate of location.
5. Copy of the document on statistics code.
6. CVs of director and chief accountant.
7. Rent agreement (if necessary).
8. Memo on appointment of chief accountant.
9. File folder

The following documents are submitted to open bank account in banks of the Republic of Tajikistan:

1. Application for opening current and currency accounts.
2. Information letter (Maktybi ahboroti) from state tax inspection (GNI).
3. Information letter (Maktybi ahboroti) from Social Protection Fund (FSZN).
4. Certified copies of constituent documents.
5. Minuted of the meeting on appointment of director
6. Memo of appointment of chief accountant
7. Certified copies of specimen signatures.
8. Copy of the document on statistics code
9. Copy of passport of director and chief accountant

10. Two file folders

Relations between the Bank and organization are regulated in accordance with the legislation on bank activity and agreement signed for opening the account.

5.7. Agreements for drinking water supply, identification of responsibilities of the parties

Provision of water supply services to organizations, enterprises, regardless of their institutional attribute, form of ownership and legal form is regulated by the Law of the RT «On protection of consumer's rights», Regulations on providing municipal services approved by Resolution #209 of the Government of the RT dated June 6, 2005 (edited by Resolution # 419 of the Government of the RT dated 3.08.2007).

The water supply services must be constantly ready for provision of services except for the break periods:

- to conduct repairs and routine maintenance (according to the standards and rules);
- due to the natural disasters and emergency situations that do not depend on water supply enterprise.

Water supply organization should provide consumer with drinking water that meets the requirements and standards, as well as information on the quality of delivered water.

Consumer attributes and regime of water supply should meet the established standards on cold water supply, hygiene requirements on composition of water and estimated water use rate at the heading.

Executive bodies of the local authorities that control the safety of supplied water, and their authorized bodies have a right to clarify the parameters of consumers attributes, regime of drinking water supply and establish guaranteed quality level, considering the capacity, composition and depreciation of fixed assets, climate and other conditions of a settlement. Organization informs consumers about price adjustments and decisions made on payment for water supply.

Water supply organization provides visual and affordable information on acting rules of water supply, rates, payment conditions, consumer attributes, certificates' availability and other supporting documents confirming the quality of delivered water.

According to contract water is supplied on fee basis. The contract reflects the quality and regime of drinking water supply and volume of its use, procedure and terms to eliminate problems and emergencies, fixed sizes and payment conditions, accounting period and terms of payment, fines for the untimely payment for services, rights, obligations and responsibilities of water supply organization and consumer, as well as conditions for termination of provision of services.

Payment for services is made on monthly basis until the 10th of a month if other is not stipulated for in the contract. Untimely payment for services results in charging penalty at the rate of 0,1% from overdue amount for each day of delay, but not exceeding 5% for the whole period. Form of payment is cash or bank transfer depending on the agreement between the parties. Cash payment is made via a special payment document and cash register machine.

If the user has water meter, payment is made according to actual use, in other case based on the established standards of water use. If the water quality doesn't meet the established requirements, the payment is reduced accordingly. The list of deviations and their amount, procedure for reducing and processing, and recommended conditions for reducing the payment is developed by state bodies implementing control over the safe services provisions (standards' supervision bodies, sanitary and epidemiological control), their branches at sites. Reduction of payment is not allowed is the break in services provision relates to elimination of health, life damage, prevention of the property loss or due to force-majeure.

Use of drinking water supply services should be implemented on the basis of regulations on provision of municipal services approved by Resolution # 209 of the Government of the RT dated June 6 2005 and a signed contract.

Control over proper use of water supply services is carried out by the organization itself or specialized organization having access to drinking water supply.

Water consumers have a right to:

- receive water of the established quality, safe for life and

- health and not causing damage to the property;
- require full reimbursement of damage, harm to health, life and property, moral damage from water supply organization due to drawbacks in water supply services, according to the procedure and size defined by the legislation of the RT;
- skip the payment for water supply during the breaks exceeding those stipulated for in the contract. At the same time this doesn't relieve water supply organization from reimbursement of damages and losses.
- receive services on elimination of drawbacks by the water supply organization according to the set terms;
- for state and judicial protection according to legislation of the RT in case of rights violation.

Consumer is obliged to:

- pay for water supply services according to the set terms;
- provide rational and target use the drinking water;
- follow procedures of water supply set by the contract and rules of municipal services approved by Resolution # 209 of the Government of the RT dated June 6 2005;
- follow the requirements on safety practice;
- provide access to representatives of authorized water supply organization and specialized enterprises having the right to work with waterworks for elimination of problems, inspection of engineering equipment, meters, etc.

Consumer is prohibited to:

- reequip internal networks of water supply without permission of water supply organization;
- install, connect without the written permission from water supply organization and use additional control and stop valves, use additional water use facilities and equipment including individual water purification tools without technical passports (certificates), which do not meet security, sanitary and hygiene norms;

Water supply organization has a right to:

- take measures envisaged by the contract, in case if the consumer violates the terms of payment;
- monitor drinking water use via conducting inspections of engineering equipment of user;
- terminate water supply in case of arrears over three months or in case of above mentioned violations.

Water supply organization is obliged:

- take timely measures on preparation of project and signing contract for water supply;
- deliver drinking water of the agreed quality;
- based on the agreement with the local authorities to set the format for registration of requirements (claims), submitted by consumer due to violation of the set quality of water and term to eliminate the gaps;
- take timely measures to prevent and eliminate the violation of conditions for drinking water supply;
- timely inform water users on alteration of quality of delivered water;
- do not allow for violation of technological processes and reduction of the quality of drinking water, envisage measures on rational use of water resources.

The water supply organization is responsible for:

- quality of water delivered to user according to the legislation of the RT, standards, rules and signed contract;
- for untimely submission of water supply services, set by the contract and quality of the delivered water. The consumer has a right to claim reduction of payment for the services on water supply and compensation of damage;
- for violation of terms set by the contract for elimination of drawbacks in drinking water quality or increase of admissible breaks in water supply and is obliged to pay the forfeit in the amount of 3% for each day of the delay, if the term or break is defined in days and 1% for each hour of delay of the term and break is defined in hours;

- for damage, caused to life, health and property of the consumer in full and for the moral damage in the amount and procedure defined by the legislation of the RT.

The water supply organization is relieved from responsibility for violation of the quality of supplied drinking water caused by force-majeure.

State administration bodies upon the agreement with the Ministry of Economic Development and Trade of the RT within their reference have a right to issue documents and implements to the Rules of municipal services provision, approved by the Decree # 209 of the Government of the RT dated June 6 2005.

6. Organizational and Technical Management

6.1. Staff training and assessment in drinking water supply area

Operation of the water pipe is performed by service personnel. For normal operation full-time and long experienced staff is of special importance. The number of this staff cannot be regulated and significantly depends on productivity, staffing, location of structures, length of the water pipe and distribution networks, level of mechanization, automation, management and maintenance. Based on the complexity water pipes are divided into three grades:

I grade – water pipes equipped with device to improve the quality of water and water lifting facilities;

II grade – water pipes with artificial water lifting but without devices to improve the quality of water;

III grade – self-flowing water pipes without devices to improve the quality of water.

The water pipes of each of these classes may be referred to the following groups according to their size:

Group A - group water pipes providing services to several settlements or other water supply networks;

Group B – water pipes providing services for one settlement and having developed network of piping and water intake points;

Group C – small water pipe, delivering water to one water intake point.

The Table below provides sample staff list ensuring normal operation for various systems of water supply:

Positions	I grade			II grade			III grade		
	A	B	C	A	B	C	A	B	C
Manager (engineer)	1	1	1	1	-	-	-	-	-
Technician	1	-	-	-	1	-	-1	-	-
Laboratory Assistant	1	1							
Senior Operator	1	1	1	1	1	1	-	-	-
Operator	2	2	2	2	1	-	-	-	-

Senior workman of the sewage disposal plant	1	1	1	-	-	-	-	-	-
Workman of the sewage disposal plant	2	2	2	-	-	-	-	-	-
Mechanic of the 2 grade	2	1	1	2	1	-	2	1	-
Mechanic of the 1 grade	1	1	1	1	1	1	1	1	-
Guard	3	3	1	2	1	-	1	-	-
Accountant	1	1	1	1	-	-	-	-	-

Local conditions may complicate or simplify the operation of water pipes that would require the change the manning table depending on the operation conditions. Introduction of water meters requires controllers that should be included into manning table or their responsibilities will be imposed on one of the staff members.

For recruitment procedures the employee should have corresponding qualification according to the grade requirements («General grades classifier of workmen, employees and tariffs», Ministry of labor and social protection of the RT, Dushanbe 2005). Classifier is intended for assessment of the number of workmen and employees considering composition and grades, qualification and mechanization level, labor conditions, employment, salary, pension, assessment of additional needs in staff at all management levels considering automatic processing of information. Staff should be trained in vocational schools, training centers, colleges and Institutes. Qualification should be proved by Diploma or Certificate.

It is necessary to organize training and experience sharing courses as well as staff upgrading at the best-practice water supply enterprises regularly and conduct staff evaluation from time to time. Staff evaluation and licensing of the activity of organization that operates the water supply system should facilitate improvement of labour efficiency

Staff evaluation includes identification of qualification, assessment of the professional and personal traits, level of special and legal knowledge, ToR performance, stimulating the growth of professional level. Enterprise assessment is conducted to improve management structure, increase quality of services provided, strengthen management activity, manpower deployment, and ensure their qualification with the positions. Evaluation is conducted according to the pre-determined, approved procedure that must be clarified to the employees. The following points should be considered during the evaluation:

- Legality;
- Objectivity and democracy;
- Consistency, integrity and reality of the evaluation;
- Transparency and collegiality while discussing and identifying assessment results.

Objectives for evaluating specialists include:

- Determining competency;
- Effective use of opportunities and abilities according to the profession and category;
- Stimulate the upgrade of employee's qualification;
- Ensure effective operation of the enterprise.

Evaluation should be conducted once every three years and in case of transfer to another position. The evaluation may be conducted upon the request of the employee.

Staff in charge of maintaining the water pipe structures should receive instructions on safety and labor protection according to the effective norms and regulations on water supply system operation, and also undergo regular medical check-ups.

6.2. Technical standards in the sphere of water supply and sanitary

Standard as a normative and technical document defines the set of norms, rules, and requirements towards the standardization object. Using of standards facilitates the assurance of the required quality of

drinking water. Following water GOST 2874-82 «Drinking water» quality standard should guarantee safety of water supply. The following are the main characteristics of drinking water: muddiness – up to 1,5mg/l; color– up to 20 degrees; scent and flavour at 20 degrees C; pH factor 6,5-8,5; hardness up to 7 mg-equivalent/l; fluorine 0,7-1,5 mg/l; ferrous up to 0,3 mg/l, etc; nitrates up to 10 mg/l; total amount of bacteria in 1 ml to 100; coli-index up to 3; coli-titre max 100. Delivering of water deviating from the GOST should be coordinated with local sanitary bodies. If the water is supplied from the water pipe, the control of water quality gives an idea about the risk of water-borne diseases.

Diseases transmitted through the water, feces and mechanisms of infection dissemination:

- Water-borne diseases: cholera, shigellosis, diarrhea, salmonellosis, typhoid fever, paratyphoid, amoebic dysentery, lamblia, hepatitis A, poliomyelitis, Roths' disease.
- Fecal oral, microbial: water contamination; non-observance of personal hygiene, anti-sanitary conditions.
- Transmitted while washing or in case of insufficient water supply: skin and eye infection, typhoid and relapsing fever that is transmitted by lice.
- Helminthes transmitted through the feces: various worms.
- Beef helminthes: teniasis
- Water-borne diseases: schistosomiasis, dracunculosis, clonorchiasis, etc.
- Insects transmitting infections through water: malaria, Dengue fever, narcolepsy, filariasis, etc.
- Insects transmitting infections through the feces: diarrhea and dysentery.

In small rural settlements protection of drinking water source is the only chance to ensure the proper quality of water. In large settlements the water needs are high and they may be satisfied only using additional sources of water of poor micro-biological quality. Such water requires all types of purification to obtain visually acceptable and safe drinking water.

Ground waters taken from well protected water beds usually do not contain pathogen microorganisms, and its distribution without purification is a common practice in many countries. Such practice implies that the area of influence is protected by effective control measures, and that water distribution system is properly ensured from secondary pollution of drinking water. If there is no guarantee protection en route from a source to consumer, disinfection of water should be carried out.

Disinfection of water is one of widely applicable methods of improvement its quality. Disinfection is frequently used for ground water and in all cases for surface water. Chlorination is used more often to disinfect water and only in some cases — UV treatment and ozonation; in case of local water supply boiling of water is used.

Wide application of chlorination is explained by reliability of such disinfection, its affordability and cheapness. There are many ways of chlorination that allows for using this method in various cases; at the water pipes and in the field. The principal of chlorination is based on treating of water with chlorine (gas) or chemical compounds, containing it in the active form, having oxidation and bactericidal action, for example chloride lime, salt of sodium hypochlorite (SSH).

Special instruments – chlorinators controlling chlorine in water are used in large water pipes to disinfect the water. Chloride lime or SSH is used to disinfect water in small water pipes, barrels and other reservoirs. Chloride lime might fractionize in case of storage. Light, humidity and high temperature accelerate loss of available chlorine. Considering this, chloride lime is kept in barrels in dark, cool, dry and ventilating room, and its activity is tested in lab before use. Chloride lime that is usually used, contains 20—25% of available chloride. SSH is more stable than the chloride lime and contains 50—52% of available lime.

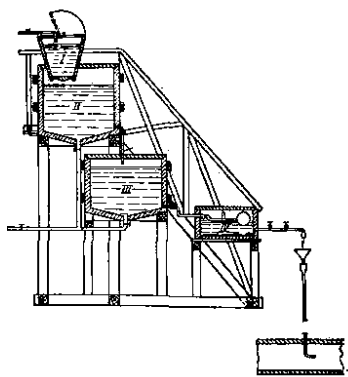
During disinfection chloride interacts not only with bacterium but also with the organic matters and some salts, thus it is very important to choose the right dose of chloride or chloride lime, required for safe disinfection. As experience shows after disinfection the water may contain 0,3-0,5 mg/l of the so-called free residual chloride. From the one hand, this amount of residual chloride serves as an evidence of safety of disinfection and from the other, it doesn't worsen organoleptic quality of water and is not harmful for health. High con-

centration of chloride adds an unpleasant smell to water. Since the composition of natural waters is diversified, frequently the dose of chloride lime significantly varies. Usually it is set by experiments using various doses of chloride lime in different glasses.

Approximate doses of chlorine and quantities of chloride lime for water disinfection

Type of source and quality of water	Quantity required for disinfection, mg/l		Required quantity of 1% chloride lime solution, ml per 1 l of water
	Available chlorine	25% of chloride lime	
Middle (artesian), clarified and discolored water from surface springs	0,2-0,4 1-1,5	2-4 4-6	0,2-0,4 0,4-0,6
Well (soil), transparent and discolored	1,5-2	6-8	0,6-0,8
Muddy and colored water from open reservoirs and wells	3-5	12-20	1,2-2,0

When water in a container should be disinfected, the volume of water is defined as shown above. The quantity of 1% solution of chloride lime is required to disinfect water (1% SSH solution requires half of it). Having prepared the 1% solution of chloride lime or SSH, it is allowed to settle and then added in the required quantity to water and mixed carefully to disinfect it. For reliable disinfection the contact of chloride with water should last minimum 30 min in summer and minimum 1 hour in winter. After disinfection, residual chloride, water smell and flavor are checked,



and the water is allowed for use. In the water pipes where disinfected water is supplied uninterruptedly, it is also necessary to add the required quantity of chloride lime accordingly. Various dosing facilities are used for this purpose (drawing). For the purposes of safe disinfection the muddy and colored water should be preliminary clarified and discolored.

The scheme of installation for dissolution, settling and dosing of chloride lime:

I, II — barrel for dissolution and settling of chloride lime solution; III — barrel for the working (1—3%) solution of chloride lime; IV —float dosimeter, ensuring the equable supply of solution from the barrel.

6.3. Stages of water supply projects implementation

To obtain the assignment for designing the object, the Applicant submits an application according to the established format to the local architecture and urban planning body.

The application is supported with:

a) copy of certificate for land use (plan of the land plot). Legal documents and technical passport is submitted for reconstruction (re-planning, modernization) of the existing object;

b) document certifying the reference of the Applicant's representative, in case if he/she represents the Applicant's interests;

c) consumptive capacities of engineering system of designed object to obtain technical conditions.

Recommended composition and content of building for projecting of objects is available in the projecting norms of MKS CHT 11-01-2005, and suggested format of the building is in Annex #4.

Along with the assignment for design the Customer provides:

- Justification of investments for construction of the object;
- Decision of the local authorities on preliminary agreement of the object location;
- Act for selection of the land plot (trace) for construction and supporting documents;

- Technical conditions to connect the designed object to power supply source, engineering networks and communications;
- Nomenclature, procedure and terms for submitting materials is stipulated for in the agreement for implementation of planned works;
- Inventory materials, assessment acts and decisions of the local authorities on potential demolition and compensation for demolished buildings and structures;
- Materials received from the local authorities and state supervision bodies, including characteristics of social and economic environment, natural resources and environment, data on the existing pollution sources and other information according to the requirements of environment protection bodies, sanitary and epidemiological conditions in the construction districts.

To get the most successful end-to-end solution of water supply scheme, it is necessary to select it simultaneously with the scheme of sewage and disposal of waste waters. Projecting of the exterior piping and sewage is made according to the acting construction norms and rules (CNR 2.04.02-84) and technical conditions for exterior piping and sewage networks. Project and general housing scheme of the settlement serve as a baseline data for development of water supply and sewage projects. The assignment to develop the project include characteristics of the object, boundaries of territory that should be provided with water and sewage systems, estimated period, stage of construction and design. Water supply design is done in 2 stages: development of preliminary design with estimates and finance calculations, and preparation of work drawings based on the approved preliminary design. Water supply and sewage systems are planned and designed for a particular estimated period of time. Herewith the estimated period is the period when the structure will have the required design and carrying capacity, and will meet its functions without re-construction.

Development of the project documents is done upon preliminary agreement on project location based on the approved justified construction investments or other preliminary project materials, contracts, assignments for projecting and materials of engineering survey.

The project documents, developed in accordance with the baseline data, technical conditions and requirements, issued by the state supervision bodies and stakeholders while negotiating the placement of object, cannot be discussed additionally except for the cases stipulated for in the legislation of the RT (Resolution # 282 of the Government of the RT, Annex 1).

Project documents for the construction of enterprises, buildings and erections are developed according to the current state standards, rules and regulations that are certified by the corresponding note of the person in-charge, i.e. Chief project engineer. Approval of the projects, working designs regardless of the sources of funding is made by the Customer. Nomenclature, procedure and terms for supplying of materials are stipulated in the contract for carrying out of project works. The quality of design estimates should be determined based on the following criteria:

- economical expediency of construction;
- progressiveness of technical and economic indicators of designed structures;
- ensuring efficient use of natural resources;
- accuracy in selection of the site and motorway for construction of the system;
- correspondence of technological processes to modern achievements of science and technology;
- accuracy in selection of water supply source;
- availability of decisions for establishment of favorable working conditions;
- correct determination of the number of staff;
- ensuring safety of operation of structures;
- following the norms and regulations on labor protection and safety code, as well sanitary and hygiene conditions;
- following the requirements of construction norms and regulations, state standards and regulations on economical use of materials;
- optimality of decisions on power conservation;
- accuracy in determining estimated cost of construction.

As a rule the projects are implemented in the following stages:

a) selection of land plot for construction works; in order to obtain the land plot for the construction activities, legal entities and natural persons should apply to the local executive authorities according to the procedure set by the legislation of the RT;

b) architecture and planning assignment; local architecture and urban planning bodies define the architecture assignments and on the basis of the consumer capacities of engineering system they prepare technical conditions for the project documents and submit them to the Customer;

c) preparation of project documents; the Customer develops the project documents in accordance with the procedure set by the Architecture and construction agency of the RT;

d) agreement of the project documents; local architecture and urban planning bodies define the conformity of project documents with the ToR, norms, rules and standards and pass to other supervision bodies for review.

e) assessment of the project documents; upon obtaining of the positive opinion from the corresponding bodies, the Customer submits the documents to the state assessment bodies

f) obtaining the permission for the construction activities; upon obtaining of positive opinion from the state expertise the Customer applies to local architecture and urban planning bodies for obtaining the permission.

g) hand-over of the completed project into operation; upon the completion of construction works in order to prepare the object the working group inspects the readiness of the object for operation and draws up certificate for submitting it to the State acceptance committee.

6.4. Expenditures for projects implementation

Expenditures on project implementation are determined in the estimates for specific types of works that are consolidated into summarized estimate. Estimates for the construction are key and invariable documents for the whole construction period, that serve as basis for funding the construction and payments between the customer and contractor for the implemented activities. Before the approval, the es-

estimates for construction are coordinated with the customer. Developer participates in this coordination and submits the required materials confirming the volume and cost of works. Upon the approval of estimates by the customer, the cost of object within the project is considered to be final.

The estimate documents are designed according to the regulations and forms provided by the normative and methodological documents of the Construction and Architecture agency under the Government of the RT (methodical recommendations to develop the estimates for the construction and erection works using the resource method, Dushanbe 2005) to define the estimated cost of construction for enterprises, buildings and structures (or their stages). The set of documents developed at this stage of the project should include:

- consolidated estimated cost of construction;
- local and object estimated costs;
- estimated costs for specific types of expenditures (including project and exploration works).

The cost of construction in the customer's estimated cost is recommended to submit in two price levels:

- on the base (constant) level defined according to the existing estimated standards and prices;
- on the current or forecasting level defined based on the prices, valid by the time of estimate development or forecasted by the time of construction.

Explanatory note with the data that characterizes the applied estimate basis, level of prices and other data that distinguishes this construction supports the estimate documents.

Based on the current (forecasted) cost level, defined as the estimated documentation, the customers and contractors form the free (contracted) prices for the construction products. These prices may be transparent, i.e. detailed according to the contract conditions in the course of construction, or fixed (final). Memo (record) on free (contracted) price for the construction products is proceeded as the result of joint decision between the customer and contractor.

As a rule, resource (resource and index) method is used to design estimate documents, where the estimated cost of construction is defined based on the data of project materials on the required resources (man power, construction machines, materials, construction) and current (forecasted) prices for these resources.

The summarized estimate should contain separate line for the reserve of funds for contingencies, calculated from the total estimate cost (on the current level of prices) depending on the project solutions and acting norms of the RT. Project implementation includes the following expenditures:

- a) rendering services on preparation of architecture assignments and technical conditions;
- b) design of object;
- c) carrying our of assessment;
- d) obtaining permission for construction;
- e) cost of construction;
- f) hand over of the completed object.

Additional funds for reimbursement of expenses, detected after the approval of project documents with regards to introduction of the Resolutions of the Government of the RT that increase the coefficients, privileges, compensations, etc., should be included into summarized estimate as separate line with further change of final indicators of the cost of construction and approval of specification incorporated into projecting documentation.

6.5. Drinking water consumers and water consumption standards

When designing drinking water supply systems it is necessary to determine quality and quantity of supplied water. According to SNiP 2.04.02-84 water is used for the following purposes:

- household water use (domestic needs) of population;
- production and technical needs;
- firefighting.

Water for domestic and production needs is to be supplied at the cost of regular and normal work of water pipeline. For fire-fighting purposes water is used occasionally and water pipeline is forced to supply water only during fire extinguishing.

Household water use includes water consumption for drinking, hygienic needs, cooking food, cleaning premises and also for watering plants. Needs in water are determined taking into consideration the number of inhabitants and water consumption standards considering irregularity coefficient. In this case a standard for household water use is regarded as an average daily quantity of water that is consumed by one person. The quantity of water consumed on average by this or that water consumer during a day (24 hours) is regarded as a daily water consumption standard.

To determine quantity of water that is to be supplied by a water supply system being designed, one should use calculated water consumption standards taking into account climatic and other local conditions (SNiP 2.04.02-84).

As a rule, the following standards are used for calculation purposes:

Name	Types of expenses	Unit of measure	Water consumption standards
Public draw-off points	1. Street water column 2. Water columns and taps in yards	1 pers/day 1 pers/day	60 110
Residential buildings	1. With internal water pipe but with no bath and gas 2. Same with gas but w/o gas water heaters	same same	140 160

	3. With internal water pipe and water heaters operating on solid fuel	same	240
	4. Same with gas water heaters	same	300
	5. With internal water pipe and basin	same	110
	6. With public flush WC located in yard	same	100
Administrative buildings	1. With water consumption from street water column per 1 employee/day	1 pers/day	15
	2. With internal water pipe per 1 employee	1 pers/day	30
Educational institutions	1. In case of water consumption from an outside water pipe per 1 student/ teacher per shift	1 pers	20
	2. In case of internal water pipe and sewage per shift	same	35
	3. Boarding schools and orphanages when internal water pipe and sewage is available	1 place/day	220

	4. From street water columns	same	110
	5. School camps when internal water pipe and sewage are available	same	250
	6. School camps when water is consumed from street water column	same	110
Hospitals and outpatients' clinics	1. W/o centralized water supply	11 places	130
	2. For in-patients/day with centralized water supply	1 bed	300
	3. Days for non-resident attendants/day	1 pers	60
	4. Per 1 tap in doctors' offices with a basin	1 hour/appointment	40
	5. Per 1 visitor	1 pers	15
	6. Per 1 tap/hour	1 tap	40

Water consumption may vary every hour. It is very difficult to account for these variations and usually it doesn't have any practical meaning. That is why water consumption per hour is regarded as invariable when designing a water pipe.

At the same time, water consumption for population needs in a settlement is proportional to the number of inhabitants. Water consumption depends on the level of equipping of living spaces with services and utilities, availability of heating, hot water, internal water pipe. Large consumption of water by cattle that is owned by people is characteristic of rural settlements and must be taken into account as part of household

water use. Quantity of water consumed on average by this or that water consumer per day is regarded as daily water consumption standards and is calculated according to the following formula:

$$Q_{\text{cym.m}} = \sum q_{\text{жк}} N_{\text{жк}} / 1000,$$

with $q_{\text{жк}}$ — specific water consumption (l/day) is in accordance with water consumption standards;

$N_{\text{жк}}$ — estimated number of inhabitants

Water consumption for outside fire fighting and the number of simultaneous fires in a settlement for calculation of water mains must be estimated in conformity with SNiP 2.04.02-84. For rural settlements with buildings not exceeding 2 floors and number of inhabitants up to 1000 people, water consumption for firefighting is 5 litres/sec, and for a number of inhabitants up to 5000 – 10 litres/sec. When calculating water supply necessary for firefighting, estimated duration of fire is to be considered at 3 hours.

The following Table reflects carrying capacity of pipe at water speed of 1.5 m/sec:

Pipe diameter	Consumption l/sec	Consumption	Consumption	Consumption
15 mm	0,26	0,94	22,50	8212,50
20 mm	0,48	1,73	41,50	15147,50
25 mm	0,80	2,88	69,10	25221,50
32 mm	1,44	5,18	124,30	45406,00
40 mm	1,90	6,84	164,20	59933,00
50 mm	3,20	11,52	276,50	100922,50
70 mm	5,30	19,1	458,40	167316,00
80 mm	7,50	27,00	648,00	236520,00
100 mm	13,00	46,80	1123,20	409968,00
125 mm	20,00	72,00	1728,00	630720,00
150 mm	29,50	106,20	2549,00	930385,00
200 mm	46,00	165,50	3972,00	1449780,00

Under maximum household water use, minimum free head in a settlement water pipe network when entering a building overground should be not less than 10 m if the building is 1-storey. In case of multiple floors, 4 m must be added for each one. Free head in water column network must be not less than 10 m. Free head in firefighting water pipe of low pressure (overground) should be not less than 10 m. Free head in firefighting water pipe of high pressure must ensure the height of a pencil jet of not less than 10 m if water is consumed totally for fire extinguishing and fire-hose barrel is located at the level of a highest point of the highest building. Maximum free head in an integrated water pipe should not exceed 60 m.

6.6. Water supply sources and sanitary protection zones

When designing a water supply system, selection of a source is one of the most responsible tasks as it significantly determines nature of the system, inclusion of certain facilities and, consequently, cost of construction and operation. Sources of water supply must correspond to the following key standards:

- a) ensure acquisition of necessary quantities of water taking into account water consumption growth and long-term facilities development;
- b) ensure uninterrupted water supply to consumers;
- c) provide quality of water that maximally corresponds to consumers' needs or allows for achieving the required quality by simple and inexpensive purification of water;;
- d) ensure capacity for supplying water to facility with minimum cost;
- e) have enough capacity so water intake does not disrupt the existing eco-system.

Correct decision on selection of a water supply source for every object requires thorough study and analysis of water sources of a district where project is located. Selection of a water supply source is made considering its sanitary safety and capacity for obtaining drinking water corresponding to the existing standards. Suitability of

a source for domestic water consumption is established based on the following:

- Sanitary assessment of conditions for generation and bedding of waters of subsurface water supply sources;
- Sanitary assessment of surface water supply source as well as adjacent territory above and below water intake;
- Assessment of quality and quantity of water;
- Sanitary assessment of a place for construction of water intake facilities;
- Forecast for sanitary condition of sources.

Data collection and analysis of sanitary, hydrological, hydrogeological and topographic conditions for water supply source selection is carried out by a design and survey institution. Determining of a place and intake of water samples, and their analysis are carried out by sanitary and epidemiological control body or other organizations that have the same right. Institutions and organizations of sanitary and epidemiological control of MoH of RT issue a conclusion on conformance of a source to quality standards. The following must be considered as water supply sources:

- watercourses (rivers, canals);
- water bodies (lakes, reservoirs, ponds);
- subsurface waters (aquifers, underflow, colliery and other waters).

Conclusion on suitability of a water supply sources must contain the following information:

- on the object of water supply and sanitary characteristic of a water supply source that is planned to be used;
- on water quality in a water supply source and forecast for its condition over a design period;
- on activities for organization of a sanitary protection zone and planned treatment of water in order to bring it up to the drinking water standards.

Conclusion of a sanitary and epidemiological control body on suitability of a water supply source is valid for three years.

Sanitary protection zones are provided for in all designed and rehabilitated water pipes intended for household use in order to ensure their sanitary and epidemiological safety. Water pipe zones must include water supply source zone in the area of water intake (including water intake facilities), zone and sanitary protection belt of waterworks (pump stations, water treatment stations, reservoirs) and sanitary protection belt of water conduits. Water supply source of sanitary protection zone must consist of three belts:

- first belt – high security;
- second and third belts – restricted access.

Project for water system sanitary protection zones should determine:

- borders of belts around water supply source;
- zones and belts of waterworks and belts around water conduits;

Project for water system sanitary protection zones is coordinated with district Hukumat, sanitary and epidemiological control bodies, geology bodies (in case subsurface water is used) and other stakeholders (ministries, agencies) if necessary and is approved following the established procedure.

For surface water supply sources the border of the first belt must be determined according to the following distance to water intake point:

a) for a river or canal – not less than 200 m upstream and not less than 100 m downstream, and not less than 100 m from water edge along the adjacent territory;

b) for a reservoir, lake – not less than 100 around water area, and not less 100 m from water edge along the adjacent territory if headwater level in reservoir is regular.

Borders of the second belt must be defined upstream, including tributaries, taking into account speed of water flow averaged by width and length of watercourse or its specific part, and also time of water flow from zone border to water intake point with the monthly average water consumption in summer-autumn low water of 95% of

provision for not less than 5 days of IA, B, C, D, PA climatic areas and not less than 3 day for any other climatic areas; downstream – not less than 250 m; side boundary during summer-autumn low water – 500 m from water edge in case of flat relief; to the top of the first slope facing watercourse in case of mountainous relief but not more than 750 m if the slope is gentle and 1000 m if the slope is steep.

Border of the third belt must be defined upstream and downstream or all around water area similarly to the second belt. Side borders are defined along watershed but not more than 3-5 km of watercourse or water body.

The border of the first belt for subsurface water supply sources must be defined from a single water intake point (well, captation) or from the last water intake of a group water intake points considering the following distances:

- 30 m when protected subsurface water is used;
- 50 m when insufficiently protected subsurface water is used.

The border of the 2 and 3 belts are determined by calculation (c.10.14; 10.15 of SNiP 2.04.02-84). The border of the first belt must coincide with fencing of a ground for facilities construction and at the following distances:

- not less than 30 m from walls of filtered (drinking) water reservoirs and filters (except for deliver filters);
- not less than 15 m from walls of other buildings and tank towers.

For water conduits the width of sanitary protection belt must be determined from the last water conduits (that pass along undeveloped area) - not less than 100 m if soil is dry and $d=1000$ mm, and not less than 50 m if soil is wet; for developed areas these distances may be reduced upon coordination with sanitary and epidemiological control bodies.

The following activities are prohibited in the first belt:

- all types of construction with the exception of rehabilitation of waterworks;
- placement of residential and public buildings, accommodation of people including those servicing water intake points;

- laying of pipeline of various purposes except for pipelines servicing waterworks
- releasing waste water into surface sources; swimming, watering and grazing of animals, laundering, fishing, using fertilizers and pesticides;

State sanitary and epidemiological control bodies and organizations as well as environmental control bodies carry out control over implementation of sanitary protection activities in sanitary control zones.

6.7. Turning objects over for operation

Completed objects are accepted for operation by the State acceptance committee in accordance with procedure stipulated from in chapter 10 of the Law of RT “On architectural and town-planning activities” based on the approved project and positive conclusion of operating committee.

To prepare the project for turning over for operation, the customer (developer) appoints an operating committee that within 5-10 working days depending on significance or cost of construction of the object, carries out general inspection on readiness of the object for operation and draws up a conclusion to be submitted to the State acceptance committee.

For the object to be accepted for operation, after general inspection on readiness of the object for operation and drawing up the conclusion by the operating committee, the applicant submits to the State acceptance committee that is appointed in accordance with article 10, an application and necessary documents. The list of documents is established by the authorized state body for construction and architecture. It is prohibited to request other documents not stipulated for in the legislation.

Within 5-10 working days after submitting of the documents, the State acceptance committee carries out a general inspection of readiness of the object, check test of technical equipment and engineering system; draws up an Acceptance certificate or rejection of

acceptance of the object for operation according to the format established by the Agency on construction and architecture under the Government of RT.

The Certificate is signed by the project applicant, contractor, chairperson and members of the State acceptance committee. The Certificate and reference to it are submitted to the body that appointed the State acceptance committee for approval.

The Certificate on acceptance of the object for operation or rejection of it is to be approved in the following timeframes following its signing:

- up to 30 working days for objects of industrial purpose;
- not more than 10 working days for objects of residential and civil purpose;

The approved certificate on acceptance of the object for operation serves as grounds for its operation and state registration of a property right for a finished construction.

The state acceptance committee is appointed depending on significance and construction cost of the object being accepted into operation:

- by the Government of RT upon recommendation of ministries and agencies or local executive bodies in GBAO, Dushanbe, provinces, towns and districts;
- by ministries and agencies;
- by local executive bodies in GBAO, Dushanbe, provinces, towns and districts.

After completion of construction by contractors, the object is turned over to the customer. All deeds for covered-up works: beds of subsurface pipelines, all points of intersection with other underground pipelines, insulation of pipelines, casings of pipelines, etc. are also turned over to the customer. Conformance of works with designs is carried out by appointed committee that accepts all facilities. Assembled head conduits must be tested for durability and leak tightness twice – before refilling of trench and after. Representatives of the customer and operating enterprise are participating in the final test. After the test, the water pipeline must be flushed and disinfected.

The water pipeline is flushed until clean water without impurities runs. After flushing the water pipeline is disinfected by filling it up with water containing chloride lime or chlorine gas (40 mg of available chlorine per 1 litre of water). Water and chlorine solution must be in the pipeline for not less than a day. After chlorination is completed, water should contain not less than 1 mg of residual chlorine. After water and chlorine solution is discharged, the pipeline is flushed with water again and samples are taken for laboratory analysis. Water should be in conformance with GOST 2874-82 'Drinking water' standard. The results of flushing and disinfection are registered in a certificate that is drawn up by representatives of construction organization, water pipe operating department and sanitary and epidemiological control bodies.

Other facilities are turned over for operation in a similar way: builders submit the approved design estimates, documents confirming coordination of changes made to the design, certificate of allotment of land for construction purposes, licenses and certificates for equipment, stop valves, pipes, etc. of producer (suppliers).

6.8. Key objectives for operating water supply systems

Key objectives for operating water supply systems include:

- supplying consumers with good quality water in necessary quantity;
- feasible reduction in cost of 1m³ of water supplied to consumer and retaining of its quality;
- preservation of all waterworks for a maximum period of time in a condition suitable for normal operation.

Reduction of cost of 1m³ of water may be reached through reduction of operating costs or increase of annual capacity of waterworks. The latter is feasible only if the need in water increases.

Operating enterprise carries out regular monitoring of efficiency of waterworks and condition of water sources. It also measures yield and observes fluctuations of water level in the source of

water. The following activities are carried out for proper maintenance of all facilities:

- liquidation of leakages and ensuring tightness of water pipelines allows for retaining quality and quantity of water supplied to customer;
- timely and regular taking of readings of various control gauges ensuring performance of various facilities and constructions;
- timely preventive repairs and fast clearing of accidents;
- timely preparation of water pipeline for winter operation mode;
- systematic and regular cleaning of pipes;
- maintaining readiness of water pipeline for supplying water for the purpose of firefighting (duty personnel, water reserve);
- ensuring all hydrants are functioning properly;
- carrying out inventory of all facilities and equipment, especially subsurface ones;
- ensuring all safety regulations are carried out;
- labor protection and personnel safety;
- calculation of cost value of 1m³ and mutual settling of accounts with water consumers.

To ensure standard quality of water supplied to customers, it is necessary to constantly monitor water quality at water producing facilities and other elements of water supply system. For that purpose regular chemical and bacteriological water tests are carried out. To prevent water pollution, operating enterprise must develop internal regulations that regulate procedure for inspection and repairs of reservoirs, pipelines, treatment facilities, pump stations, etc.

When impurities are detected in water supply systems and also when new or repaired facilities are accepted for operation, they are to be disinfected by chlorination. All activities for protection of water quality in water supply system are carried out under supervision and management of sanitary inspectors. The objectives of control over quality of drinking water during operation of facilities include:

- regular sanitary inspection of water supply source, equipment and facilities, as well as territory adjacent to water intake points;
- ensuring proper sanitary condition of territory, quality and safety of water is the task of owners and operators of drinking water supply systems. They are to appoint persons responsible for technical conditions of facilities, their proper maintenance and operation, and carry out regular taking of water samples and their delivery to laboratory for carrying out analysis;
- carrying out preventive disinfection of water supply system and drawing up a corresponding deed;
- in case of adverse epidemiological situation or use of insufficiently protected surface water especially after precipitation, water in well (captation) must be disinfected regularly or within time limit coordinated with state sanitary and epidemiological control bodies.
- control over efficiency of water disinfection in wells (captations) is carried out by state sanitary and epidemiological control bodies. Methodology for carrying out disinfection of well and water treatment is listed in SanPiN 2.1.4.005-07.

It is very important that water suppliers develop action plans for emergencies. These plans must consider potential natural disasters, accidents and various actions of people. These plans must clearly indicate responsibilities for coordination of measures; contain notification trees for water supply system consumers as well as measures for provision and distribution of emergency water supplies.

7. Financial - Economic Regulations

7.1. Sources of funding of water supply and sanitation projects

In the first place, for organization of funding of drinking water supply project it is necessary to identify a customer – a legal entity or a natural persons that will manage financial resources, organize rehabilitation or construction process, register capital assets in books and provide for further maintenance and operation.

Sources of funding in the area of drinking water provision in RT include:

- republican and local budgets funds;
- funds collected from water consumers and users of centralized and non-centralized water supply systems;
- funds received from natural persons and legal entities for development of water supply systems;
- investments and grants from IOs and other sources not prohibited by legislation of RT.

For receiving budgetary financing, drinking water supply object must be included in the list of activities for implementation of main directions of district development programs that are funded from the republican and local budgets. The following is taken into consideration when drawing up budget for project implementation:

- national strategic development goals;
- sectoral goals and policies;
- state program for improvements of provision of population of Republic of Tajikistan with clean drinking water for 2008-2020;
- overall indices of previous programs and base indices;
- expected results of use of budgetary funds

Together with traditional tabular presentation of budgetary revenues and expenditures, a descriptive part filled out in accordance with formats of Ministry of Finance of RT (see appendices 4 and 5 of ‘Methodological guidelines for drafting and implementation of programs for development of regions in Republic of Tajikistan’ (2008)) is also attached. The descriptive part may be used by local executive

bodies for substantiating application for funding of programs from the state budget.

Use of investments from various international programs, projects, grants and their orientation for district development assumes inclusion of stakeholders interested in implementation of drinking water supply project in the process of search for investors. When applying to IS for financial support it is necessary to:

- clarify donor's availability and interest in project implementation;
- substantiate project implementation;
- take into consideration donor requirements about share of consumers in project implementation;
- draw up design estimates with assistance of specialized design and survey organizations and carry out project appraisal.

Upon mobilization of internal resources, a local program for search and involvement of local sources of funding with participation of public officials, entrepreneurs, representative of community organizations and local self-management bodies is developed.

Internal funds for project implementation may also be generated from:

- admission and membership fees, charity donations, volunteers' work; income from entrepreneurial activities allowed by law, etc.
- input of local population in carrying out voluntary work on parts of the project (digging of trenches for water mains, stringing, fencing of territory, etc.);
- charges collected from water consumers and users of centralized water supply systems; depreciation and consumer's maintenance funds;
- share or stock capital if a private company is established.

7.2. Planning and organizations of projects' funding

Initiative for development and implementation of drinking water supply project is registered as minutes of general meeting of commu-

nity representatives where construction or rehabilitation of object is planned and potential customer is identified. After that this decision together with pre-project substantiation is submitted to Jamoat Support Center (JSC) and District Development Council (DDC).

After the decision is approved by community, these organizations begin build-up and legalization of the consumer. Depending on the project complexity, the consumer orders a preliminary design and draws up a financial plan for its implementation including the following sections:

- receipts that are generated from acceptance fees, centralized and local budgets, credits, grants and other sources;
- expenditures that consist of expenses for upkeep of project management group and construction expenses (expenses for design and survey works, development of design estimates, assessment, obtaining approvals for special water use, siting, construction and purchase of equipment) including all charges, taxes and other expenses.

Preliminary design and financial plan are submitted to JSC and DDC for including in PRR as well as to donors and investors.

Upon the decision of funding organizations, financial resources are provided to the customers for organization of construction and other works for project implementation on the basis of the Memorandum of Understanding (MoU) signed between them.

MoU reflects intentions of both parties including financial management, accounting, procurement and reporting. For project implementation the customer opens a bank account where funds are transferred in accordance with funding schedule and MoU terms.

The customer must submit a report on expenditures and procurements to the funding organizations as well as other bodies in accordance with legislation of Rt.

MoU includes the following information:

- names of organizations entering into MoU, their legal addresses, and names of officers signing the document;
- general clause reflecting the urgency of problems and expressing interests in solving them through project implementation;

- project goals and objectives, and its composition;
- stage of work; dates of their completion; cost, and sources of funding of each stage;
- terms of payment with amount of each tranche, and activities that must be implemented;
- submitting documents by the customer stating the deadlines confirming completion of each and every stage or the project in general (contracts, deeds, minutes of meetings of tender committee, deeds of works completed and bills for payment of works, procurement of equipment and services);
- the customer's commitment to training of employees in financial management; completion of the project within the agreed timeframe; management including financial management and procurement; investment of own funds into the project; control over implementation of works and reporting to investors according to the agreed format and frequency including free access of investors to bookkeeping and other documentation;
- the investors' commitment to making payment in accordance with the agreed conditions and stages; participation in work coordination on level of Khumats and other donors for settling down problems of project implementation including recommendations for work improvement;
- appendices to MoU including list of beneficiaries, plans for project management (officers responsible for project implementation, administrative procedures for decision making, taking measures to ensure the parties of the MoU fulfill their obligations), administrative and financial measures (officer responsible for keeping accounts, storing and submitting financial reports and project accounts; accounting system for managing of funds and bookkeeping; plan for opening a bank account).

7.3. Engineering and economical performance and substantiation of construction

Engineering and economical clauses of the project must identify: cost of water supply system (sewage); cost of 1 m³ of supplied (diverted) water; cost of network for 1m³ of purified water; construction cost of the system in relation to a product unit of an industry or 1m³ of supplied and purified water; length of water pipe system per person; electricity cost for 1m³.

Feasible options for solving the problem of drinking water supply are considered and compared based on assessment of the current condition of water supply taking into account local conditions.

These options are worked out during the TEA (technical and economic assessment) stage and include:

- construction of a new system corresponding to the effective practical and environmental standards using new technologies for water treatment, materials and equipment together with pumping water by pump stations or gravity flow;
- reconstruction of the existing system together with improvement of its efficiency and utilization of new technologies, materials and equipment;
- other feasible options.

For instance, water supply system includes:

- water intake facility;
- system for water purification and disinfection
- deliver mains for supplying water to distribution points;
- distributing pipe for supplying water to specific consumers;
- regulating reservoir.

Depending on the summed demand in water, key parameters of all elements of the system listed above are identified. After that, scope of work is identified together with its market value considering transportation, inflation and price change.

These reduced expenses (capital investments and annual operating costs reduced to single dimension using efficient factor) serve as the main criteria for selection of an optimum alternative for water supply. The format of such comparison is presented in Table 1.

Table 1. Comparison of TEA options and selection of an efficient decision on drinking water supply

№	Capital investments for project implementation <i>K</i> thousands/somoni	Annual operating costs <i>S</i> thousands/somoni	Specific capital investments for supply of 1m ³ of water <i>Kud</i>	Cost of water purification <i>C=Gyear : S</i> Somoni/litre	Reduced expenses <i>P=EnK+S</i> Somoni/year
1	2	3	4	5	6
1					
2					
3					
4					
5					

Option with the minimum reduced cost is economically sound.

Key important social and economic measures of the project are:

- number of people having a stable supply of drinking water;
- successful collecting of money for water supply services;
- reduction of the number of water-borne diseases;
- saving time for water supply;
- improvement of life conditions of people.

7.4. Procedure for preparation of the investment project

The project must be submitted in accordance with the following instructions:

- the title page should bear the name of the project; name of organization, its address, telephone number; e-mail, names of director and accountant; project location and its time frame; name of organization supporting the project; full cost of the project, funds available, funds requested, information about donor funds received before; name of contact person, his/her job title; date of project preparation.
- the abstract should contain the name of the project executive; its cost; water supply problems; project goals and objectives;

mechanisms for implementation and control over expenditures; project duration and key results.

- short information about organization submitting the proposal (2-3 paragraphs); short description of work, goals and objectives; short description of implemented projects and those under implementation;
- problem statement and substantiation of the need to solve it (up to one page); proofs and substantiation of the urgency of the project for the specific location; feasible options for solving of the problems and expected project results. This part should also inform about support rendered to the project by inhabitant of the project area; their number and social composition. It is also necessary to list statistical data about project results, enclose pictures, graphs, diagrams, etc. It is important to show that the problem is impossible to solve without donor's participation;
- project goals and objectives (up to one page). The goal should reflect obvious benefit of the project and indicate the results of the project. The objectives must reflect implementation stages to reach the project goal.
- tools and mechanisms for achieving the objectives. It is necessary to clearly state the logic and implementation methods for achieving project goals and objectives; materials and equipment that are planned to be used; human resources and specialists. Also one needs to state the stage of activities before project commencement, during its implementation and after its completion indicating timeframe and executors;
- work plan for project implementation provides for a schedule for work implementation stating the deadlines;
- specific expected results (up to one page) should contain quantitative information about project results (number of families with access to drinking water; length of water pipes network; number of hydrants; solving of the issues of drainage system and irrigation water, etc.)
- carrying out assessment and monitoring of the results by independent assessors (2-3 paragraphs) providing for transparency and objectivity.

This cart should answer the following questions:

- methods for project efficiency assessment and monitoring indicators;
- description of assessment procedure;
- criteria and mechanisms for assessment of project efficiency;
- beneficiaries' assessment through questionnaire.
- ensuring sustainable operation (2-3 paragraphs) including the following issues: what resources are planned to be used for project sustainability?
- clearly indicate long-term impact and changes (2-3 paragraphs) that may effect the situation in the area;
- every budget line of the project financial plan must be substantiated indicating the availability of funds (proved by documents) and the requested amount of donor's support. It is necessary to draw up a staff list indicating transaction costs and expenditures for project implementation. It is also important to indicate methods of control over the expenses. The financial plan and the appendices must be submitted separately and in duplicate as they are looked at separately. The financial plan is to be submitted in two formats: first, with break down by periods; second, with breakdown by sources of funds and budget lines.

7.5. Drawing up of a financial plan and expenditure items taking into account enterprise profitability and control over draft on funds

Planning is one of the main stages of drawing up of economically efficient expenditure items for maintenance of drinking water supply system. Routine expenditures for every budget lines are determined based on the analysis of actual expenses and their changes in the planning period through:

- assessment of efficiency of expenses;
- taking into account the impact of decrease of the sales volume of services on the amount of cost per unit as a result of resource-saving, installation of control and regulation devices;

- taking into account additional expenses for implementation of a list of works and services ensuring quality and environmental security in accordance with agreement. In this regards it is necessary to estimate the need in investments for funding of planned events from the enterprise development fund as well as additional operation costs for some budget lines and their decrease for others.

When planning cost value, in particular when calculating expenses for each budget line, two groups of factors need to be taken into consideration:

- those that decrease cost value by utilizing anti-cost based mechanism and energy-saving activities;
- those that increase cost value due to increase of share of conditionally constant expenditures, increase of Consumer Price Index determining inflation level, and also introduction of technological processes improving service quality.

To calculate cost value of the service unit, i.e. cost of supply of 1m³ of water to a consumer, first, it is necessary to determine cost value of selling the total amount of water supply.

Planned cost value of 1m³ is determined by dividing a total amount of planned annual expenses for a design (project) annual volume of water supply calculated based on standards (limits) for its consumption and a total number of consumers:

$$S_u = S_{\text{total}} / Q_{\text{total}}$$

S_u – planned cost value for 1m³;

S_{total} – total amount of planned annual expenses (thousands/somoni)

Q_{total} – total volume of water supply (thousands m³).

Recommendations for calculation of planned expenses across the main budget lines are listed below.

Planned expenses for materials, fuel, electricity and other factor costs depend on the volume of supplied water. When estimating a

volume of supplied water necessary to consumers, they are added together with its losses and expenses for auxiliaries. Introduction of system of accounting for consuming energy resources, decrease of losses, unrecorded expenses and auxiliaries (replacement of rundown stock, implementation of investment projects aimed at technology improvement, other activities) must result in decrease of expenses for materials, fuel, electricity, etc. that are changing in proportion to the volume of supplied water.

Planning of expenses (cost value) must be preceded by development of production program for organization of water supply. Calculation of the necessary volume of water supply taking into account forecast of introduction of system of accounting for consumption of resources as well as activities for technology improvement, replacement of rundown stock, etc. aimed at decrease of water losses during its production and transportation to consumers is the key part of this program.

Expenditures include the following:

1. Expenditures on material and energy resources used for technological purposes (water purification, disinfection, etc.) are determined based on standards of consumption of each specific type of resources (adjusting times after analysis if necessary), planned volume of water production and price per unit of the resources.

2. Expenditures for electricity occupy a significant specific weight in cost value of water supply.

Calculation of expenses in this cost value budget line is based on data about specific weight of electricity consumption of 1m³, total volume of water supply and price for 1kVt/hour of electricity.

Unit discharge of electricity is determined for each stage of production and selling of a service, i.e. a total consumption of electricity for production and supply of 1 m³ of water including its ascent, purification and transportation.

Unit discharge of electricity is accepted either following the effective standards or based on calculated data about total power of electric engines, duration of their work (hours) in the planned period, their efficiency factor, or based on actual showings after their analysis, comparison with similar enterprises and necessary adjustment.

When planning expenses for “Electricity” budget line, it is necessary to provide for decrease of water losses on every stage of its

production and supply to consumer, especially losses in the networks, as well as decrease of the volume of water consumption as a result of measures for introduction of accounting and innovative technologies.

3. Basic and additional pay of production workers including annual and additional leaves, pecuniary compensation for their disuse, payment for work during holidays and weekends, bonuses as well as deductions for social insurance. Staff schedule drawn up according to the standards of number of employees serves as a base line for calculation of expenses for remuneration of labor.

4. Depreciation charges for complete rehabilitation of fixed assets are determined based on their initial cost and the effective standards for depreciation charges. When planning these expenses, special attention should be paid to their revaluation in accordance with real market value. Depreciation for complete replacement of fixed assets may be done monthly at the rate of 1/12 of the fixed annual norm of initial or replacement cost of fixed assets for a given month and is reckoned toward cost value of services. Similar to fixed assets newly introduced into operation, depreciation is calculated at the rate of 1/12 of the fixed annual norm from their initial value starting from the first of a month following the month of commencement of their operation. Depreciation charges for retired assets are discontinued from the first of a month following the month of their actual retirement (writing off balance).

5. Repairs fund for fixed assets repairs. For calculating standard deductions for the repairs fund, expenses for lubricants, cleaning cloths and other operation and repairs materials and spare parts used for routine and capital reports of fixed assets and their maintenance are taken into account. It also includes remuneration and deductions from wages of staff auxiliary and repair men servicing the fixed assets. When calculating standards for establishing repairs fund, expenses for emergency work in the networks are not taken into account. Actual value of these works is reckoned towards 'Emergency repairs and rehabilitation' budget line and also 'Reimbursement of expenses for servicing in-house networks' budget line

6. When enterprises do not establish repairs fund or establish a fund only for fixed assets to be replaced including purchasing of specific equipment and machinery, expenses for repairs are planned in 'Repairs and maintenance' budget line. A list of repairs set forth in

service agreement and resource standards for carrying them out serve as a basis for calculation of these expenses.

7. Expenses for carrying out emergency and rehabilitation work include cost of services of off-site organizations. Planning of expenses for emergency and rehabilitation work is done based on analysis and accounting of previous expenses for similar works.

8. Shop and general operation costs include expenses relating to management and upkeep of certain services and subdivision of the enterprise. These costs include remuneration to shop and administrative and management staff; consultation, methodological, information, and audit services; business trips and representation expenses; expenditures for training and re-training of personnel; cost of items given for free including uniform, etc. In case of availability or establishment of a shop laboratory for determining water quality, the following expenses should be included in the shop costs:

- remuneration of labor of laboratory personnel;
- deductions from payment of their remuneration;
- reimbursement for tear and wear of items of little value and uniform, devices and their repairs;
- payment for analysis and tests, etc.

Planning for shop and general operation costs is carried out on the basis of analysis of actual data, their dynamics for a number of years and changes planned in the project period.

7.6. Improvement of enterprise accounting system and reporting

‘1S-Bookkeeping’ financial accounting software is used for accounting purposes and reporting together with cash book where primary documents are registered manually. Registration entries must also be supported by formats indicated in 1S-Bookkeeping.

Accounting reports and documentation are registered in the following order:

- initial documents reflecting financial performance – contracts, agreements, official letters, orders, payroll records, etc. are drawn up and registered in conformity with the Civil Code of RT;

- initial documents are registered in the enterprises account books, electronic spreadsheets and registers after carrying out certain activities (works, agreements, contracts, etc.)

All initial (source) documents must be registered and kept in the following file folders:

- all copies of topping-up of a Special Account including attachments and regulations on expenses, payroll records, extracts from donors' approvals and their printouts, initial (source) documents of monthly statements and applications for direct payments are kept in the 'Applications for money withdrawal' file'
- supporting documentation is kept in the 'Applications for receipt of money from co-financing accounts'' file folder;
- a file folder for temporary storage of copies of bills payable until payment of these bills;
- a file folder for instructions for bank payments is used for keeping bank statements for every special account;
- a file folder for requests for cash is used for keeping receipt confirming payment of cash together with supporting documentation and advance orders;
- file folder for payroll records is used for storing information about payment of wages and timesheets;
- copies of procurement agreements are stored in file folder on fixed assets;
- information on inventory of tangible property is kept in 'Inventory' file folder;
- copies of personnel documents are kept in 'Personnel' file folder.

Registration books are divided into:

1. Register of applications for topping-up a Special Account (including direct payments).
2. Register of bank payment orders.
3. Register of applications for co-financing.
4. Register of capital assets.

Journal for register of accounting transactions consists of a cash books which is filled out manually, and automatic registration with monthly copies of documents

Signed copies must be stored in the following registers:

- general fiscal accounting;
- special account (USD);
- transit account (somonis);
- co-financing account (somonis);
- cash-book;
- capital assets;
- inventory account;
- payment orders account.

7.7. Procedure for development, approval and introduction of rates for drinking water supply services

Payment rates for water supply and sewage services must make up for its need in funds determined as a sum total of annual operation costs and planned profit. Rates must be calculated on the basis of ‘Regulations on calculation of cost value of products (works, services) by enterprises and organizations of housing and communal services of Republic of Tajikistan’ approved by decree #210 of the Government of Republic of Tajikistan as of 12 May 1999.

‘Branch regulations on calculation of cost value of products (works, services) by enterprises and organizations of housing and communal services of Republic of Tajikistan’ coordinated with the Ministry of Finance of RT, Ministry of economy and trade of RT (at present Ministry of economic development and trade of RT) and State agency for anti-monopoly policy and support on entrepreneurship under the Government of RT (this organization is rescinded and its functions are carried out by a department at the Ministry of economic development of RT) may be used as an example.

Cubic meter of supplied water is a calculation unit for calculation of cost value of water supply services; cubic meter of diverted waste water is a unit for calculation of water drain (sewage) services.

When planning, accounting for and calculating cost value of services, expenses in relation to production and implementation of services are clustered around the following expense items:

- 1) materials;
- 2) fuel;
- 3) electricity;
- 4) remuneration of labor;
- 5) deductions for social needs;
- 6) depreciation;
- 7) repairs fund;
- 8) repairs and maintenance or reserve for payment for all types of repairs;
- 9) maintenance and service of in-house networks;
- 10) carrying out of emergency and rehabilitation works;
- 11) procurements of products;
- 12) other direct expenses;
- 13) shop expenses;
- 14) general operation expenses;
- 15) off-operation expenses.

Organizations of water supply and sewage services draw up the following calculations of cost values in conformity with formats approved by the State Statistical Committee of Republic of Tajikistan:

- Form 6 v – Reporting calculation of cost value of supplied water (Annex №6).
- Form 6 k – Reporting calculation of cost value of diversion of waste water (Annex №7).

The above forms consist of two parts. The first part reflects actual indices on the amount of supplied water and its quality that should also be reflected in the service agreement.

Actual indices indicated in the cost value calculation must correspond to the indices in the service agreement.

When determining a total volume of water supplied into the network and sold to consumers, during the planning phase it is necessary to take into consideration losses until the water reaches water meters, depending of the condition of fixed assets (first of all, net-

works). Drains over the established standard must be written off at the expense of the results of financial activities of the enterprise.

Drains after water meters in the systems of internal sanitary-wear equipment before installation of meters are included in the water consumption standard as a reserve depending on the conditions of the equipment.

Drains after water meters are reflected in the total volume of consumer water. After installation of meters, the total volume of water sold to consumers is determined based on readings of the meters.

The second part is used for indicating enterprise expenses on calculation lines. Calculation of cost value of services for water supply as well as for water drainage is done according to work areas: water ascend (pumping of waste water), water purification (purification of waste water), water transportation (transportation and recycling of waster water).

The following are the peculiarities of planning, accounting and calculation of cost value of services in the plumbing water and sewage management:

- reflection of cost value of depreciation services in accordance to who manages civil engineering infrastructure (networks, treatment facilities, pump stations, etc.)
- establishing of repairs fund for facilities the volume and technical qualities of which do not allow for their repairs within one calendar year, for uniform inclusion of impending expenses including procurement of special machinery and equipment;
- reflection of expenses for carrying out all types of repairs for 'Repairs and maintenance or reserve for payment for all types of repairs' budget line in cost value of services only in case when no repairs fund is being established in the water and sewage management or it is established only for capital assets included in civil engineering infrastructure;
- including a separate budget line for payment received from drinking water into cost value of water supply;
- establishing of a combined budget line for carrying out emergency and rehabilitation works in cost value. This budget line includes expenses for liquidation of consequences of an accident;

When determining prices for water and water drain, it is recommended to determine the amount of profit on the basis of profit of payments of water and sewage management enterprise. In this case planning of profit is based on the need for development and upgrading. An investment program coordinated with the state authorized body or owner of enterprise property serves as a basis of profit calculation. Profit calculation should be done considering profit taxes paid in conformity with the effective tax legislation; establishing of enterprise development fund; social development of personnel including establishing of consumption fund, and other expenses including interest payment on credits.

State regulation of water supply rates and provision for target social compensation payments for supporting sustainability of water supply enterprises is necessary.

7.8. System of collection of payments for services provided

Relations between water suppliers and water consumers are regulated by service agreement for supplying drinking water that reflects conditions and obligations of the parties, volume of water, cost of services (according to the rates) as well as possible penalties. The enterprise develops a clause of the agreement on collection of payment for services provided that should conform to legislation or RT, i.e. in case of natural monopoly the agreement must be coordination with anti-monopoly department of MED RT. If the clause is not coordinated, the agreement does not have legal effect. Besides, it must be in conformance with articles 569-579 of Civil Code of RT and Law of RT ‘On protection of consumer’s rights’. List of key normative documents that provide the consumers with benefits for drinking water supply and sewage services (Annex №8). In accordance with article 14 of Law of RT ‘On self-management bodies in settlements and villages’, Jamoat reference includes assistance in collection of payments and ensuring protection of consumers’ rights.

Payment is collected monthly based on bills for water consumption. When water is taken from the street water column, the payment is calculated for one household taking into account the number of inhabitants, presence of cattle and poultry in accordance

with their standards of water consumption. Monthly payment is made by water consumer to savings bank office on the account of operating enterprise or to its accounting department. The issues of arrears of payments are solved following the procedure stipulated for in legislation of RT.

To organize efficient accounting for and collecting of money, it is necessary to implement the following:

- divide consumers of services by categories;
- place copies of approved rates for services in public places;
- develop a consumers' journal or an electronic database of consumers and open a personal account for every consumer;
- draw up and sign agreements on every type of services separately with every category of consumers;
- draw up a notification format – receipts for consumers, and number them;
- in case services are paid for via bank transfer, it is necessary to carry out collation of mutual settling of accounts;
- in case services are paid for in cash, a consumer should be provided with receipt;
- information (receipts, bank collation) on payment for services must be entered into the journal or database;
- consumers should be officially informed about arrears;
- data on persons entitled for benefits must be collated by district social security departments and Jamoats annually;
- information about persons entitled for benefits must be submitted to district finance department for obtaining subsidy from the corresponding budget;
- account for persons entitled to benefits and data on population growth for subsequent forecast of estimate of expenditures and income for development of new rates;

Information

On the progress of «Programme on Improving the Clean Drinking Water Supply to the population of Tajikistan for the period of 2008-2020», results of 2008 and first half of 2009.

№	Item	Source of Funding (thousand somoni)									
		Total		Budget of RT		Local budget		Investment		Economic activities	
		According to the programme	In fact	According to the programme	In fact	According to the programme	In fact	According to the programme	In fact	According to the programme	In fact
	Total in Tajikistan	287380,2	70296,0 24,5%	43107,0	12170,7 28,2%	28738,0	711,3 2,5%	201166,1	54323,5 27%	14369,1	3090,5 21,5%
1	«Tajikselkhozvodoprovodstroy»	71564,4	4357,7 6,8%	10734,7	1144,6 10,7%	7156,5	78,0 1,1%	50095,0	3061,2 6,1%	3578,2	73,8 2,1%
2	GUP KhMK	57394,9	19205,5 33,5%	8609,3	2884,5 33,5%	5739,3	550,3 9,6%	40176,4	14104,1 35,1%	2869,8	1646,6 57,4%

The Programme is approved by the Decree of the Government of the Republic of Tajikistan from December 2, 2009, #514.

Law of Republic of Tajikistan «On drinking water and drinking water supply»

The present Law regulates relations in the area of drinking water and drinking water supply and establishes state guarantees for provision of population with drinking water.

Chapter I. General Provisions

Article I. Key concepts

Key concepts used in the present law:

drinking water – water the quality of which in the natural state or after treatment (purification, disinfection, addition of missing substances) meets standard requirements that are established by the corresponding state authorities and is intended for drinking and everyday necessities of people or for production of food and medical products;

standards for drinking water quality (standard requirements) – set of acceptable characteristics of chemical and microbiological composition and organoleptic qualities of drinking water that are established by scientific-research methods and regulated by sanitary norms that guarantee its safety and harmlessness for human health;

drinking water supply – activity aimed at satisfying needs of natural persons and legal entities in drinking water;

drinking water source – water body (reservoir, waterway, or aquifer) or its part which is used or may be used for drinking water supply after a corresponding purification or without it;

centralized drinking water supply system (common use water pipe) – a set of structures and facilities for abstraction, treatment, storage and supplying of drinking water to consumption points open for common use by natural persons and/or legal entities;

non-centralized drinking water supply system – structures and facilities for intake and treatment (or supply without treatment) of water to consumption points open for common use by natural persons and/or legal entities;

autonomous drinking water supply systems – structures and facilities for intake and acquisition of drinking water with further supply (or without it) to consumption point that is used individually (detached house, farm, suburban house or any other detached object);

drinking water supply system in transport facilities – installation and equipment in transport facility for drinking water supply system to passengers, crews and attendants during travel on passenger or any other transport;

drinking water supply system – notion used in the present Law non-specifically for labeling all systems with common standards for centralized, non-centralized, autonomous and other systems of drinking water supply in transport facilities;

reliability of drinking water supply system – characteristic of a system to support a certain schedule (uninterrupted, by the hour, according to the schedule) of drinking water supply to consumers in accordance with the established drinking water supply standards and normative requirements for the drinking water quality;

water supply sanitary protection zone – territory and water areas that are subject to special standards for economic and other activities for prevention of deterioration of water quality in drinking water sources, and their protection;

drinking water consumption standards – estimated amount of drinking water necessary for satisfying physiological and domestic needs of one person during one day (24 hours) in a particular settlement, detached object or transport facility subject to normal operation of drinking water supply systems; their malfunctioning, or in emergencies;

drinking water supply enterprises – legal entities that run centralized or non-centralized drinking water supply systems;

drinking water consumers – natural persons and legal entities consuming drinking water for their needs.

Article 2. Legislation of Republic of Tajikistan in the area of drinking water supply

Legislation of Republic of Tajikistan in the area of drinking water supply is based on the Constitution of Republic of Tajikistan, the present Law and other normative and legal deed of Republic of Tajikistan as well as international legal deeds acknowledged by Republic of Tajikistan.

Article 3. Goals of the present Law

The goals of the present Law are:

- establishing legal guarantees and satisfying needs of natural persons and legal entities in drinking water;
- establishing of economic basis for drinking water supply;
- establishing state guarantees for uninterrupted drinking water supply as well as grounds for liability for breach of law in the area of drinking water supply.

Article 4. Underlying principles of drinking water supply

The underlying principles of drinking water supply are:

- state guarantees for immediate satisfaction of needs in drinking water of natural persons and legal entities for ensuring their vital needs and health protection;
- state control and state regulation on drinking water supply issues;
- accountability of natural persons and legal entities to local authorities in charge of state control over use and protection of water as well as state management bodies in charge of civil defense and emergencies within their reference;
- ensuring safety, reliability and controllability of drinking water supply systems subject to their technological peculiarities and selection of a water source in accordance with common standards in effect in Republic of Tajikistan;
- drinking water supply accounting;
- charging for drinking water supply;
- state support to development of drinking water supply systems, production and provision of equipment and materials

for their maintenance as well as chemical agents for water purification and disinfection.

Article 5. Subjects and objects of legal relationship in the area of drinking water supply

Subjects of legal relationship in the area of drinking water supply may include:

- The Government of Republic of Tajikistan;
- specially designated state body in the area of drinking water supply;
- local authorities;
- natural persons and legal entities irrespective of form of ownership.

The objects of legal relationship in the area of drinking water supply are water objects (or their parts) within the defined borders that are used as a source of drinking water supply.

Article 6. Reference of the Government of Republic of Tajikistan in the area of drinking water supply

Reference of the Government of Republic of Tajikistan in the area of drinking water supply includes:

- defining and providing for carrying out a common state policy in this area;
- approving of state programs for drinking water supply development in Republic of Tajikistan;
- approving of normative legal deeds covering the issues of drinking water supply;
- defining procedure for licensing of activities in the area of drinking water supply;
- defining accounting and reporting procedures in the area of drinking water supply;
- defining state control and supervision procedures in the area of drinking water supply;
- approving of rates for drinking water supply;

- allocation of budget and other means for rehabilitation of water supply systems in the areas of detrimental effect due to emergency situations;
- international cooperation regarding water supply issues.

Article 7. Reference of authorized body in the area of drinking water supply

Reference of the authorized body in the area of drinking water supply includes:

- preparation and implementation of main areas of state policy in the field of water supply;
- implementation of a common public scientific and technical policy for provision of consumers (natural persons and legal entities) with drinking water in accordance with quality standards and norms of drinking water consumption;
- coordination of scientific research in the area of drinking water supply and production of necessary materials and chemical agents for purification and disinfection of drinking water, and ensuring funding for such research;
- arranging for rate setting and accounting for drinking water consumption;
- carrying out licensing of drinking water supply activities;
- determining procedure of mandatory certification of drinking water;
- approving of target territorial programs and activities plans for establishing, maintenance and development of drinking water supply systems;
- determining measures for protection and security of drinking water supply sources and systems;
- arranging for technological and ecological audit of drinking water supply systems;
- arranging for training, re-training and professional development of personnel in the field of drinking water supply;
- determining procedure for certifying drinking water quality standards;
- submitting drafts of normative legal deeds on legal and economic regulation of drinking water supply to the Government

- of Republic of Tajikistan following the established procedure;
- providing for development and approval of standards and guidance for operation of drinking water supply systems.

Article 8. Reference of local authorities in the area of drinking water supply

Reference of local authorities in the area of drinking water supply includes:

- approving of target programs and plans of activities for establishment, maintenance and development of drinking water supply systems;
- improving of quality of drinking water and its efficient use;
- protecting drinking water sources from pollution, infestation and depletion;
- protecting drinking water supply systems and sources from damage;
- approving distribution limits and schedules for natural persons and legal entities for immediate satisfaction of needs of natural persons;
- making decisions on allotment or withdrawal of plots of land with the purposes of drinking water supply;
- arranging for provision of legal entities and natural persons with drinking water in accordance with the standards of drinking water consumption;
- arranging for procedure of acquiring off-budget funds in the area of drinking water supply.

Article 9. Forms of ownership of drinking water supply systems

Drinking water supply systems may be in public (republican and municipal) ownership as well as in ownership of legal entities and natural persons.

Transfer of title or changing of the form of ownership of centralized or non-centralized drinking water supply system is allowed provided that such transfer or change will not affect performance of these systems.

List of drinking water supply systems of vital importance is determined by the Government of Republic of Tajikistan.

Article 10. Centralized drinking water supply systems

Centralized drinking water supply systems are principal for provision of uninterrupted supply of drinking water to consumers and are ascribed to particularly critical life support systems, and are also considered vitally important for supplying urban and other settlements with drinking water. Requirements for selection of drinking water sources for centralized drinking water supply systems are established by the normative legal deeds of Republic of Tajikistan in the area of drinking water supply. As a rule, management of centralized drinking water supply systems is carried out by special bodies identified by the Government of Republic of Tajikistan.

The owner may manage centralized drinking water supply systems independently or transfer them to legal entities for management purposes or day-to-day management under an agreement.

Article 11. Non-centralized, autonomous drinking water supply systems

Non-centralized and autonomous drinking water supply systems are established for provision of consumers with drinking water in the absence of centralized drinking water supply systems.

Requirements for selection of sources for drinking water supply for non-centralized drinking water supply systems are established by normative legal deeds.

Owners of non-centralized drinking water supply systems and drinking water consumers (natural persons and legal entities) use water bodies as a source of drinking water supply following the procedure established by legislation of Republic of Tajikistan.

Management of non-centralized drinking water supply systems may be carried out by the owners of these systems independently or delegate management authorities to other natural persons and legal entities.

Article 12. Drinking water supply system in transport facilities

Drinking water supply systems in transport facilities are a constituent part of these facilities. Owners of transport of transport facili-

ties provide for sound state of water supply systems in transport facilities and control of conformity of quality of drinking water in these systems to normative standards.

Article 13. Ensuring state regulation of drinking water supply development

Water supply development is ensured through implementation of long-term and annual republican and territorial programs of providing population with drinking water. Drinking water supply is to be included in the plans for social and economic development of political units. Design, construction and reconstruction of centralized and non-centralized drinking water supply systems is carried out in accordance with rated indices of general plans for territorial development; construction and sanitary standards and requirements; environmental requirements; state standards coordinated with relevant authorities. Reliability specifications for centralized and non-centralized water supply systems under destabilizing factors of man-made or natural origin should be taken into consideration when planning projects for construction of said systems.

Article 14. Drinking water supply funding

Sources of drinking water supply funding are:

- funds from the republican budget that are directed for implementation of measures provided for in the state programs for development and improvement of drinking water supply systems;
- funds from local budgets;
- fees paid by consumers and users of water;
- funds of natural persons and legal entities for development of drinking water supply;
- other sources not prohibited by legislation of Republic of Tajikistan.

It is allowed to establish off-budget local funds for target funding of development of drinking water supply. The procedure for establishment of these funds is developed by local authorities.

Article 15. Rate charges for drinking water supply

Rate charges for drinking water supply are calculated in accordance with principle of defrayment of expenses for operating water supply facilities; use of water sources; production of drinking water and its supply to consumers and users; implementation of a set of necessary measures for ensuring operation, sanitary protection, maintenance and development of drinking water supply upon their filing by water supply agencies. The rates are approved by specifically designated bodies.

The procedure of determining rates in the area of drinking water supply is approved by the Government of Republic of Tajikistan.

Article 16. State support of drinking water supply

State support is expressed through provision of preference in crediting, taxation, paying of customs fees as well as other benefits for use of machinery and technologies for obtaining quality drinking water; attracting domestic and foreign investments; ensuring population access to drinking water in accordance with norms and standards of water supply.

Credit, customs, tax and other benefits for organizations within the drinking water supply system despite their form of ownership and subordination, manufacturers of equipment, materials and reagents, as well as investors are determined by legislation of Republic of Tajikistan.

Chapter 2. Guarantees for provision with drinking water

Article 17. State guarantees for provision of population with drinking water

The state guarantees provision of drinking water corresponding to the established quality standards to every person in quantities corresponding to the standards of drinking water supply.

Needs of population in drinking water in place of habitation are satisfied through measures aimed at priority development of centralized or non-centralized drinking water supply systems as well as rendering state support and provision in accordance with the present Law.

Guarantees of the rights of citizens for drinking water in public locations (railway stations, airports, parks, beaches, etc.) as well as during travels in transport facilities for more than three hours are assured by the owners of these objects.

Article 18. Ensuring drinking water quality

Quality of drinking water supplied to consumers (natural persons and legal entities) must correspond to standards and is assured by the following measures:

- appropriate selection of water source and water purification technology;
- continuous control over drinking water quality in drinking water supply systems;
- only use in drinking water supply systems equipment, materials and reagents the safety of which is confirmed by certificates of conformance following the established procedure;
- recurrent approval and change of standards of drinking water and sources of water supply every 5 years in accordance with new scientific information;
- protection of sources of centralized and non-centralized drinking water supply systems (establishing sanitary protection zones and taking other measures to protect drinking water from pollution accidentally or on purpose);
- development of model programs for operation and drinking water quality controls in centralized and non-centralized water supply systems considering local conditions;
- approval of strict measures for periodic control by specifically designated state bodies of sanitary and epidemiological control over drinking water quality in situations that threaten human health due to deterioration of water quality.

Article 19. State control of and accounting in the area of drinking water supply

State control in the area of drinking water supply is carried out by bodies and agencies of state sanitary and epidemiological control service together with state environmental bodies and specifically designated state bodies for regulation of use and protection of water.

Accounting for water supply sources is carried out by specifically designated bodies on management of use and protection of water fund together with hydrometeorology and environment protection bodies (surface water sources); state body for management of use and protection of subsurface areas (subsurface water sources); and state bodies for sanitary and epidemiological control.

Accounting for quality of drinking water and control over correspondence of its quality to the established standards is carried out by sanitary-epidemiological bodies and agencies.

Accounting for water consumed from the centralized drinking water supply systems is carried out by the owner of these systems.

State control over observance of construction standards and regulations for design and construction of water supply facilities is imposed on state bodies for control of construction and architecture.

State control of and accounting for drinking water is carried out following the procedure established by the Government of Republic of Tajikistan.

Article 20. Protection of drinking water supply sources and systems

Protection of drinking water sources from pollution, extinction, depletion, and protection of water supply systems from damage and destruction is a compulsory condition for safety and harmlessness of drinking sources. The protection is carried out through implementation of sanitary and environmental requirements as well as measures for prevention of pollution, extinction and depletion of surface water bodies; establishment of sanitary protection zones around water supply sources and systems (except for water supply systems in transport facilities), and observance of security of the established zones.

Sanitary protection zones for all sources as well as centralized and non-centralized drinking water supply systems regardless of form of ownership are established in order to prevent accidental or deliberate water pollution.

Spillover of waste water is prohibited within the first and the second zones of sanitary protection of drinking water sources.

Spillover of waste water of cities, industries, agricultural facilities containing contaminants and biological components in quantities exceeding standards for maximum allowable spillover established in

the documents is prohibited within the third zone of sanitary protection areas.

Organization of sanitary protection zones, procedure for their design, use and establishing of sizes and corresponding water protection standards, determining a set of measures for sanitary protection including a list of prohibited or limited activities is carried out in conformity with sanitary regulations that are approved by the state body in charge of sanitary and epidemiological control.

The following bodies are in charge of carrying out a set of measures for sanitary and environmental protection:

- water supply enterprises;
- local authorities carrying out economic activities on the territory of these objects.

Control over implementation of the set of measures and observance of the requirements of sanitary protection zones is carried out by sanitary and epidemiological control bodies as well as specifically designated environment protection bodies.

State bodies and local authorities may foresee additional measures for prevention of deliberate pollution and damager of water supply sources and systems.

Article 21. Certification in the domain of drinking water supply

The following areas are subject to certification in the domain of drinking water supply:

- drinking water in the systems of drinking water supply;
- drinking water in containers intended for sales to consumers;
- technological processes, equipment, materials, means and chemical agents for water purification and disinfection.

Certification in the domain of drinking water supply is carried out following the procedure established by the Government of Republic of Tajikistan.

Article 22. Licensing in the domain of drinking water supply

Activities of legal entities and natural persons in the domain of drinking water supply are subject to licensing following the procedure established by the Government of Republic of Tajikistan.

Article 23. Guarantees for provision of drinking water in case of dysfunction of centralized and non-centralized water supply systems

In case of dysfunction of centralized and non-centralized water supply systems resulting in failure to comply with the established standards for drinking water supply to customers and/or nonconformance of water quality to the approved standards, local authorities, local self-management bodies, owners of the systems and water supply enterprises must take measures within their reference for supplying consumers with drinking water from reserve drinking water sources and systems, technical means for domestic and collective water purification and disinfection, and deliver water in reservoirs for general use.

List of measures taken in situations in connection with dysfunction of centralized and non-centralized drinking water supply systems is determined by emergency activities plan for providing inhabitants of certain areas with drinking water.

Article 24. Guarantees for drinking water provision in emergency situations

Provision of consumers with drinking water in emergency situations (accidents, catastrophes, natural disasters that result in contamination of water sources, destruction of systems of water supply, purification and disinfection leaving consumers without water for more than a day) is carried out by local authorities and state bodies for management of emergencies.

Emergency situations in drinking water supply are forecasted by local authorities together with civil defense and emergencies agencies, water supply enterprises, and measures are planned for providing consumers with drinking water in accordance with standards established for such cases, and liquidation of consequences of emergency situations.

Expenses in connection with standard supply of population with drinking water in emergency situations are covered against funds allocated for liquidation of consequences of emergency situations.

Article 25. Right and obligations of the owners of drinking water supply systems and water supplying enterprises

Owners of water supply systems and water supplying enterprises have a right to:

- require timely payment from drinking water consumers for services rendered in accordance with the established rates;
- prosecute claims for reparation of damages caused by natural persons through contamination and/or depletion of water sources as well as breakage of water supply systems.

Water supply enterprises and owners of water supply systems directly operating them are obliged to:

- observe technological conditions that correspond to standard drinking water requirements;
- ensure standards of continuous drinking water supply to satisfy the immediate requirements of population as well as food industry and medical organizations;
- use equipment, materials and chemical agents the safety of which is confirmed by certificates of conformance following the established procedure;
- keep records of consumer drinking water;
- not allow use of drinking water for industrial needs of enterprises where technological processes do not require use of drinking water provided that this directly impairs drinking water supply to population;
- organize control over drinking water quality in accordance with and based on checked laboratory or standardized methods and timely inform consumers about deterioration of drinking water quality;
- timely inform local authorities, specially appointed state executive bodies in the area of natural resources and environment protection, bodies of state sanitary control in case of ca-

tastrophes and other emergency situations effecting condition of water supply sources and systems as well as non-conformity of drinking water quality to the effective sanitary standards and regulations;

- admit freely representatives of state sanitary-epidemiological control bodies and bodies for regulation of use and protection of water for inspection of water supply objects and facilities;
- observe standards for economic and other activities established for sanitary protection zones and drinking water supply systems;
- not allow for violation of rights of other water consumers;
- not allow for damaging the environment;
- allocate funds for routine and capital repairs and maintenance of water supply systems;
- provide for protection of water sources from contamination, extinction and depletion and protection of water supply systems from damage.

Water supplying enterprises and owners of drinking water supply systems directly running them may bear other liabilities in accordance with legislation of Republic of Tajikistan.

Article 26. Rights and obligation of drinking water consumers

Relations between consumer and water supplier are contract-based.

Water consumers have a right:

- for providing them with drinking water that corresponds to the standards of quality and norms of water consumption from centralized and non-centralized drinking water supply systems;
- to require control over quality of drinking water supplied by centralized and non-centralized systems;
- to timely receive comprehensive information about the quality of drinking water and possible inconstancy of water supply following the procedure established by legislation of Republic of Tajikistan;

- to initiate carrying out sanitary-epidemiological and public environmental expertise following the established procedure and submit its results to the corresponding state bodies;
- to require reparation of damages caused to them as a result of supplying drinking water that is not conforming to the established standards.

Natural persons have a first-priority right for drinking water supply from centralized and non-centralized water supply systems in conformity with quality standards and water consumption standards.

Drinking water consumers are obliged to:

- observe sanitary and other norms and regulation in the domain of water supply as well as requirements stipulated for in the present Law;
- not allow for pollution, contamination and depletion of water sources as well as damaging of water supply systems;
- effectively and efficiently use drinking water for domestic and production purposes;
- not allow for leakage of water from valves and water pipelines;
- make timely payments for water in accordance with the established rates;
- inform local authorities, state bodies for sanitary control, bodies for environment protection, water supplying bodies in timely manner about intentions and actions of natural persons and legal entities that may result in pollution and/or contamination of water supply sources;
- inform water supplying organizations about unsatisfactory state of the said systems.

Article 27. Information on the issues of water supply

Information about drinking water quality is provided to applicant free of charge. All drinking water consumers are provided with information monthly through mass media.

In case of non-conformance of drinking water quality to the established standards that may result in threatening human health, the owners of water supply systems, water supplying enterprises and

bodies in charge of control over the quality of drinking water and its conformity to standards must inform drinking water consumers about time-frame for elimination of these discrepancies as well as of measures (additional measures for water treatment) or places and time of provision of drinking water that corresponds to the standards.

It is the obligation of water supply enterprises and bodies to inform consumers about irregular drinking water supply through mass media or any other means.

In accordance with legislation organization and control over timely provision of information about drinking water quality and its irregular supply to consumers is the responsibility of local authorities.

Chapter 3. Final provision in the domain of water supply

Article 28. Liability for violation of the present Law

Natural persons and legal entities independent of the form of ownership and subordination are held responsible for violation of requirements of the present Law in accordance with legislation of Republic of Tajikistan.

Article 29. On consummation of the present Law

The present Law is consummated after its official promulgation.

President
of the Republic of Tajikistan

Normative and legal basis of water supply and sanitation in the rural area

Basic laws of the Republic of Tajikistan

- Constitution of the Republic of Tajikistan (November 6 1994)
- Law of the Republic of Tajikistan «On conservation of nature» dated December 27 1993 (VVS RT 1994, #2, article 36)
- Water Code of the Republic of Tajikistan dated November 29 2000 (AMO RT 2000, #11, article)
- Land Code of the Republic of Tajikistan dated December 13 1996, 2004 in new edition (AMO RT 2004, #3, article 55)
- Law of the Republic of Tajikistan «On local authorities» dated May 17 2004 (AMO RT 2004, #5, article 339)
- Law of the Republic of Tajikistan «On self-governance bodies in settlements and villages» dated August 5 2009 #549
- Law of the Republic of Tajikistan «On association of water users» dated November 21 2006 (AMO RT 2006, #12, article 474)
- Law of the Republic of Tajikistan «On self-governance bodies in settlements and villages» dated August 5 2009
- Law of the Republic of Tajikistan «On privatization of public domain in the Republic of Tajikistan» dated May 16 1997 (AMO RT 1997, #10, article 160)
- Law of the Republic of Tajikistan «On consumer cooperation in the Republic of Tajikistan» dated March 13 1992 (VVS RT 1992, #7 article 105)
- Law of the Republic of Tajikistan «On specially protected natural territories and objects» dated December 13 1996 (AMO RT 1996, #23, article 353)
- Law of the Republic of Tajikistan «On ecological expertise» dated April 22 2003 (AMO RT 2003, #4, article 150)

- Law of the Republic of Tajikistan «On energetic» dated April 29 2000 (AMO RT 2000, #11, article 510)
- Law of the Republic of Tajikistan «On production and secure use of pesticides and agrochemicals» dated April 22 2003 (AMO RT 2003 #4, article 131)
- Law of the Republic of Tajikistan «On tourism» dated August 3 1999 (AMO RT 1999, #9, article 228)
- Civil Code of the Republic of Tajikistan, part I and II dated June 30 and December 11 1999 (AMO RT 1999, #6, article 153 and 1999, #12, article 323)
- Administrative Code of the Republic of Tajikistan dated December 3 2008 (AMO RT 2008, #12 part 1, article 990)
- Criminal Code of the Republic of Tajikistan dated August 17 1998 (AMO RT 1998, #9, article 68)
- Annual laws of the Republic of Tajikistan «On the state budget»
- Law of the Republic of Tajikistan «On veterinary» dated December 8 2003 (AMO RT 2003, #12, article 701)
- Forestry Code of the Republic of Tajikistan dated June 24 1993(VVS RT 1993, #13, article 243)
- Law of the Republic of Tajikistan «On the subsoil» dated July 20 1994 (VVS RT 1994, #15-16, article 235)
- Housing Code of the Republic of Tajikistan dated December 12 1997 (AMO RT 1997, #23-24, article 337)
- Tax Code of the Republic of Tajikistan dated December 3 2004 (AMO RT 2004, # 12 part1, article 689)
- Law of the Republic of Tajikistan «On protection of consumer's rights» dated December 9 2004 (AMO RT 2004, #12 part 1 article 699)
- Law of the Republic of Tajikistan «On natural monopoly» dated March 5 2007 (AMO RT 2007, #3, article 168)
- Law of the Republic of Tajikistan «On architecture, town-building and construction activity» dated March 20 2008 (AMO RT 2008 # 3, article 193)
- Law of the Republic of Tajikistan «On dekhkan farms» dated May 19 2009 (AMO RT 2009, #5, article 333)

Decrees of the President of the Republic of Tajikistan

- «On reorganization of agricultural organizations and enterprises» dated 25.06.1996 #522
- «On validation of the concept on improvement of state management structure of the Republic of Tajikistan» dated 16.09.2008 #541
- «On measures to improve the administrative procedures related to implementation of the construction activities in the Republic of Tajikistan» dated 18.03.2009 #638

Resolutions of the Government of the Republic of Tajikistan

1. Resolution of the Government of the Republic of Tajikistan dated December 2 2006 # 514 «On validation of the Program to improve the provision of population of the Republic of Tajikistan with drinking water for 2008-2020»
2. Resolution of the Government of the Republic of Tajikistan dated May 12 1999 # 210 «On validation of regulation on calculation of the prime cost of production (works, services) at the enterprises and organizations of the Republic of Tajikistan»
3. Resolution of the Government of the Republic of Tajikistan dated February 4 2002 #39 «On validation of regulation on demarcation of authorities of the specially authorized state bodies to regulate the use and protection of waters»
4. Resolution of the Government of the Republic of Tajikistan dated April 30 2002 # 193 «On procedure to maintain the State water cadastre of the Republic of Tajikistan»
5. Resolution of the Government of the Republic of Tajikistan dated August 31 2002 # 349 «On the procedure to encourage the water user, executing the effective events on rational use and protection of waters»
6. Resolution of the Government of the Republic of Tajikistan dated December 3 2002 # 485 «On validation of the procedure to register and issue the permission for the special use of water»

7. Resolution of the Government of the Republic of Tajikistan dated December 28 2006 #127 «On validation of regulations on local bodies of architecture and town planning»
8. Resolution of the Government of the Republic of Tajikistan dated December 28 2006 # 596 «On the Ministry of land reclamation and water resources of the Republic of Tajikistan»
9. Resolution of the Government of the Republic of Tajikistan dated July 28 2009 #451 «On making amendments into some Resolutions of the Government of the Republic of Tajikistan» (MLRWR structure)
10. Resolution of the Government of the Republic of Tajikistan dated July 31 2001 #357 «On State Unitary Enterprise "Public Utilities»
11. Resolution of the Government of the Republic of Tajikistan dated June 6 2005 #209 «On measures to implement the Law of the Republic of Tajikistan «On protection of consumer rights»». Annex # 9 «Rules to provide the public services»

**Documents of management, use
and protection of water resources**

1. Resolution of the Government of the Republic of Tajikistan dated 1.12.2001 # 551 «On validation of the Concept on rational use and protection of water resources of the Republic of Tajikistan»
2. Resolution of the Government of the Republic of Tajikistan dated 3.05.2006 # 191 «On National action plan to protect the environment»
3. Resolution of the Government of the Republic of Tajikistan dated 30.05.2002 # 209 «On approval of the Poverty Reduction Strategy Paper»
4. Resolution of the Government of the Republic of Tajikistan dated 1.08.2004 # 86 «On the program of economic development of the Republic of Tajikistan up to the end of 2015»
5. UN Declaration «Millennium Development Goals» (MDG)
6. Resolution of the Majlisi Namoyandagon Majlici Oli of the Republic of Tajikistan dated June 28 2007 # 704 «On validation of National Development Strategy of the Republic of Tajikistan up to the end of 2015»

7. Investments into sustainable development: «Needs assessment to achieve the Millennium Development Goals», UNDP in Tajikistan, May 2005
8. Resolution of the Inter-parliamentary Assembly of the member states of CIS dated November 24 2001 #18-10 «On model law «On drinking water and water supply»

**List of key technological normative documents
for construction of water supply objects
in Republic of Tajikistan**

№	Code	Name
1	MKS CHT 11-01-2005 Instead of SNiP 1.02.01-85; 11-01-95	Structure and procedure for developing, coordinating and approval of design documents for construction of plants, buildings and facilities.
2	GOST 21.001-93	System of project documentation for construction (SPDC). General provisions.
3	GOST 21.002-81	SPDC. Control over standards of project documentation
4	GOST 21.101-97	SPDC. Key requirements to project and working documentation
5	GOST 21.110-95	SPDC. Guidance for carrying out specifications for equipment, products and materials
6	GOST 21.112-87	SPDC. Carrying and lifting equipment. Pictorial symbols
7	GOST 21.205-93	SPDC. Pictorial symbols for indicating elements of sanitary engineering systems
8	GOST 21.206-93	SPDC. Pictorial symbols for pipelines
9	GOST 21.302-96	SPDC. Pictorial symbols for geological engineering survey documentation
10	GOST 21.501-93	SPDC. Regulations for making architectural and construction drawings
11	GOST 21.601-79	SPDC. Water pipelines and sewage. Working drawings
12	GOST 21.604-82	SPDC. Water supply and sewerage. External networks. Working drawings
13	GOST 21.613-88	SPDC. Power equipment. Working drawings

14	SNiP 11-02-96	Engineering survey for construction purposes. Key provisions.
15	SNiP 11-04-2003	Instructions on procedure for development, coordination of assessment and approval of town-planning documentation
16	SNiP 1.06.04-85	Regulations on chief engineer (chief architect) of the project
17	MKS CHT 11-06-2006	Regulations on field supervision over erection of building and facilities
18	SP 11-101-95	Procedure for development, coordination, approval and structure of substantiating investments in erection of plants, buildings and facilities.
19	SP 11-104-97	Geodesic engineering surveys for construction purposes
20	SP 11-105-97	Geological engineering surveys for construction purposes
21	SP 11-108-98	Surveys of water supply sources for subsurface water
22	RDS 11-201-95	Regulations of procedure of carrying out state assessment of construction projects
23	SNiP 3.01.03-84	Land measuring for construction
24	MKS CHT 12-01-2006	Acceptance of finished objects for operation. Key provisions.
25	SNiP 12-01-2004	Organizations of construction
26	SNiP 12-03-2001	Work safety in construction. Part 1. General requirements.
27	SNiP 12-04-2002	Work safety in construction. Part 2. Building production.
28	VSN 58-88(p)	Regulations on organization and carrying out reconstruction, repairs and maintenance of buildings, objects of municipal and socio-cultural use. Design standards.
29	VSN 61-89(p)	Regulations on operation of municipal water supply and sewerage systems and facilities

30		Regulations on carrying out planned and preventive repairs at water supply and sewerage facilities
31		Instruction on preparedness for and work of household use water supply systems in emergencies
32	MSN 2.01-01-96	Safety of structures. General provisions.
33	MSN 2.01-02-96	Safety of bearing structures and foundations
34	SN 528-80	List of units physical quantity to be used in construction
35	MKS CHT 21-01-2006	Fire safety of buildings and facilities
36	SNiP 2.04.02-84	Water supply. External networks and facilities.
37	SNiP 2.04.03-85	Sewerage. External networks and facilities.
38	SniP 3.05.04-85	External networks and water supply and sewerage facilities
39	GOST 2761-84	Sources of centralized household water use. Hygienic, technical requirements and selection rules.
40	GOST 2874-82	Drinking water. Hygienic requirements and quality control
41	SanPiN 2.1.4.004-07	Drinking water. Hygienic requirements to water quality in centralized water supply systems. Quality control
42	SanPiN 2.1.4.005-07	Requirements to water quality in centralized water supply systems. Sanitary protection of sources.
43	SanPiN 2.1.5.006-07	Sanitary protection zones around water supply sources and household water use water pipes
44	Government of RT	Regulations on land allocation for natural persons and legal entities

45	Government of RT of 6.05.09 №282	Procedure for passing administrative procedures in connection to carrying out construction activities in Republic of Tajikistan
46	Ministry of housing and communal economy 1983	Regulations on use of municipal water supply and sewerage systems in towns and settlements of Republic of Tajikistan

Recommended

DRAFT PROPOSAL		
For carrying out design and survey works		
Customer: _____		
№	List of key data and requirements	Key data and requirements
1	Reason for design	
2	Project organizations	
3	Prime contractor	
4	Stages of design and project composition	
5	Base data about specific construction conditions: hydrogeology, sanitary assessment, topographic surveying, ZSO project, seismicity, subsidence, etc.	
6	Key specification of engineering and technological equipment (serial, imported), design solutions and materials for carrying and enveloped structures, building decoration	
7	Key technical and economical characteristics	
8	Requirements for introduction of new technical skills and up-to-date experience, indicators of efficiency of capital investments	

9	Time frame beginning and completion of the project	
10	Special design conditions	
11	Requirements for plot improvement	
12	Number of copies of technical documentation and reports	

Signed by:

The Customer:

The design organization:

Reporting calculation on cost value of supplied water (form 6v)

Approved by decreed of State Committee of RT
of 27.01.2004г. № 2

Submitted by enterprises and organizations
until the 10th of a month after reporting period
to 'HMK' SUE
Form 6-V (quarterly)

WATER SUPPLY

Organization _____

Branch (type of activity) _____

REPORTING CALCULATION ON COST VALUE OF SUPPLIED WATER

for _____ 200

Indicators	Line code	Actual conformance to the performance to the period of last year	Target from the beginning of the year	Actual from the beginning of the year
1	2	3	4	5
I. NATURAL EXPONENTS (thousands m³)				
Water lifted	01 00			
Water received off-site	01 10			
Water supplied to network	02 00			
Water losses	02 10			

1	2	3	4	5
Water sold - total	02 20			
Including:				
To population;	02 30			
To government-financed offices and organizations;	02 40			
To other consumers;	02 50			
Capacity of waterworks (thousands m ³ /day)	03 00			
II. TOTAL COST VALUE OF SUPPLIED WATER (somonis)				
Water supplied - total	04 00			
including:				
electricity;	04 10			
materials;	04 20			
depreciation;	04 30			
Repairs and maintenance or reserve				
Expenses for payment of all types of repairs;	04 40			
Including capital repairs or expenses reserve				
For payment of capital repairs;	04 41			
Payment of labor wages;	04 50			
Deductions for social purposes;	04 60			
Shop expenses;	04 70			
Payment for water received off-site	05 00			
Transportation of water - total	06 00			
including:				
electricity;	06 10			
depreciation;	06 20			
Repairs and maintenance or reserve				
Expenses for payment of all types of repairs;	06 30			

1	2	3	4	5
Including capital repairs or expenses reserve				
For payment of capital repairs;	06 31			
Payment of labor wages;	06 40			
Deductions for social purposes;	06 50			
Shop expenses;	06 60			
Carrying out emergency and rehabilitation works	07 00			
Maintenance and service of in-house networks	08 00			
Repairs fund	09 00			
Other direct expenses - total	10 00			
including:				
Deductions for property insurance and other expenses;	10 10			
General operating costs	11 00			
including:				
Upkeep of AUP;	11 10			
Targeted contribution for joint activities with 'HNK' SUE according to the agreement	11 20			
Total operating expenses	12 00			
(cr.0400+0500+0600+0700+0800+0900+1000+1100)				
Off-operating expenses	13 00			
TOTAL expenses for total cost	14 00			
(cr.1200+1300)				
Cost value of 1 m ³ of supplied water, somonis	14 10			
Effective rate for 1 m ³ of supplied water, somonis	14 20			
TOTAL INCOME				
Including:				
From population;	15 10			

1	2	3	4	5
From government-financed organizations;	15 20			
Other consumers;	15 30			

Director of enterprises _____

Chief accountant _____

Reporting calculation of cost value of waste water diversion (form 6 k)

Approved by decree of State Committee of RT
of 27.01.2004r. № 2

Submitted by enterprises and organizations
until the 10th of a month after reporting period
to 'HMK' SUE
Form 6-K (quarterly)

WATER DIVERSION

Organization _____
Branch (type of activity) _____

REPORTING CALCULATION
ON COST VALUE OF DIVERTED WATER
for _____ 200

Indicators	Line code	Actual conformance to the period of last year	Target from the beginning of the year	Actual from the beginning of the year
1	2	3	4	5
I. NATURAL EXPONENTS (thousands m³)				
Diverted waste water - total including:	01 00			
From population;	01 10			

1	2	3	4	5
From self-sustained organizations and enterprises;	01 20			
Capacity of sewage system (thousands m ³ /day)	02 00			
II. TOTAL COST VALUE OF DIVERTED WATER (somonis)				
Pumping and purification of waste water - total	03 00			
including:				
electricity;	03 10			
materials;	03 20			
depreciation;	03 30			
Repairs and maintenance or reserve				
Expenses for payment of all types of repairs;	03 40			
Including capital repairs or expenses reserve				
For payment of capital repairs;	03 41			
Payment of labor wages;	03 50			
Deductions for social purposes;	03 60			
Shop expenses;	03 70			
Transportation and recovery of waste water - total	04 00			
including:				
electricity;	04 10			
depreciation;	04 20			
Repairs and maintenance or reserve				
Expenses for payment of all types of repairs;	04 30			
Including capital repairs or expenses reserve				
For payment of capital repairs;	04 31			

1	2	3	4	5
Payment of labor wages;	04 40			
Deductions for social purposes;	04 50			
Shop expenses;	05 00			
Carrying out emergency and rehabilitation works	05 00			
Maintenance and service of in-house networks	06 00			
Repairs fund	07 00			
Other direct expenses - total including:	08 00			
Deductions for property insurance and other expenses;	08 10			
General operating costs including:	09 00			
Upkeep of AUP;	09 10			
Targeted contribution for joint activities with 'HNK' SUE according to the agreement	09 20			
Total expenses (cr.0300+0400+0500+0600+0700+0800+0900)	10 00			
Off-operating expenses	11 00			
TOTAL expenses for total cost (cr.1000+1100)	12 00			
Cost value of 1 m ³ of diverted waste water, somonis	13 00			
Effective rate for 1 m ³ of diverted waste water, somonis	14 00			
Cost value of 1 m ³ liquid domestic waste	15 00			
Effective rate for 1 m ³ liquid domestic waste	16 00			
TOTAL INCOME	17 00			
Including:				
From population;	17 10			

1	2	3	4	5
From government-financed organizations;	17 20			
From Self-sustained organizations, enterprises, and other organizations	17 30			

Director of enterprises _____

Chief accountant _____

4	Decree of the Council of Ministers of RT “On social protection of participants in military actions aimed at protection of constitutional order” of 29. 06.93	Person who participated in military actions for protection of constitution order in RT as part of military units (they have a right for benefits foreseen for participating of the Great Patriotic War)	100% discount	Republican budget
5	Law of RT «On tax bodies» of 1. 02.96	Employees of tax police	50% discount	article 116 of the Republican budget
6	Decree of the Cabinet of Ministers of RT “On benefits for persons working in education and science” of 13. 06. 1996	Persons working in the area of education, science, other employees of the system of personnel qualification and pedagogical publications	100% discount	article 5 of local budget
7	Law of RT «On protection of health of population» of 15. 05. 97	Employees of the field of health protection and pharmacutists (article 17 of the Law)	100% discount	article 17 of local budget
8	Decree of the Cabinet of Ministers of RT «On measures for improvement of custody of detainees in institutions of Correction Administration of MoI of RT	Institutions of Correction Administration of MoI of RT	50% discount	article 5 At the expense of institutions rendering such services through revision of prices and rates for products and services

9	Law of RT «On militia» of 02. 05. 1992	Privates and officers and members of their families living together with them (article 31 of the Law)	50% discount	Not identified
10	Law of RT «On status, guarantees for socials and legal protection of military personnel and members of their families» of 25. 06. 93	Military personnel except for conscripts as well as those discharged due to age, health or reduction and having over 20 calendar years of service, and their families living with them (article 31 of the Law)	56% discount	Not identified
11	Decree of the Cabinet of Ministers of RT “Issues of Committee on emergency situations and civil defense under the Council of Ministers of RT” of 18. 11. 94 r.	Military personnel of the Committee on emergency situations and civil defense under the CM of RT, military personnel of sub-units and their family members	50% discount	Not identified
12	Law of RT «On status of judges in RT» of 3. 11. 95r.	After 20 years of work as a judge (constitution, economic, district courts)	50% discount	Not identified
13	law «On prosecution bodies» of 11. 03.96r.	Employees of prosecutor’s office, investigators, members of their families living together with them (article 50 of the Law)	50% discount	Not identified
14	Customs Code of RT of 04.11.95.	Officers of customs bodies	50% discount	
15	Decree of the Council of Ministers of RT “On social protection of citizens suf-	Persons who have suffered from radiation sickness as a consequence of an accident at Chernobyl nuclear power plant as well as other persons whose disability is proved to	50% discount	article 5 of the local budget

	ferred as a result of Chernobyl catastrophe”	be connected with Chernobyl catastrophe, members of families those who perished as a result of Chernobyl catastrophe, from radiation sickness and perished persons with disabilities		
16	Law of RT «On social protection of persons handicapped from childhood» of 24. 12. 91 additions of 4. 11. 95	Persons with disabilities of the 1-2 category (article 52 of the Law)	50% discount	Article 19 of the Republic budget

List of References

1. Constitution of the Republic of Tajikistan
2. Water Code of the Republic of Tajikistan
3. “Strategy on the Development of Water Sector of Tajikistan” MLRWR RT, UNDP, ECFSAS, Dushanbe, 2006
4. National Development Strategy of the Republic of Tajikistan for the period of 2006-2015 in the sphere of “Water supply and sanitary”, Dushanbe, 2005
5. National programme “Clean Water and Sanitary of Tajikistan” Dushanbe, 2001
6. The Decree of the Interparliamentary Assembly on “Sample Law on drinking water and water supply” from November 24, 2001 №18-10.
7. GOST 30813-2002 International standart of water and its usage
8. Programme on improving the drinking water supply for the population fo Tajikistan for the period of 2008-2020, which is approved by the decree of the Government of Tajiksitan on December 2, 2006 №514
9. Report «Challenges and Reccomendations of Jamoat level on the drinking water supply in the rural areas of Tajikistan », February 2009, SDC, MLRWR RT, UNDP in Tajikistan
10. Report, «Challenges and Reccomendations of Inter-ministerial level on the drinking water supply in the rural areas of Tajikistan», June 2009, SDC, MLRWR RT, UNDP in Tajikistan
11. «Guidleine on the supervision of the quality of water», second edition, Geneve, 1994.
12. «Guidleine on the supervision of the quality of water», third edition, Geneve, 2004
13. On the order of the execution, registration, and provision of permission for the special usage of water, which was approved by the decree of the Government of Tajikistan from December 30 2002, №485

14. The situation of drinking water supply and sewage in Tajikistan and its advantages.. K.Nuraliev, M.Abdusamadov, R.B Latipov, Dushanbe 2008.
15. V.S. Osvodov, Rural water supply and irrigation, Moscow, 1960.
16. «Usage of water objects». V.I. Breynev, V.F Vorobyov
17. «Sanitary and technical equipments of rural buildings ». K.C.Orlov.
18. The Decree of the President of the Republic of Tajikistan «On the arrangements on improving administrative procedures on the realization of construction activities in Tajikistan » from March 18, 2009, №638.
19. The Decree of the Government of RT from May 6, 2009, №282 «On On the arrangements on improving administrative procedures on the construction activities in Tajikistan».
20. Normative legal documents of the Republic of Tajikistan, which are necessary for the activities of social partners on enhancing effective participation , Dushanbe 2006, MLRWR, UNDP
21. «Sectoral manual on the evaluation of price of the work and service in the organizations and institutions of communal service of RT». GUP KhMK, USIAD, URBAN Institute, Dushanbe, 2004
22. Document «On the norms of amortization discounts for the rehabilitation of economic funds» from October 22, 1990, №1072.
23. «Reccomendations on the content and service of water supply networks, Komsomol, Mastchoh Jamoat, Mastchoh District». UNDP Area Office in Khujand, 2003.
24. Normative legal documents which is brought in the chapter 5 of this guideline.