

**STATE INSTITUTION FOR DEVELOPMENT OF DRINKING
WATER SUPPLY AND WASTEWATER DISPOSAL
UNDER THE WATER RESOURCES SERVICE
OF THE MINISTRY OF WATER RESOURCES, AGRICULTURE AND PROCESSING
INDUSTRY
OF THE KYRGYZ REPUBLIC**



**Project Implementation Unit
CLIMATE RESILIENT WATER SERVICES PROJECT**

**Environmental and Social Management Plan (ESMP)
Rehabilitation of Water Supply Systems Bokonbaevo Subproject,
Ton Rayon of Issyk-Kul Oblast**

March 2024

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Abbreviations

AO	Ayil Okmotu
ACM	Asbestos-Containing Material
BOD	Biological Oxygen Demand
WB	World Bank
BOQ	Bills of Quantity
FUEL	Fuels and Lubricants
SIDDWSWD	State Institution for Development of Drinking Water Supply and Wastewater Disposal
KR	Kyrgyz Republic
PAP	Project Affected Persons
MWSE	Municipal Water Supply Enterprise
MWRAPI	Ministry of Water Resources, Agriculture and Processing Industry
MNRETS	Ministry of Natural Resources, Environment and Technical Supervision
GRM	Grievance Redress Mechanism
EIA	Environmental Impact Assessment
LSG	Local Self Governments
EP	Environmental Protection
RPF	Resettlement Policy Framework
PIU	Project Implementation Unit
RAP	Resettlement Action Plan
CRWSP	Climate Resilient Water Services Project
DED	Design and Estimates Documentation
ESMP	Environmental and Social Management Plan
ACMMP	Asbestos-Containing Materials Management Plan
ESMF	Environmental and Social Management Framework
DDPCSSSES	District Disease Prevention Centers and State Sanitary and Epidemiological Surveillance
SanPiN	Sanitary Rules and Regulations
WRS	Water Resources Service
PPE	Personal Protective Equipment
MEDIA	Mass Communication Media
SNiP	Construction Rules and Regulations
SES	Social and Environmental Standards
SEA/SH	Sexual Exploitation and Abuse/Sexual Harassment
SMW	Solid Municipal Waste
PDO	Project Development Objectives

Executive Summary

This Environmental and Social Management Plan (hereinafter - ESMP) for the Rehabilitation of Water Supply Systems of Bokonbaevo Subproject is developed in accordance with the Environmental and Social Management Framework (hereinafter - ESMF), elaborated under the Climate Resilient Water Services Project (hereinafter - CRWSP), financed by the International Development Association.

This ESMP includes procedures and mechanisms for ensuring the requirements of the social and environmental standards of the World Bank (hereinafter - WB), and the legislation of the Kyrgyz Republic in the field of environmental and social environment protection.

This ESMP provides with information about geographical coverage of the project, the current state of the water supply system, the state of environmental and social conditions. Information about the implementation of the project, location and adopted technical solution is also provided. The document contains information about decisions on rehabilitation of the water supply system with a description of the main types of construction works.

One of the ESMP key chapters is the environmental and social impacts of the project and appropriate mitigation measures. In this chapter the types and means of mitigating the project's adverse social and environmental impacts are described.

The types of environmental and social impacts during construction and operation are given in Section 6. This chapter describes the proposed actions and mitigation measures for each environmental and social parameter (soil, water resources, atmospheric air, waste generation, noise impacts, safety and health of workers and communities, etc.) with identification of responsible organizations and individuals.

Chapter 7 was developed to monitor the impact of construction works on the environment and to take appropriate measures, which specifies the parameters and methods of environmental monitoring.

This document describes the following information ~~about~~:

- the potential social and environmental impacts of the project;
- on the current legal framework regulating the protection and use of natural resources;
- public hearings for population in the implementation of the project;
- grievance redress mechanism.

The subproject will not finance activities with significant or irreversible environmental impacts.

The requirements specified in the ESMP are mandatory for compliance by contractors. The construction contractor shall have dedicated personnel responsible for the implementation of the ESMP during the construction and installation phase. Appropriate PIU specialists will monitor the implementation of mitigation measures and compliance with good practice prescribed by this document, and in case of detection of deficiencies, will notify contractors of the identified issues and require corrective actions to be taken.

ESMP activities will be included in bidding and contract documents, both within construction works and construction supervision.

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Отформатировано: без нумерации

отформатировано: английский (США)

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1. Introduction

The Climate Resilient Water Services Project (CRWSP) project development objectives (hereinafter - PDO) are to (i) improve access to water services in selected basins and (ii) improve institutional capacity for climate-resilient water supply and management services at local and national levels.

The project aims to improve - in selected river basins - the coverage, quality and efficiency of water supply, sanitation and irrigation services, as well as capacity building to improve integrated water resources management and the capacity of relevant service providers in the selected basins.

At the national level, the Project will improve the institutional capacity of water resources management in terms of climate resilience. Regarding the first part of the PDO, climate resilient water services are defined as water services that achieve coverage and meet quality standards despite possible climate risks (droughts, high temperatures and extreme heat, urban flooding and wastewater overflows, floods and mudflows).

Investments in infrastructure will also help reduce (a) environmental pollution in Lake Issyk-Kul; (b) public health risks associated with exposure to untreated wastewater in the event of climate change-induced flooding, and (c) the energy and greenhouse footprint of service provision. These investments will be designed to minimize greenhouse gas emissions by reducing energy consumption by (i) prioritizing gravity flow solutions for irrigation and drinking water supplies, (ii) improving pump efficiency for service delivery, (iii) reducing nitrous oxide emissions, methane and dioxide emissions carbon as well as biological oxygen demand (BOD) through adequate wastewater treatment and sanitation services and (iv) promoting water conservation through water accounting and on-farm activities. Consequently, this component, by its intensity, has an indirect benefit in terms of climate resilience.

The Environmental and Social Management Framework (ESMF) was prepared for the Project in accordance with the requirements of the WB Social and Environmental Standards. Each activity included in the project financing should comply with the environmental and social risks of the subproject and environmental legislation of the Kyrgyz Republic.

This ESMP outlines environmental impacts and social mitigation measures related to the rehabilitation of water supply in Bokonbaev Subproject. ESMP activities will be included in bidding and contract documents as integral part of both construction and technical supervision phases.

2. Legal and Regulatory Framework

The fundamental principles of managing natural resources and the environment in order to ensure favorable conditions for human life, defining responsibility and compensation for damaged caused, are laid down in the Constitution of the Kyrgyz Republic. Kyrgyzstan has developed a legal framework that ensures the ongoing management of natural resources and the environment and regulates the legal relationship between users of nature and the state.

Current legislation regulates the protection and use of all types of resources: land, water, air, biodiversity, mineral resources. Legislation provides procedures and mechanisms for their management, such as: basic norms and rules for resource use, including norms and rules for charging fees for environmental use and pollution, environmental monitoring, impact assessment, environmental standards, environmental expertise, environmental control, etc.

The main laws governing environmental management, environmental protection and the need to conduct Environmental Impact Assessment (EIA) in the Kyrgyz Republic include:

- (i) Law on Environmental Protection (1999);
- (ii) Law on Environmental Expertise (1999);
- (iii) Law on Water (1994);
- (iv) Law on Interstate Use of Water Bodies, Water Resources and Water Management Facilities in the Kyrgyz Republic;
- (v) Law on General Technical Regulation for Ensuring Environmental Safety in the Kyrgyz Republic (2009);
- (vi) Law of the Kyrgyz Republic Technical Regulation on Safety of Drinking Water (2011);
- (vii) Law on Waste of Production and Consumption (2001);
- (viii) Procedure for Production and Consumption Waste Management in the Kyrgyz Republic (Government Resolution No. 559 dated August 5, 2015);
- (ix) Procedure for Hazardous Waste Management in the Kyrgyz Republic (Government Resolution No. 885 sated December 28, 2015)
- (x) Regulations on the Procedure for Environmental Impact Assessment in the Kyrgyz Republic (Government Resolution No. 60 dated February 13, 2015);
- (xi) Regulations on the Procedure for State Environmental Expertise in the Kyrgyz Republic (Government Resolution No. 248 dated May 7, 2014);
- (xii) Other laws regulating the protection and use of natural resources.

When carrying out construction/rehabilitation works, the Contractor shall comply with all requirements of the Kyrgyz legislation, SNiP, SanPiN, and the requirements of the following ~~social and~~ environmental ~~and social~~ standards (hereinafter - **SESS**) of the World Bank. Otherwise, the PIU has the right to stop construction work until appropriate corrective action is taken and approved.

The project includes mitigation measures under the following World bank ~~social and~~ environmental ~~and social~~ standards:

- SESS 1:** Assessment and Management of Environmental and Social Risks and Impacts
- SESS 2:** Labor and Working Conditions
- SESS 3:** Resource Efficiency and Pollution Prevention and Management
- SESS 4:** Community Health and Safety
- SESS 5:** Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- SESS 6:** Biodiversity Conservation and Sustainable Management of Living Natural Resources
- SESS 8:** Cultural Heritage
- SESS 10:** Stakeholder Engagement and Information Disclosure

3. Project Area General Information

3.1. Ton Rayon of Issyk-Kul Oblast

Ton rayon was established in 1936 and is located in the southwestern part of the Issyk-Kul Basin. The district has an area of 7230 km² in the east, bordered by Zhety-Oguz Rayon, in the south-west by Naryn Oblast and in the north-west by Chuy Oblast.



Figure 1. Ton Rayon

3.2. Rural Settlement (Village) of Bokonbaev Environmental and social baseline information of Bokonbaev subproject

3.2.1. Geographical Location

The Bokonbaev Subproject includes one village, Bokonbaev. The village of Bokonbaev is the regional (district) center of Issyk-Kul oblast and the administrative center of the Kun-Chygysh ayil aimak. The village is located on the Balykchy-Karakol highway in the southern shore of Lake Issyk-Kul, at a distance of 90 kilometers from the city of Balykchy, 127 km from the regional (oblast) center of Karakol and 280 km from the city of Bishkek. The absolute height is 1809 meters above sea level.

The population of village is 13328 people living in 3106 households.

Socio-economic characteristics. The population of village is 13328 people living in 3106 households. This is 28% of the population of the Ton rayon. 99.9% of the population are Kyrgyz, Russians - 6 people (0.1%). Main population activities: livestock, farming, small business. The female, representing half of the village population, is mainly engaged in housekeeping.

Livestock includes:

- Amount of cattle includes: cattle – 9 935,
- Small cattle – 33 211,
- Horses – 5 473.

Labor resources

1.	Working population	7728	
2.	Non-working population	6365	
including			
3.	Retirees	2287	
4.	Children under 16 years old	3664	
5.	Disabled people	On general illness	272
		Since childhood	142
6.	Unemployed	2245	
7.	Registered in the unemployment registration service	103	
8.	Not registered in the unemployment registration service		

Source: Village passport

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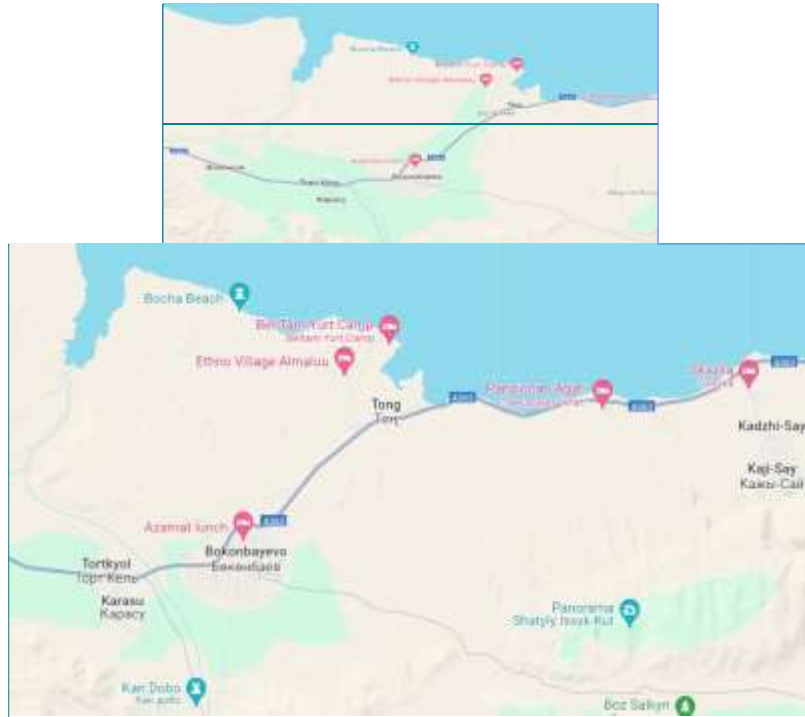


Figure 2. Bokonbaevo Location.

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Добавлено примечание ((MK8R7)): Done

3.2.2. Region Climatic Condition Characteristics

Annual precipitation is 200-300 mm in the valley, and 300-400 mm in the mountains; during the warm period, 25-50 mm in the valley and 100-150 mm in the mountains. The average height of snow cover in the valley reaches up to 10 cm. The highest wind speed is 45 m/sec, possible once in 20 years.

- Absolute minimum air temperature -25 °C
- Absolute maximum air temperature +30 °C
- Average temperature of the coldest days -7 °C
- Temperature of the coldest days -25 °C
- Average temperature of the coldest period -5 °C
- Average annual precipitation 497 mm
- Construction site seismicity 9 points
- Depth of zero isotherm 1,26 meter

3.2.3. Biodiversity

Vegetation. The vegetation of the region has an altitudinal zone, inherent in the entire vegetation cover of the Issyk-Kul region. But the rise of the mountains is uneven and the relief can be strongly or weakly dissected; accordingly, vegetation on the same altitudinal belt, but on different mountain ranges, may differ in floristic abundance and distribution boundaries. The growth of natural woody forms of vegetation is observed in subproject area. The site is located outside of Specially Protected Natural Areas.

Wildlife. The fauna is mainly represented by birds: pigeons, thrushes, crows and a small list of mammals: bats, rodents (house mouse, gray hamster, rats). Construction sites are located within the residential sector, which leads to the presence of synanthropic animal species.

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The site is located outside the distribution ranges of plant and animal species that are in danger of extinction. Construction, as an additional factor of impact on the biodiversity of species that have occupied their ecological niche in natural ecosystems transformed by humans, will not lead to a significant reduction in communities of background species.

3.2.3-3.2.4. Hydrological-Hydrogeological Condition Characteristics

According to the physical-geographical zoning of the Kyrgyz Republic, this territory is part of the Issyk-Kul oblast, Ton district and is located on the southern shore of the lake in the valley of the Ton and Korumdy Rivers, at absolute elevations of 1442-1700 meters.

the Issyk-Kul oblast, Ton district and is located on the southern shore of the lake in the valley of the Ton and Korumdy Rivers, at absolute elevations of 1442-1700 meters.

The hydrography of the study area is represented by the lower reaches of the Korumdy River, Korumdy River flowing north of the water intake site and the Ton River flowing along the water pipeline route.

Hydrologically, the Ton River is quite well studied. A gauging station is located 200 m downstream of the confluence of the Ton and Korumdy Rivers, where observations of the main hydrogeological characteristics were made. As a result of the surveys, a visual evaluation of mudflow discharges in the Ton River was carried out, calculations of maximum discharges by high water marks were made and it was concluded that this river is mudflow-prone.

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The Korumdy River is hydrologically unstudied. The rivers originate on the northern slope of Teskey-Ala-Too, at an altitude of over 4000 m, in the zone of "eternal snows" and glaciers and flow from south-east to north-west.

There are several glacial lakes in the river basin, the largest of which are Lake Karator, located in the upper reaches of the Korumdy River at an altitude of 3500 m and Lake Ton - near the Ton Pass at an altitude of 3600 m.

The area hydrography is represented by the Ton, Ak Say, Ak Terek and Tuura-Suu rivers. Groundwater lies at a depth of more than 10 meters. The territory, due to favorable natural conditions, is potentially not flooded by groundwater. По физико-географическому районированию Кыргызской Республики данная территория входит в состав Иссык-Кульской области. Тонского района и располагается на южном берегу озера в долине рек Тон и Корумды, на абсолютных отметках 1442-1700 м.

Гидрография района исследований представлена нижним течением р. Корумды, протекающей севернее площадки водозабора и р. Тон протекающей вдоль трассы водовода.

В гидрологическом отношении река Тон является достаточно хорошо изученной. В 200 м ниже впадения рек Тон и Корумды расположен гидропост, на котором были наблюдения за основными гидрогеологическими характеристиками. В результате обследований была произведена визуальная оценка селевых расходов в р. Тон, выполнены расчеты максимальных расходов по меткам высоких вод и сделан вывод о том, что данная река является селеопасной.

В гидрологическом отношении река Корумды является неизученной. Реки берут начало на северном склоне Тескей-Ала-Тоо, на высоте свыше 4000 м, в зоне "вечных снегов" и ледников и протекают с юго-востока на северо-запад.

В бассейне рек имеются несколько ледниковых озер, наиболее крупными из которых является озеро Каратор, расположенное в верховьях р. Корумды на высоте 3500 м и озеро Тон - у перевала Тон на высоте 3600 м.

Water intake site Площадка водозабора

The water intake site is regionally confined to the peripheral part of the shallow intermountain artesian basin of the Kyzyl-Uch tract. No hydrogeological studies with drilling of deep wells have been carried out

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Добавлено примечание ((MK10R9)): Added waterintake, reservoir information

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in the study area. The water intake site is located in the zone of pressure water discharge and shallow groundwater occurrence in the Korumdy river valley.

Groundwater feeding occurs mainly due to natural flow from the side of the Teskey-Ala-Too mountain range. Pressure water horizon discharge occurs through fractures in Quaternary sediments and manifests itself on the surface in the form of springs of ascending type.

rs through fractures in Quaternary sediments and manifests itself on the surface in the form of springs of ascending type.

Free-surface groundwater is confined to gravelly soils with sandy and dusty-clay filler. The unconfined aquifer is fed mainly in the upper reaches of the Korumdy River by natural inflow from the river.

The aquifers are discharged partly through springs into the upland bog and partly into the Korumdy River, which is a local drainage system. In the zone of pressure water discharge into Quaternary sediments a pressure and free-surface groundwater regime is formed.

During the survey period (September-October 2018), groundwater was opened at depths of 1.4m (pit-18)-0.4m (pit-26). Observations of the groundwater regime in the perennial section were not carried out directly at the site.

В региональном отношении участок водозабора приурочен к периферийной части мелкого межгорного артезианского бассейна урочища Кызыл Уч. Геологические исследования в бурением глубоких скважин на исследуемой территории не проводилось. Участок водозабора расположен в зоне выклинивания напорных вод и неглубокого залегания подземных вод долины р. Корумды.

Питание подземных вод происходит, в основном, за счет естественного потока со стороны горного кряжа Тескей-Ала-Тоо. Разгрузка напорного горизонта происходит по трещинам в четвертичные отложения и проявляется на поверхности в виде родников восходящего типа.

Безнапорные подземные воды приурочены к галечниковым грунтам с песчаными и пылеватоглинистым заполнителем. Питание безнапорного горизонта происходит в основном в верховьях р. Корумды за счет естественного притока из реки.

Разгрузка водоносных горизонтов происходит частично через родники в верховое болото и частично в р. Корумды, которая является местной дренаж. В зоне разгрузки напорных вод в четвертичные отложения формируются напорно-безнапорный режим подземных вод.

На период исследований (сентябрь-октябрь 2018г) подземные воды вскрыты на глубинах 1,4м (шурф-18) 0,4м (шурф 26). Непосредственно на участке наблюдения за режимом подземных вод в многолетнем разрезе не проводились.

Water intake site. Площадка резервуара

In the reservoir area, groundwater is confined to gravelly soils with sandy fill and is uncovered at depths of 0.7m. The investigated area is classified as potentially waterlogged by groundwater. Along the route of the water pipeline, groundwater is found at the crossings of the Korumdy and Ton Rivers at depths ranging from 0.5m to 1.3m.

By chemical composition groundwater is mainly hydrocarbonate-sulphate-chloride calcium-sodium-sodium-potassium-magnesium, moderately hard, fresh, non-corrosive to concrete of normal density on normal grades. На площади резервуаров подземные воды приурочены к галечниковым грунтам с песчаным заполнителем и вскрыты на глубинах 0,7м. Исследуемая территория относится к потенциально подтопленной подземными водами. По трассе водовода грунтовые воды встречаются в местах переходов через р. Корумды и р. Тон на глубинах от 0,5м до 1,3м.

По химическому составу подземные воды, в основном, гидрокарбонатно-сульфатно-хлоридные кальциево-натриево-кальциево-магниевые, умеренно жесткие, пресные, неагрессивные к бетону нормальной плотности на обычных марках.

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3.2.4. —

3.2.5. Terrain рельеф, geomorphology геоморфология Soil Condition

Geomorphologically, the territory is confined to the southern part of the Issyk-Kul Basin, on the piedmont plain of the northern slopes of the Teskey-Ala-Too Ridge, the Korumdy River and Ton River fan, as well as on the terraces of the Korumdy and Ton Rivers. The surface of the territory has a northward slope. В геоморфологическом отношении территория приурочена к южной части Иссык-Кульской котловины, на предгорном шлейфе северных склонов хребта Тескей-Ала-Тоо, конусов выноса р. Корумды и р. Тон, а также на террасах р. Корумды и р. Тон. Поверхность территории имеет уклон в северном направлении.

Water intake site Пункт забора воды

The water intake site is located on the I, II, III terraces of the Korumdy River (left bank) and, partially, on the Ton River mudflow fan. Участок водозабора расположен на I-й, II-й, III-й террасах р. Корумды (левобережье) и, частично, на селевом конусе выноса р. Тон. The site is bounded on the north by the Korumdy River, on the east by earth road, and on the west by mudflow fan on which gramineous plants are cultivated. On the south side of the site is closely approached by the rock massif of the Teskey-Ala-Too Ridge. Участок ограничен с севера р. Корумды, с востока — грунтовой дорогой, с запада — селевым конусом выноса, на котором культивируются злаки. С южной стороны к участку вплотную подступает скальный массив хребта Тескей-Ала-Тоо.

The surface of the site is swampy, there are "windows" (small areas on the surface of the swamp with open water surface), which are 2.0 m long, 1.0 m wide and up to 1.5 m deep. Поверхность участка заболочена, встречаются "окна" (небольшие участки на поверхности болота с открытой водной поверхностью), размером 2.0 м в длину, 1.0 м в ширину и до 1.5 м глубиной.

The site has a large number of ascending springs, which are common in the southern part of the site, at the base of the rock massif. The rock massif is highly fractured and, in some places, overlain by later sediments. Absolute elevations of the site vary from 1665 m to 1700 m. На участке большое количество родников восходящего типа, которые распространены в южной части участка, у основания скального массива. Скальный массив сильно трещиноватый, местами перекрыт более поздними отложениями. Абсолютные отметки участка изменяются от 1665 м до 1700 м.

Reservoir site Пункт резервуара

It is confined to the alluvial piedmont plain of the Teskey-Ala-Too Ridge and is located on the territory of the existing reservoirs, adjacent to it from the southern side.

The existing reservoir is a reinforced concrete ring (approximately 6 m wide and 2.7 m deep) that is covered with boulders and heavily grass-covered and overgrown with shrubs, buckthorn and willow. To the existing water intake there are 3 branches of 150 and 200 mm diameter steel pipes coming from different directions from the feeding drainage water pipelines collecting water (underground) and directing it to the existing water intake by slope. Приурочена к предгорному шлейфу хребта Тескей-Ала-Тоо и расположена на территории существующих резервуаров, примыкает к ней с южной стороны.

Существующий резервуар представляет собой железобетонные кольца (ширина предположительно около 6 м и глубиной около 2.7 м) которые обложены снаружи валунами и сильно задернованы и заросшие кустарниками, облепихи и ивы. К существующему водозабору подходит 3 ветви стальных труб диаметром 150 и 200 мм идущие с разных направлений с подпитывающих дренажных водоводов, собирающих воду (подземную) и по уклону направляющих к существующему водозабору. These drainage conduits (according to local residents) are asbestos cement and steel perforated pipes 150-200 mm in diameter, which are laid at a depth of 1.5, 2.0 and 2.5 m, similar to a drainage system, and covered from below and above with crushed stone and pebbles, which serve as a filter for the collected groundwater. Эти дренажные водоводы (по словам местных жителей) представляют собой асбест-цементные и стальные перфорированные трубы диаметром 150-200 мм, которые уложены на глубину 1.5, 2.0 и 2.5 м, по подобно дренажной

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системы, и обсыпаны снизу и сверху щебнем и галечниками, которые служат фильтром для обратных подземных вод. Between themselves drainage pipes are connected by reinforced concrete wells with diameter of 1.5-2.0 m, which are also perforated (the hole in the wells is about 10 cm in diameter, many wells are not covered from above with reinforced concrete lids, partially covered with soil, grassed. Между собой дренажные трубы соединены железобетонными колодцами диаметром 1.5-2.0 м, которые так же перфорированы (отверстие в колодцах примерно 10 см в диаметре, многие колодцы не накрыты сверху железобетонными перекрытиями, частично засыпана грунтом, задернована. Many wells do not reach the ground surface, they are covered and overgrown with sea buckthorn and reed bushes.

There are numerous water leaks from the existing water intake well, waterlogging occurs around the well, excess water flows in different directions.

The outlet pipes from the reinforced concrete intake cannot manage the high flow rate of the feeding drainage pipes.

— The surface of the site is flat, there is willow and sea buckthorn. Absolute surface elevations of the site vary from 1674 m to 1678 m. Многие колодцы не выходят на поверхность земли, засыпаны и заросли кустарниками облепихи и камыша.

— Из существующего колодца водозабора происходят многочисленные утечки воды, вокруг колодца происходит заболачивание местности, излишки воды уходят в разных направлениях.

— Выходящие трубы из железобетонного водозабора не справляются с большим дебитом подпитывающих дренажных труб.

Поверхность участка ровная, имеется ива и облепиха. Абсолютные отметки поверхности участка изменяются от 1674 м до 1678 м.

Water pipeline route Трасса водовода

During September through October 2018, engineering and geotechnical surveys were conducted along the route of the water pipeline and water intake. The surveys were conducted along the existing water pipeline route and existing water intakes. The first water intake "collecting" is located in the mountains of the gorge and the second one is 3 km from the village of Bokonbaevo village where water flows directly to Bokonbaevo village. В период сентября по октябрь 2018 года были произведены инженерно-геологические изыскания по трассе водовода и водозабора. Изыскания проводились вдоль существующей трассы водовода и существующих водозаборов. Первый водозабор «собирающий» находится в горах ущелья и второй в 3 км от с. Боконбаево из которого вода поступает непосредственно в село Боконбаево.

The current water pipeline and water intakes were originally constructed and put into operation in 1956, then in 1978 they were overhauled, pipes were partially replaced and repair works were carried out. Ныне действующий водовод и водозаборы были первоначально построены и запущены в эксплуатацию в 1956 году, затем в 1978 году был произведен их капитальный ремонт, частично заменены трубы произведены ремонтные работы.

There are water leaks on the existing water pipeline and collecting water intake at the moment, collecting drainage systems are in bad condition (wells are filled with earth, grassed, lids on collecting drainage wells are removed). В настоящий момент на существующем водоводе и собирающем водозаборе имеются утечки воды, водосборные дренажные системы приходят в негодность (колодцы засыпаны землей, задернованы, перекрытия на сборных дренажных колодцах сняты). In many places of the trench of the water pipeline, where the pipes are replaced during repair works, the diameters of water supply pipes are not observed, i.e. pipes of large diameter (d 400-300 mm) are welded to pipes of smaller diameter (d 150-200 mm), which accordingly causes pressure changes in the pipes and further contribute to the bursting of pipes, as the elevation difference from the collecting water intake to the distribution water intake is very large (approximately 250 meters), which contributes to the high water pressure in the existing water pipeline. Во многих местах траншея водовода, где заменены трубы во время ремонтных работ, не соблюдены диаметры водоснабжающих труб, т.е. трубы

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большого диаметра (d 400-300 мм) приварены к трубам меньшего диаметра (d 150-200 мм), что соответственно приводит к изменению давления в трубах и в дальнейшем способствует прорыву труб, так как перепад высот от собирающего водозабора к распределительному водозабору очень большой (приблизительно 250 метров). Что способствует большому напору воды в существующем водоводе. In view of this, the water pipeline has been repeatedly repaired. Ввиду этого на водопроводе не однократно производились ремонтные работы.

At the time of surveys on the existing water pipeline installed two tanks - flow breakers (metal containers with holes in the upper part of the tanks) from which excess water is discharged to prevent pipe bursting due to high water pressure. Approximate flow rate discharged from the tanks-flow breakers for the survey period is approximately 50-60 l/sec from one tank, totaling approximately 100-120 l/sec. На момент изысканий на существующем водоводе установлено два бака - гасителя (металлические емкости с отверстиями в верхней части баков) из которых сбрасывается излишки воды для предотвращения прорыва труб из-за высокого напорного давления воды. Примерный дебит сбрасываемый с баков - гасителей, на период изысканий, приблизительно 50-60 л/сек с одного бака, суммарно приблизительно 100-120 л/сек.

Water collection for water supply to the village of Bokonbaevo in gorge at the junction of the Ton and Korumdy rivers. Feeding of the water intake is carried out by intake structure due to collection of underground water by drainage systems (three drainages), which are perforated pipes (d 150-200 mm), covered with crushed stone and pebble soils for water filtration. A total of three lines of drainage water pipes have been laid to recharge the existing water intake. Two lines are laid from the mountain slope to the water intake, these drainage systems were laid at different times, according to local residents pipes of d 150-200 mm, at different depths presumably from 1.5 to 2.0 meters the third drainage line passes through the Korumdy River, where on the opposite bank of the river, on the mountainside collects underground groundwater to feed the reservoir. This line was constructed in 1998, at the time of the survey it was in good condition. The first and second drainage line is fed by underground water. There are numerous springs and groundwater discharges at the drinking water collection site. Сбор воды для водоснабжения с Боконбаево осуществляется путем каптажа за счет сбора подземной воды дренажными системами (три дренажа), представляющих собой перфорированные трубы (d 150-200 мм), которые обложены щебенчатыми и галечниковыми грунтами для фильтрации воды. Всего проложено три линии дренажных водоводов, идущих на подпитку существующего водозабора. Две линии проложены от склона горы до водозабора, эти дренажные системы были уложены в разное время, по словам местных жителей трубы d 150-200 мм, на разной глубине предположительно от 1.5 до 2.0 м третья дренажная линия проходит через р. Корумды, где на противоположном берегу реки на склоне гор собирает подземные, грунтовые воды для подпитки резервуара. Это линия была построена 1998 году, на период изысканий в хорошем состоянии. Первая и вторая дренажная линия подпитывается подземными водами. Существуют многочисленные источники и выщелачивание подземных вод на площадке сбора питьевой воды.

According to local residents, in 1974-1975 and 1980, very powerful mudflows came from the upper reaches of the gorge, which changed the topography of the area, changed the course of the Ton River and caused a huge number of boulders, which are currently lying on the surface of the described route of the existing water pipeline. По словам местных жителей, в 1974-1975 и 1980 годах в верховьях данного ущелья прошли сильные потоки очень большой мощности, которые изменили рельеф местности, изменили русло реки Тон и нанесли огромное количество валунов, которые в данный момент лежат на поверхности описываемой трассе существующего водовода.

The water pipeline route passes through difficult engineering and geological conditions, crosses streams, swampy terrain, the Ton and Korumdy Rivers, mudflow dams and areas covered with huge boulders up to 5 - 6 meters in diameter. Трасса водовода проходит в сложных инженерно-геологических условиях, пересекает на своем пути ручьи, заболоченную местность, реки Тон и

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Корумды, железобетонные дамбы и площадки, заваленные огромными валунами диаметром до 5–6 метров.

It is required to involve powerful construction equipment for trenching due to the large number of boulders. When crossing rivers, streams and dams, it is necessary to protect pipes with large diameter cases; it is necessary to provide for pipe waterproofing. Необходимо привлечь мощную строительную технику для рытья траншей, ввиду большого количества валунов. При переходе через реки, ручьи и дамбы необходимо защищать трубы футлярами большого диаметра; необходимо предусмотреть гидроизоляцию труб.

The water pipeline construction above ground is not desirable due to the possibility of mudflows and rockfalls. Строительство водовода над землей нежелательно из-за возможности прохождения селей и камнепадов.

The section of the water pipeline route is confined to the Ton River mudflow fan- 1-st terraces above floodplain of the Korumdy River and the Ton River. Lower on the water pipeline route, the section passes through the intermountain basin. Участок трассы водовода приурочен к селевому конусу вышес р. Тон. 1-м подпойменным террасам р. Корумды и р. Тон. Ниже по трассе водовода участок пролегает по межгорной впадине.

Along the Ton River and also in the places where the water pipeline route crosses the Ton River, modern engineering and geological processes - coastal erosion - are observed. Но р. Тон в также в местах перехода трассы водовода через р. Тон наблюдаются современные инженерно-геологические процессы - береговая эрозия.

Downstream of the designed water pipeline route passes along a well-compacted earth road with a reinforced concrete flume on the eastern side and a ditch on the western side. There are fruit and ornamental trees along the road, and crop land on both sides of the road. Absolute elevations of the designed water pipeline section vary from 1442 m to 1675 m. Ниже от трассы проектируемого водовода проходит вдоль хорошо укатанной грунтовой дороги, с восточной стороны от которой протягивается железобетонный лоток, а с западной — арык. Вдоль дороги растут фруктовые и декоративные деревья, с обеих сторон дороги простираются посевные земли. Абсолютные отметки участка проектируемого водовода изменяются от 1442 м до 1675 м.

3.2.6. Geological Condition

3.2.5. Characteristics

The geological and lithological structure of the study area is represented by alluvial-proluvial upper Quaternary coarse sediments (pebbles), covered on the surface by hard loams and is directly indicated by the results of pit excavation. The exploration depth is 4.0 meters and is sufficient to solve construction design problems.

According to mining data, the surface consists of loams, solid subsidence thickness does not exceed 0.6–0.7 meters. The above-described deposits are underlain by coarse soils, represented by rounded pebbles with sand filler up to 20–25%, with a content of boulders up to 15%, the size of the boulders reaches up to 450 mm in diameter (at a distance of 20 m in the neighboring territory there is a pit opened for a septic tank with a depth of up to 4 m). The explored depth of pebble soils is 3.3 meters. The clastic material is unweathered and consists of igneous metamorphic rocks.

The planned construction site is located in simple engineering and geological conditions. The foundations will be based on pebble soils with high bearing capacity and good water permeability. Groundwater lies at a depth of more than 10 meters. The geological environment will not change during the construction and operation of buildings.

3.2.7. Seismicity Сейсмичность

According to the " Seismic zoning map of the territory of the Kyrgyz Republic", the initial seismicity of the work area is 8 points. Based on the specific opened geological and lithological section at the water intake site it is recommended to take it equal to 9 points. Category of soils on seismic properties

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I-II, mainly III, is determined from the ground surface. Seismicity of the reservoir site and the water pipeline route is recommended to be 8 points. Soil category by seismic properties - I, determined from the ground surface. В соответствии с «Картой сейсмического районирования территории Кыргызской Республики» тектоническая сейсмичность района работ составляет 8 баллов. Исходя из конкретного вскрытого геологического литологического разреза на площадке водозабора рекомендуется принять равной 9 баллов. Категория грунтов по сейсмическим свойствам - I-II, преимущественно - III и определена от поверхности земли. Сейсмичность площадки резервуаров и трассы водовода рекомендуется принять равной 8 баллов. Категория грунтов по сейсмическим свойствам - I-II, определена от поверхности земли.

3.2.8. Mudflows and floods Сели и наводнения

Erosion processes are observed at the water intake site - erosion of the Ton river valley slopes. На участке расположения площадки водозабора наблюдаются эрозионные процессы - размыв склонов долины р. Тон. In addition, according to long-term observations, the Ton River is mudflow-prone. It is recommended to implement measures to protect the site from mudflows. Кроме того, р. Тон по многолетним наблюдениям является селеопасной. Рекомендуется осуществить мероприятия по защите участка от селевых потоков.

Considering that aquifers are unprotected by covering deposits and groundwater is widely seeped (discharged) to the surface, cultivation of agricultural crops and grazing of livestock, as well as accumulation of domestic wastewater on the territory is strictly prohibited. Учитывая незащищенность водоносных горизонтов покровными отложениями повсеместно выщелачивание подземных вод на поверхность, категорически запрещается возделывание сельскохозяйственных культур и выпас скота, а также скопление хозяйственно-бытовых стоков на территории.

The reservoir and water pipeline site is located in simple engineering-geological conditions. Sheet wash and rill erosion of clay soils occur in areas of poorly developed sod cover, or where it has been destroyed due to human activity. Площадка резервуара и водовода расположен в простых инженерно-геологических условиях. Поверхностная смыл и струйчатая эрозия глинистых грунтов проходит в местах слабого развития дернового покроя, или там, где он уничтожен в связи с деятельностью человека.

Mud floods are also possible along the Ton and Kurumdy river beds during heavy rainfall. In the design of the crossing of the main water pipeline through the sai it is necessary to provide measures to protect the crossing from mudflow, e.g. strengthening the sides of the sai from erosion by flood waters. На руслах р. Тон и Курумды, во время ливневых осадков также возможно прохождение селевых наводнений. При проектировании перехода магистрального водовода через сая необходимо предусмотреть мероприятия по защите перехода от селевого потока, например, укрепление бортов сая от размыва наводковыми водами.

3.2.6-3.2.9. Archaeological and Cultural Monuments Characteristics.

No archaeological sites or finds have been identified in the area of interest based on new archaeological surveys. A survey was conducted during the design phase of the project. The survey did not reveal any known or buried cultural resources. Since then, no new archaeological surveys, have been conducted that revealed any such resources.

If artifacts, other signs of material culture, and fossils are found, it is necessary to stop all construction work and report the findings to the local government, the department of the Ministry of Culture, Information, Sports and Youth Policy responsible for the protection of cultural heritage and specialists to archaeologists. Subproject will not affect known cultural and national heritage sites.

3.3. Existing Water Supply System

Currently, the village of Bokonbaev has a centralized water supply system, built in 1954. The source of water supply is the depression springs of the right bank tributary of the Ton River. The existing water intake is located 7 km from the village to the north.

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- Добавлено примечание ((LNGHA13)): When was t...
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- Добавлено примечание ((MK16R13)): Done
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- Добавлено примечание ((MK18R17)): Added
- Добавлено примечание ((LNGHA19)): To enhance
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The water pipeline from the water intake is made of steel pipes of different diameters, built in the last century. 90% of the population is supplied with water 24 hours a day, and 10% of the population 12 hours a day. There are water standpipes in the village.

Water consumers in the villages are the population and livestock. Irrigation of household plots is carried out through a ditch system, which is filled from the Korumdu River, which flows in close proximity to the village of Bokonbaevo. The service life of the existing system is about 50 years.

~~Currently, construction works of the first phase are in progress, financed from the republican State budget. Rehabilitation of the water intake site (fencing of the sanitary zone and construction of two reservoirs with a chlorination room and a guard house) and a water pipeline for the village of Bokonbaevo is in progress. The rehabilitation of the water supply system in the village of Bokonbaevo is carried out taking into account the fact that the number of water consumers in the future by 2043 will be 25 000 people. The design and estimate documentation is prepared by Ak Bashat Design Institute in 2018, which received a positive conclusion of the state expertise in 2019.~~

The water supply scheme for the village "Bokonbaevo" is proposed to be gravity fed. Water from existing water intake structures in the form of chambers for descending springs is supplied to the designed reservoirs, where it is processed using chlorination, then clean water is supplied through a gravity pipeline to the distribution network of the village to consumers. According to the adopted water supply scheme, the project provides for the following structure of structures:

Source of water supply: descending springs.

Water intake structures: a capture chamber located on the existing water intake site after their rehabilitation with the replacement of the installation of new chambers in the amount of 22.

Escape chambers: designed, made of prefabricated reinforced concrete rings D=1.5 m, located at least 5 m from the existing ones. Filters from different soils are placed in front of the capture chamber.

On site water supply networks: designed, made of electric welded steel in accordance with GOST 10704-91* with highly reinforced anti corrosion insulation and polyethylene in accordance with GOST 18599-2001*.

Connection to electrical networks: from the existing 160 10/0.4 kVA package transformer substation, located at the water intake site. The substation was installed in 20? and in x condition. A watchman's house and a wooden restroom for service personnel are provided at the water intake site.

Sanitary protection zone of the water intake site: along the perimeter of the high security zone (the first zone of the ZSO), a sectional fence made of chain link mesh on a metal frame is installed along metal support posts with an approximate length of 2500 running meters.

Disinfection system: provided with calcium hypochlorite in the chlorination room building. The dose of chlorine for underground sources is 1 mg/l.

Chlorination room: designed, container type room, located on the existing water intake site. Serves for disinfection of clean water supplied to consumers. Mixing and further contact of water with chlorine occurs in storage tanks and water pipelines.

Storage tanks (2 units of designed clean water tanks with a capacity of 1400 m³ each, reinforced concrete, located on the tank site. They serve to equalize the unevenness of water consumption in the system by hour of the day, provide consumers with water during the hours of maximum water withdrawal, as well as store emergency and fire water supplies.

Water pipeline from the water intake site to consumers: designed, made of steel pipes in accordance with GOST 10704 91 with a length of 6.5 m. *Distribution network with structures:* the existing water supply network is not provided for in the technical specifications.

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Добавлено примечание ((LNGHA23)): To improve the clarity of the plan for updating the system, begin by outlining the specific steps or phases involved in the update process. Detail who is responsible for each phase, including any teams, departments, or external contractors. Additionally, provide a timeline for each phase, including start and end dates, and describe the objectives and expected outcomes for each phase. This structured approach will help ensure that all stakeholders have a clear understanding of the plan for updating the system.

Добавлено примечание ((MK24R23)): No information

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Добавлено примечание ((LNGHA25)): The design is almost 5 years old and the state expertise conclusion is 4 years. Any plans for updating per the national regulations/requirements. Please include a clarification.

Добавлено примечание ((MK26R25)): Construction work under government financing began in 2019-2020. State expertise conclusion is valid for the entire construction period.

Добавлено примечание ((LNGHA27R25)): Thanks for the clarification. Please reflect it in the text.

Добавлено примечание ((MK28R25)): Reflected

Добавлено примечание ((LNGHA29)): Please provide information on the current status of water quality, including data from the last two seasons. Also, describe the condition of the intake structure and the nature of the rehabilitation planned under government financing.

Добавлено примечание ((LNGHA30)): Provide information on the status/ condition of the substation and whether it needs upgrading/ rehabilitation. Also clarify if the connection to the electricity substation is part of this subproject.

Добавлено примечание ((MK31R30)): Done

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Добавлено примечание ((LNGHA32)): Please clarify whether this subproject will address the responsibility for water quality and the associated risks within the bank-financed distribution network. It is vital to delineate the entity accountable for the water quality distributed through the Bank's investment and understand the potential risks related to water quality.

Добавлено примечание ((LNGHA33)): Please clarify the meaning of this statement and explain the technical specifications being referred to, ensuring that the statement is fully understood.

Добавлено примечание ((MK34R33)): rephrased

4. Scope of Works and Identification of Related Environmental and Social Impact Assessment

4.1. Scope of the Works financed by WB (PIU)

The project implementation cycle is categorized into planning and design, construction and operation phases. The main activities to be carried out during these phases have been highlighted in the following sections.

Planning and design phase

This is the first phase of the project. During this phase all the different aspects of the project will be defined including land surveying, site selection, technical feasibility, conducting environmental and social screening; and preparation of technical drawings, ESMP. This also includes preparation of design and estimate documentation and environmental protection section; and obtaining a positive state conclusion on them.

Construction phase

The main activities to be undertaken during this phase of the project are land clearing and preparatory works, construction - earth works, pipe lying, testing and disinfection, concrete works, other works - complementary buildings and materials, ancillary works, including access roads, contractor working site, workers facilities, waste disposal site, concrete casting, water supply and sanitation during construction; electromechanical.

The CRWSP involves rehabilitation of the existing distribution network and the construction of a distribution network at the new construction site.

Total scope of work including new construction:

- 1) Laying of polyethylene pipes in the distribution network 0110x6.6mm and 063x5.8mm 10 MPa in an amount of 55,961 m;
- 2) Reinforced concrete wells KS (manhole rings) 15x0.9 in quantity - 683 pcs.;
- 3) Fire hydrants - 199 pcs.;
- 4) Manifolds for household connections - 681 pcs.;
- 5) Additional works: cutting of asphalt pavements with a width of 1.2 m - 2351 m;
- 6) Dismantling and restoration of asphalt pavements - 4701 m²;
- 7) Rehabilitation of unpaved roads (leveling) - 3200 m².

Excavation works:

- 1) Excavation (trenching) by excavator 0.5 m³ = 353,550 m³;
- 2) Soft foundation and loose soil loading = 75,550 m³;
- 3) Backfilling = 277,000 m³;
- 4) Area leveling (reclamation) = 347,000 m².

Preliminary duration of construction and rehabilitation works is prepared for 18 months, the defects liability period is 12 months after commissioning of the facility.

Operation phase

After completion of construction work, operational activities will be carried out by the Municipal Water Supply Enterprise. Within the project, training sessions will be conducted for operating organization. Repair and maintenance of the system will be undertaken by Municipal Water Supply Enterprise.

The subproject will not finance activities with significant or irreversible environmental impacts.

Scope of

4.2. Works financed from the State budget (Department of Capital Construction)

Currently, construction works of the first phase are in progress, financed from the State budget (Department of Capital Construction). Rehabilitation of the water intake site (fencing of the sanitary zone and construction of two reservoirs with a chlorination room and a guard house) and a water pipeline for the village of Bokonbaev is in progress. The rehabilitation of the water supply system in the village of Bokonbaev is carried out considering the number of water consumers in the future by 2043 will be 25 000

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Добавлено примечание ((MK36R35)): Done

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Добавлено примечание ((MK42R41)): Described in ...

Добавлено примечание ((ODM43)): Add informatid ...

Добавлено примечание ((MK44R43)): Duration of ...

Добавлено примечание ((LNGHA45R43)): Please ...

Добавлено примечание ((MK46R43)): Reflected

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Добавлено примечание ((LNGHA47)): To improve f ...

Добавлено примечание ((MK48R47)): Done

people. The design and estimate documentation are prepared by Ak-Bashat Design Institute in 2018, which received a positive conclusion of the state expertise in 2019. Construction work under government financing began in 2019-2020. State expertise conclusion is valid for the entire construction period.

The water supply scheme for the village "Bokonbaev" is proposed to be gravity-fed. Water from existing water intake structures in the form of chambers for descending springs is supplied to the designed reservoirs, where it is processed using chlorination, then clean water is supplied through a gravity pipeline to the distribution network of the village to consumers. According to the adopted water supply scheme, the project provides for the following structures:

Source of water supply: descending springs.

Water intake structures: a capture chamber located on the existing water intake site after their rehabilitation with the replacement of the installation of new chambers in the amount of 22.

During survey the water intake, it was found that the territory is fenced by approximately 90% (mesh fencing). According to the Head of the ayil okmotu, there are 22 captage-type water intake structures on the territory, 50% of them have been replaced. A container-type chlorination building with unfinished finishing and without equipment was also installed.

Escape/Capture chambers: designed, made of prefabricated reinforced concrete rings D=1.5 m, located at least 5 m from the existing ones. Filters from different soils are placed in front of the capture chamber.

On-site water supply networks: designed, made of electric-welded steel in accordance with GOST 10704-91* with highly reinforced anti-corrosion insulation and polyethylene in accordance with GOST 18599-2001*

Connection to electrical networks: from the existing 160-10/0.4 kVA package transformer substation, located at the water intake site. There is a new installed transformer substation on the territory of the water intake. A watchman's house and a wooden restroom for service personnel are provided at the water intake site.

Sanitary protection zone of the water intake site: along the perimeter of the high-security zone (the first zone of the HSZZSO), a sectional fence made of chain-link mesh on a metal frame is installed along metal support posts with an approximate length of 2500 running meters.

Disinfection system: provided with calcium hypochlorite in the chlorination room-building. The chlorine dose for groundwater sources is 1 mg/l.

Chlorination room/building: designed, container-type room, located on the existing water intake site. Serves for disinfection of clean water supplied to consumers. Mixing and further contact of water with chlorine occurs in storage tanks/reservoirs and water pipelines.

There is no information about the liability of contractors involved in the construction of a water intake. In the new project of the PIU, after completion of construction, the municipal enterprise, which is responsible for operation together with the sanitary and epidemiological station of the district assumes responsibility (but the PIU will first check the water quality for compliance with GOST / state standard)

Storage/Reservoir tanks (2 units of designed clean water tanks with a capacity of 1400 m³ each, reinforced concrete, located on the tanks/reservoirs site. They serve to equalize the unevenness of water consumption in the system by hour of the day, provide consumers with water during the hours of maximum water withdrawal/intake, as well as store emergency and fire water supplies.

Water pipeline from the water intake site to consumers: designed, made of steel pipes in accordance with GOST 10704-91 with a length of 6.5 m.

Distribution network with structures: design and construction work/work of the distribution network are not included in the project financed from the State budget (Department of Capital Construction).

Добавлено примечание ([LNGHA49]): Please provide information on the current status of water quality, including data from the last two seasons. Also, describe the condition of the intake structure and the nature of the rehabilitation planned under government financing.

Добавлено примечание ([MK50R49]): Currently, it is not possible to provide status of water quality. During survey the water intake, it was found that the territory is fenced by approximately 90% (mesh fencing). According to the Head of the ayil okmotu, there are 22 captage-type water intake structures on the territory, 50% of them have been replaced. A container-type chlorination building with unfinished finishing and without equipment was also installed.

Добавлено примечание ([LNGHA51R49]): Please add this clarification to the text.

Добавлено примечание ([MK52R49]): Added

Добавлено примечание ([LNGHA53]): Provide information on the status/ condition of the substation and whether it needs upgrading/ rehabilitation. Also clarify if the connection to the electricity substation is part of this subproject.

Добавлено примечание ([MK54R53]): Done

Добавлено примечание ([LNGHA55]): Please clarify whether this subproject will address the responsibility for water quality and the associated risks within the bank-financed distribution network. It is vital to delineate the entity accountable for the water quality distributed through the Bank's investment and understand the potential risks related to water quality.

Добавлено примечание ([MK56R55]): There is no information about the liability of contractors involved in the construction of a water intake. In the new project of the PIU, after completion of construction, the municipal enterprise, which is responsible for operation together with the sanitary and epidemiological station of the district assumes responsibility (but the PIU will first check the water quality for compliance with GOST / state standard)

Добавлено примечание ([LNGHA57R55]): Please reflect this in the text.

Добавлено примечание ([MK58R55]): Reflected

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Figure 3. Water supply system divided into PIU and Department of Capital Construction zones

4.3. Environmental and Social Impact Assessment

The subproject's activities were also reviewed for compliance with the World Bank criteria and exclusion from the project. The planned work in Bokonbaev subproject is not included in the exclusion list. At the design stage, the PIU conducted Environmental and Social screening (Annex 1, 2) in the Bokonbaev subproject and was assigned the category "moderate".

4.2.

4.4. Environmental Risks

4.4.1 During the Construction phase

Potential environmental issues associated with small/medium scale activities for local communities will be limited and include temporary inconvenience from construction activities and may include: (i) increased pollution due to construction debris, (ii) generation of dust, noise and vibration due to movement and operation of construction machinery and vehicles, (iii) associated risks due to inappropriate disposal of construction debris, and asbestos-containing material, or small operational or accidental spills of fuel and lubricants from construction machinery on soil and water resources, (iv) inadequate restoration of construction sites upon completion of the works.

Such potential environmental impact is quickly identified, insignificant in magnitude and minimal in terms of impact, and can be effectively avoided, minimized or mitigated by including specific measures in construction contracts for implementation by the eContractors, with strong supervision and control by the PIU.

The use of construction materials that are hazardous to human health (e.g. asbestos containing materials) is prohibited. Asbestos containing wastes will be collected, removed, and ultimately disposed of in a special protective manner, in accordance with established hazardous materials disposal standards in municipal solid waste landfill.

An Environmental and Social Management Plan (Section 6 Table 4) and an Environmental Monitoring Plan (Section 7) was developed to mitigate impacts during the construction period. The costs of environmental impact mitigation and monitoring works will be envisaged during the development of design and estimate documentation (DED) and will be ~~taken into account~~ considered when submitting tender documents. During implementation of activities, the PIU will have overall responsibility for supervision to ensure that the measures specified in the ESMP are properly implemented. The PIU in cooperation with the Bokonbaev local authorities and the Regional Office of the Ministry of Natural Resources and Technical Supervision in Issyk-Kul oblast shall carry out environmental monitoring of activities during the construction and operation stages.

The subproject will not support activities that have an impact on natural habitats or protected areas. Also, no funding will be provided for activities that may cause substantial loss or degradation of significant areas of natural habitat.

4.4.2 During the operation phase

Some negative impacts are also possible during operation phase: water system leaks, water discharges when flushing water lines; exposure is possible for people working directly with chlorine; groundwater pollution in the absence of effective wastewater treatment and discharge of untreated water into the area; possible increase of water tariff.

5.

5.1.4.5. Social Risks

- Potential occupational injuries to ~~local communities and~~ workers;
- Potential community safety issues due to construction works on the village streets;
- Issues with provision of access to the households during the construction works;
- Unauthorized access of the local communities to the operational sites;
- Community dissatisfaction with the failure of existing communications;
- Low involvement of women in the project;

Добавлено примечание ((LNGHA59)): Introduce the subheading on the subproject E&S screening and risk rating/categorization (ESRC). Describe the screening process against the subproject exclusion list and the E&S screening checklist. Include a copy of the screening checklist in the Annexes.

Добавлено примечание ((MK60R59)): Done

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Добавлено примечание ((LNGHA61)): Clarify how the intake water quality will be ensured during network operation phase. Also provide information on the role and responsibility for this.

Добавлено примечание ((MK62R61)): As far as the PIU knows, a chlorination room is designed in the main building, where disinfection will take place and periodically the operating organization, together with the sanitary and epidemiological station will take water samples to check the quality in accordance with GOST / state standard.

Добавлено примечание ((LNGHA63R61)): Please include the risks and the mitigation measures under the operation phase. of the ESMP

Добавлено примечание ((MK64R61)): Included

Добавлено примечание ((LNGHA65)): Please introduce a subheading for the operation phase and briefly describe potential risks

Добавлено примечание ((MK66R65)): Done

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- Problems with household connections of the poor (low-income population);
- Possible social resistance against tariff increases;
- Limited capacity of local governments;
- Actual delays in project implementation;
- Change in behavior and water consumption practices.

Measures to mitigate these risks, institutional responsibility for implementing the measures, and monitoring are described in the Social Environment section.

No major social risks are expected in this subproject. The activities planned under the subproject will have mostly positive social impacts.

An integral part of the strategy is informing and taking into account the views of communities and people affected by the project. Thus, one of the main tools for preventing social risks/conflicts is the Grievance Redress Mechanism, through which information is exchanged and community opinions are taken into account at all stages of the project. Below is complete information regarding GRM.

In addition to information provision, the PIU will cooperate with ayyl okmotu and local community organizations involved in dispute resolution, such as AO-controlled Aksakal courts.

5.1.1.4.5.1. Involuntary resettlement.

Land acquisition and resettlement issues fall under the WB SES5 “Land Acquisition, Restrictions on Land Use and Involuntary Resettlement”. With regard to involuntary resettlement, no major impacts have been identified that may result in land acquisition, restrictions on economic activities, or physical resettlement.

A resettlement framework document, the Resettlement Policy Framework (RPF), has been developed for the project. The framework document was made publicly available to the target community, through public hearings and published on www.tunuksuu.kg. The RPF guides the preparation of Resettlement Action Plans (RAPs) during project implementation.

In case of land acquisition, resettlement or damage to community assets, a Resettlement Action Plan will be prepared in accordance with the RPF.

According to design decisions, during construction, private lands will not be affected, all distribution networks, water pipelines will be laid by municipal participants.

6.5. Proposed mitigation measures

All work shall be performed only after the necessary permits and approvals are obtained.

During construction phase the following risk management and mitigation measures are required,

Organizational Measures. Before starting construction work, local construction supervision and environmental protection inspections and the public shall be informed about the forthcoming activities through mass media and/or at sites open for public access (including works sites) by disclosing site-specific ESMPs for each subproject. All activities required for the implementation of environmental and social safeguards and monitoring shall be planned and budgeted in the work plans of the Employer, contractors and subcontractors. All work shall be performed in a safe and disciplined manner that minimizes impact on the public and the environment.

Air pollution control and dust minimization. During construction activities, waste should be stored in a controlled area and sprayed with water to reduce dust generation. Open burning of household and construction waste on the sites are not allowed. When transporting any dust-forming materials to the rehabilitation site, the materials must be sprayed or covered. Dust generation at the rehabilitation site in dry seasons can be minimized by watering the ground, while in hot seasons, it is necessary to spray the roads along the excavated trenches at least twice-four times a day.

Prevention of soil and water contamination. Maintenance and refueling of construction machinery and equipment shall be performed at service centers located at the maximum possible distance from the work site. If this work is performed on-site, provide an impervious surface for refueling and have a supply of absorbents available in case of an accidental spill. Further, it is necessary to conduct constant inspection of machinery and equipment in order to identify and eliminate malfunctions and maintain mechanical equipment, tools and devices in order to prevent soil and water pollution. Car washing should be prohibited near surface water bodies. Used motor vehicle oil, fuel and lubricant supplies and other

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hazardous substances should also be stored on an impervious surface, preferably under cover, and should be protected from fire. Where workers' accommodation is located in construction camps, septic tanks or pit latrines shall be provided, and their operation shall not allow direct discharge of water into surface water bodies or degradation of sanitary conditions.

Waste Management and Recycling. Waste should be minimized, segregated and handled appropriately, where possible. Open air burning and illegal dumping of any waste is strictly prohibited. Non-hazardous waste, as well as waste containing asbestos, will be disposed of at designated landfills. Excess excavated soil will be returned to officially designated areas. The contractor must obtain permission from the local authorities to remove the waste. Construction equipment and machinery should be maintained at specialized service centers that also accept worn tires, filters and waste oil. Containers with lids shall be installed for the collection of household waste. The issue of regular household waste removal should be coordinated with local authorities.

Disposal of dismantled asphalt. During the construction process, the Head of the ayil okmotu will provide a landfill for the disposal of dismantled asphalt; if there is no landfill, the asphalt will be transferred to an asphalt production organization for recycling

Asbestos-containing materials management. According to the inspection results of the Bokonbaev subproject, it was revealed that the distribution network is made of asbestos-cement and steel pipes. During water system rehabilitation, the existing asbestos cement pipes will not be removed; it will be possible to leave existing pipelines in the ground as much as possible. The new water lines will be located parallel to the existing water mains. In cases where existing asbestos-cement pipelines are dismantled, waste asbestos-containing materials will be collected, removed and completely disposed of using special protective measures in accordance with hazardous waste management standards.

The contractor shall develop an Asbestos-containing Waste Management Plan (an example plan is given in Annex 42). Sanitary norms and rules No. 2.2.3.013-03 "Work with asbestos and asbestos-containing materials" must be observed when working with asbestos-containing waste. Asbestos-containing materials must be disposed of in authorized municipal landfills.

Tree Felling/Cutting Down. During construction of water supply networks, trees and shrubs may be cut down. No mass cutting is envisaged under this subproject, only single cases. Before starting construction work, inventory of green areas along the route of the planned water pipeline should be carried out to identify those to be cut down. The cutting of trees on the municipality's balance sheet will take place only in the presence of appropriate permits, ~~taking into account~~ considering compensation measures ~~of tree cut green spaces~~ in the ratio of 1:3. In the case of private tree felling, a RAP will be prepared in accordance with the WB ~~SESS~~5. If trees of several owners are felled, one RAP can be prepared for a subproject.

Child labor. Child labor and forced labor shall not be used in the subproject. The contractor shall make a commitment against the use of child and forced labor, implement mitigation measures against gender-based violence, and the PIU staff responsible for supervising the contractor will monitor and report on the absence of forced labor.

Safety and health of workers during construction works. Construction workers must wear personal protective equipment (hereinafter referred to as PPE): safety helmets, safety glasses, safety harnesses (belts) and safety shoes. Before starting construction work, workers shall be trained/instructed on the labor safety rules at the project sites. Further, it is necessary to conduct constant inspection of machinery and equipment in order to identify and eliminate malfunctions, to observe equipment repair periods, to train and instruct workers who perform maintenance of mechanical equipment, tools and devices in safe methods and means of work. It is prohibited to: give defective or untested tools for work, as well as leave unattended mechanical tools connected to the electrical network or to compressed air hoses; pull out and twist cables and air hoses; cables and hoses must not intersect with wire ropes, electrical cables; it is prohibited to hold rotating elements of mechanized tools. The applicable national regulations on the safe operation of cranes/earthmoving machines and welding work must be strictly observed.

Procedures in case of accidental finds. Before starting construction work, the PIU shall instruct the contractor's working personnel in case cultural and historical objects are found. If a "chance find" is discovered during excavation, the contractor shall immediately stop all physical work on the site and

Добавлено примечание ((AA67)): Section should also discuss disposal of dismantled asphalt from the streets?

Добавлено примечание ((MK68R67)): Added

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notify PIU. The PIU should forward the information to the Ministry of Culture, Information, Sports and Youth Policy of the Kyrgyz Republic and suspend the work until written notification is received from the Ministry with permission to restart the work.

Decision on the matter of disturbance to local communities. Local communities should be notified of the timing and scope of the planned works. Working hours should be strictly limited to daytime (08:00 to 18:00) on weekdays and the area should be sprayed with water to prevent dust generation. Temporary storage of construction materials and debris shall be done in the subproject area, parking of construction machinery shall not block or restrict access of local residents to their property and public areas or, if unavoidable, alternative temporary access routes shall be organized. Waste and material storage areas, work camps and access roads shall be identified by the Project works and clearly marked. All project employees shall comply with the Code of Conduct (Annex 34).

During operation phase the following risk management and mitigation measures are required.

- Ensure the use of environmentally acceptable fuel
- Routine maintenance (12 months warranty period for the system)
- Ensure that all assurances and certificates are obtained in accordance with fire safety and air emissions/concentrations monitoring requirements
- Ensuring proper and efficient use of water resources and preventing water losses and leakages and excessive water consumption - installation, operation and periodic inspection of water meters at water consumers
- In the event of a leak, the operating organization must shut off the water supply, determine the site and nature of the accident, and then carry out repair work
- Component 3 includes the purchase of equipment for Operation and Maintenance, as well as training on how to operate the system
- When flushing water pipelines water will be discharged into irrigation canals.
- The contractor will develop instructions for maintaining the water supply system, including instructions for working with chlorine (or Calcium Hypochlorite or any other chemicals)
- Under the project, training and information work will be carried out
- Proper control over the operation and efficiency of local treatment facilities
- Regular monitoring of the efficiency of treatment facilities
- Obtain permission for water use in accordance with the requirements of Kyrgyz legislation
- Timely cleaning of the outdoor toilet, which will be used when necessary

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Table 4. Environmental and Social Management Impact Mitigation Plan.

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Environmental and Social Elements	Impacts and Risks	Proposed Environmental Impact Mitigation Measures	Cost of Mitigation Measures	Institutional Responsibility for the Implementation of Measures
Construction Phase-Period				
Physical Environment				
Noise and Vibration	<p>During construction works the sources of non-permanent noise and vibration are operating mechanisms (engines) of construction machinery and equipment.</p> <p>There may also be temporary increases in noise and vibration levels along material supply routes.</p>	<ul style="list-style-type: none"> No noise protection measures are foreseen, the machinery and equipment will be equipped with silencers. Use of vibration devices that comply with standards, as well as vibration and noise protection devices. Machinery and equipment will only work from 8 a.m. to 6 p.m., no work will be done at night or weekends. During work, the engine covers of generators, air compressors and other drive mechanisms should be closed; the equipment should be located as far away from residential premises as possible. Avoid the use of worn-out vehicles or heavy machinery producing significant noise and air emissions. 	<p>Criteria /specifications to be incorporated into bidding and contract documents.</p> <p>It is not considered as a separate cost item</p>	<ol style="list-style-type: none"> The Contractor shall be responsible for implementation of environmental and social mitigation measures. PIU Technical Supervision Engineer / Technical Supervision Company will provide overall supervision of the construction site, including monitoring of potential environmental and social risks. PIU Environmental Specialist, Social Specialist and Infrastructure Engineer are responsible for overall supervision. State control will be carried out by the authorized state body
Soil Pollution	<p>Soil and water contamination during leak detection; water contamination with oil products from the use of machinery</p> <p>During the construction period, impacts are accompanied by the</p>	<ul style="list-style-type: none"> Ensure proper selection of areas for construction site location, where <u>solid waste</u> <u>SDW</u> collection and safe toilets (possibly bio-toilets) should be provided. Timely cleaning of territories from oil products in case of oil spills on the soil No washing of machinery and equipment in the construction area Fueling of machinery will be carried out at specialized fuel stations 	<p>It is not considered as a separate cost item</p>	<ol style="list-style-type: none"> The Contractor shall be responsible for implementation of environmental and social mitigation measures. PIU Technical Supervision Engineer / Technical Supervision Company will provide overall supervision of the construction site, including

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	<p>following type of work: -earthworks: soil excavation, embankment, backfilling, levelling; -operation of construction machinery. -waste formation.</p>	<ul style="list-style-type: none"> • Vehicles with a defective fuel system exceeding the exhaust gas toxicity standards and hydraulic systems shall not be permitted. • Use of vehicles that have passed technical inspection • No storage and stockpiling of fuel and lubricants and construction materials is allowed to prevent pollution from entering the river • Daily inspections of machinery and equipment for oil leaks 		<p>monitoring of potential environmental and social risks.</p> <ol style="list-style-type: none"> 3) PIU Environmental Specialist, Social Specialist and Infrastructure Engineer are responsible for overall supervision. 4) State control will be carried out by the authorized state body
		<ul style="list-style-type: none"> • Topsoil Removal Improvement of the territory in accordance with the project. 	It is considered as a separate cost item in the EP BoQ.	
Atmospheric Air (dust pollution)	<p>Dusting during reconstruction work will be minor and temporary. Air pollutant emissions are expected: - from motor vehicles (machinery) -during road levelling -when using electrical welding</p>	<ul style="list-style-type: none"> • Dust suppression measures and appropriate household activities such as spraying water to prevent dust and use of curtains, and construction site fencing. • Use of masks, gloves and protective clothing. • Limit vehicle speeds and select appropriate transportation routes to minimize exposure to dust-sensitive receptors. • Equip vehicles transporting bulk materials with removable tents. Cement is delivered to construction sites only in pre-packed hermetically sealed bags. • The above machinery is ordered only for the period of specific operations and is not permanently located at the construction site. • Vehicles with a defective fuel system exceeding the exhaust gas toxicity standards shall not be permitted. • It is prohibited to burn construction and household waste on the work site. • Keep the surrounding area clean and free from construction debris to minimize dust and contamination. • Organization of proper storage and transportation of flammable and hazardous materials (gas cylinders, bituminous materials, paints, solvents, glass and 	<p>Water irrigation of unpaved roads (wet dust suppression of on-site roads and sites) is considered as a separate cost item in the EP BoQ.</p>	<ol style="list-style-type: none"> 1) The Contractor shall be responsible for implementation of environmental and social mitigation measures. 2) PIU Technical Supervision Engineer / Technical Supervision Company will provide overall supervision of the construction site, including monitoring of potential environmental and social risks. 3) PIU Environmental Specialist, Social Specialist and Infrastructure Engineer are responsible for overall supervision. 4) State control will be carried out by the authorized state body

		rockwool). It should be noted that the construction of facilities will not take place in parallel, but in stages and sequentially, from one facility to another.		
	Use of calcium hypochlorite (chlorine)	<ul style="list-style-type: none"> • During construction work, chlorine is not expected to be handled, so exposure is avoided. During operational period, it is possible for people working directly with chlorine (in the working area) to be exposed. Resolution of the Kyrgyz Republic dated 29.10.2019 No. 576 "On Approval of the Safety Rules for Handling Strong Poisonous Substances in the Kyrgyz Republic" 	It is not considered as a separate cost item	
Water resources	<p>Groundwater contamination, soil flooding</p> <p><i>Under this subproject, works are planned only for laying distribution networks and part of the water line. No water supply sources will be affected.</i></p>	<ul style="list-style-type: none"> • Do not allow spills/leaks of petroleum products into the ground, in case of inadvertent spills remove contaminated soil and transport to appropriate locations. • Timely cleaning of areas from oil products in order to prevent their entry into local water courses and groundwater together with atmospheric precipitation. • Vehicles with a defective fuel system exceeding the exhaust gas toxicity standards and hydraulic systems shall not be permitted. • Cleaning of outdoor toilet pit from liquid waste and its removal to the municipal treatment facilities according to the Removal Act • No excavation near groundwater sources. • Work areas with machinery, concrete mixers and fuel tanks should be located outside of water protection zones. • Installation of special pallets and other prefabricated equipment in places of possible leaks and spills of fuel and lubricants, technical solutions • Disinfection of pit toilet and filling with soil in accordance with building regulations. 	It is not considered as a separate cost item	
Construction waste	Contamination of adjacent territories, soil and water resources	<ul style="list-style-type: none"> • Sign an agreement with the local municipality for disposal of construction and household waste at the municipal landfill before the works start. • Determination of methods of waste collection and 	It is not considered as a separate cost item	

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		<p>disposal prior to the commencement of work, as well as locations for the main types of waste generated during demolition and construction work</p> <ul style="list-style-type: none"> • Mineral waste from construction works and waste generated during dismantling of facilities shall be separated from organic, liquid and chemical wastes at the work site, after which they shall be stored at a proper site • All records and documentation of waste removal and disposal should be properly maintained as evidence of proper waste management practices on site as designed • Recycling of inert material waste (except asbestos) is allowed whenever possible • Construction waste shall be removed at the contractor's expense to the storage sites. 		
	<u>Dismantled asphalt</u>	<ul style="list-style-type: none"> • <u>During the construction process, the Head of the aiyl okmotu will provide a landfill for the disposal of dismantled asphalt; if there is no landfill, the asphalt will be transferred to an asphalt production organization for recycling</u> 	<u>It is considered as a separate cost item in the EP BoQ.</u>	
Asbestos-containing materials	Pollution of the adjacent territory and negative impact on the human body	<ul style="list-style-type: none"> • <u>Some construction debris may contain asbestos. The Contractor shall train its employees to assess the presence of asbestos-containing materials and determine procedures for safe disposal of asbestos using appropriate protective equipment, storage in sealed containers. Safety requirements for asbestos management are specified in Annex 24.</u> • Asbestos should be handled and disposed of by qualified and experienced specialists using proper protection (masks, gloves and overalls). • Before removal (if removal is necessary), the asbestos will be treated with a wetting agent to minimize the generation of asbestos dust. • Asbestos-containing materials shall not be subjected to breaking or cutting. • Workers should avoid crushing/destruction of 	It is considered as a separate cost item in the EP BoQ.	<ol style="list-style-type: none"> 1) The contractor shall develop an Asbestos-containing Waste Management Plan 2) PIU Technical Supervision Engineer / Technical Supervision Company will provide overall supervision of the construction site, including monitoring of potential environmental and social risks. 3) PIU Environmental Specialist, Social Specialist and Infrastructure Engineer are responsible for overall supervision. 4) State control will be carried out by the authorized state body

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		<p>asbestos waste and dispose of it in an organized manner at construction sites with subsequent removal to designated areas or burial.</p> <ul style="list-style-type: none"> • If asbestos material is to be temporarily stored, its waste must be securely isolated in closed containers and labeled as hazardous material. • Hazardous waste transportation to landfills is carried out by specially equipped own transport of the enterprise or specialized transport companies. • Transportation of unpackaged asbestos in open bodies of vehicles is not allowed. • ACM should be safely disposed of at a local hazardous waste landfill, if available, or at a municipal landfill after prior arrangements have been made with the landfill operator for safe storage. 		
Vehicles	Local air pollution, terrain; Hazard when moving around in a populated area; Hazard when maneuvering	<ul style="list-style-type: none"> • Authorization of technically serviceable vehicles for operation • Observance of speed limits • Vehicle complete set is: medical kit; fire extinguisher; emergency stop sign or flashing red light; wheel stops (at least two). • Sound the horn when reversing • Open parking areas shall have markings identifying parking spaces and driveways. 	It is not considered as a separate cost item	<ol style="list-style-type: none"> 1) The Contractor shall be responsible for implementation of environmental and social mitigation measures. 2) PIU Technical Supervision Engineer / Technical Supervision Company will provide overall supervision of the construction site, including monitoring of potential environmental and social risks. 3) PIU Environmental Specialist, Social Specialist and Infrastructure Engineer are responsible for overall supervision. 4) State control will be carried out by the authorized state body
	Littering of adjacent property; Restriction of free movement of pedestrians and vehicles	<ul style="list-style-type: none"> • Temporary storage of construction materials and debris shall be organized in the subproject area; • Parking of construction machinery and shall not obstruct or restrict local residents' access to their property and common areas. Arrange alternative temporary access routes if necessary. 	It is not considered as a separate cost item	
Organization of the construction site and dismantling of the site after completion of construction works	An adverse impact may occur if the Contractor fails to ensure that the area is cleared of construction debris, production waste and reclamation of disturbed land during the	Ensure removal of all waste and construction debris from the facilities for disposal at a municipal authorized construction waste landfill in accordance with the Waste Disposal Contract. Ensure removal of materials, dismantled equipment, etc.	It is not considered as a separate cost item	

	construction process			
Biological Environment				
Flora and fauna	Tree and shrub cutting when laying the pipeline routes	<p>Tree and shrub cutting, crown pruning should be carried out strictly along pipe laying routes only after obtaining permits from territorial environmental authorities in coordination with the local governments, taking into account compensatory planting.</p> <p>If it is necessary to cut down municipal trees, the contracting organization should request a cutting permit from Aiyl Okmotu. Then, AO with the approval of the local environmental authorities will obtain a permit to cut down the specified number of trees.</p> <p>When the water pipeline route is completed, a tree inventory should be conducted with the municipality to identify potential trees to be cut for compensation.</p> <p>In case of cutting down municipal trees, compensation in the form of seedlings will be made (the compensation amount is stipulated in the bill of quantities (BoQ)). For one tree felled, 3 will be planted. The contractor shall plant saplings in the places determined by the aiyl okmotu (AO), drawing up a planting act.</p> <p>In the case of private tree felling, a RAP will be prepared in accordance with the SES5. If trees of several owners are felled, one RAP can be prepared for a subproject.</p>	It is considered as a separate cost item in the EP BoQ.	<ol style="list-style-type: none"> 1) The Contractor shall be responsible for implementation of environmental and social mitigation measures. 2) PIU Technical Supervision Engineer / Technical Supervision Company will provide overall supervision of the construction site, including monitoring of potential environmental and social risks. 3) PIU Environmental Specialist, Social Specialist and Infrastructure Engineer are responsible for overall supervision. 4) State control will be carried out by the authorized state body
Social Environment				
Occupational safety of workers, health and safety, fire safety	Occupational injuries	<ul style="list-style-type: none"> • Compliance with approved occupational health and safety instructions. • All works have to be carried out using safety methods and disciplines to minimize the negative impact on the public and the environment. • Personal protective equipment must comply with safety standards (mandatory use of protective helmets, masks, if necessary, belts and shoes). • The contractor shall provide workers with: <ul style="list-style-type: none"> - drinking water during working hours; - mobile bio toilets when the crew works with more 	It is not considered as a separate cost item	<ol style="list-style-type: none"> 1) The Contractor shall be responsible for implementation of environmental and social mitigation measures. 2) PIU Technical Supervision Engineer / Technical Supervision Company will provide overall supervision of the construction site, including monitoring of potential environmental and social risks.

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		<p>than 8 people;</p> <ul style="list-style-type: none"> - medical kits for each construction site to render first-aid - anti-noise headphones, earplugs • Compliance with all fire safety requirements • The sites will be equipped with appropriate information boards and signs informing workers about the rules and regulations of work. 		<p>3) PIU Environmental Specialist, Social Specialist and Infrastructure Engineer are responsible for overall supervision.</p> <p>4) State control will be carried out by the authorized state body</p>
Aesthetics & Landscape	Landscape disturbance can be associated with the accumulation of construction debris	Once the works are completed, planning and restoration works will be carried out on the distribution network sections.		
Historical and cultural sites	The works will not affect cultural and historical sites.			
Safety and health of workers	Workers can be injured during their work	<ul style="list-style-type: none"> • Regional inspectors of the Ministry of Natural Resources, Ecology and Technical Supervision, who control construction works and environmental safety will be duly notified of the forthcoming project works. • All work shall be performed in a safe and disciplined manner and organized so as to eliminate work-related injury. • Personal protective equipment of workers must meet work safety standards (with mandatory permanent wearing of helmets, protective masks in those conditions where it is necessary, safety goggles, safety harnesses and safety shoes). • Appropriate directional and informational signage will be posted at the site to inform workers of the basic rules and regulations of the work to be performed. • Warning signs, signage, and signal tapes shall be installed for the safety and protection of workers. 		<p>1) The Contractor shall be responsible for implementation of environmental and social mitigation measures.</p> <p>2) PIU Technical Supervision Engineer / Technical Supervision Company will provide overall supervision of the construction site, including monitoring of potential environmental and social risks.</p> <p>3) PIU Environmental Specialist, Social Specialist and Infrastructure Engineer are responsible for overall supervision.</p> <p>4) State control will be carried out by the authorized state body</p>
Public safety and health	Occupational injuries	<ul style="list-style-type: none"> • Regional inspectors of the Ministry of Natural Resources, Environment and Technical Supervision, local communities should be appropriately informed about upcoming project activities. 	It is not considered as a separate cost item	

		<ul style="list-style-type: none"> • Local communities will be appropriately informed about the works through publications and/or media alerts and/or information boards in public places (and at work sites). • All permits required by law for the use of waste landfill/dump, as well as approvals from the Sanitary Inspectorate, etc. during construction and rehabilitation works at the site must be obtained. • The contractor shall: <ul style="list-style-type: none"> - organize parking of machinery at a safe distance from social facilities (schools, kindergartens, hospitals, etc.); - fence the excavated trenches with warning signal tapes; - install road signs, safety signs for pedestrians and drivers; - provide residents with a sufficient number of safe crossing bridges (over trenches). 		
Inflow of workers and labor issues	Conflict situations in employment. Unsatisfactory living conditions. Harassment of local residents or vice versa	<p>Require workers to:</p> <ul style="list-style-type: none"> • comply with working and rest conditions, • comply with the labor schedule • Provide job skills training to increase community participation • Provide adequate sanitary facilities (toilets and washing facilities) at the workplace with sufficient supplies of hot and cold running water, soap and hand drying devices. • Install a temporary septic tank system for any residential labor camp without causing pollution to nearby waterways. • Raise employees' awareness of the overall management of community relations, establish a Code of Conduct in line with international practices and strictly enforce them, including dismissal of employees and financial sanctions on an appropriate scale. 	It is not considered as a separate cost item	
Human Communities	Existing communications failure	Timely warning of the population about upcoming shutdowns. Quickly restore the operation of utilities.		Local Self Governments PIU

	Gender quota	<ul style="list-style-type: none"> • Equal participation, consideration and reflection of women's interests and opinions throughout the project implementation period. • At least 30% of participants in all project meetings and hearings will be women. Under the project, communities will be invited to establish rural settlement water committees. At that, at least 30% of the committee members will be women. 		Local Self Governments PIU
	Poverty	A plan will be developed under the project to connect poor households to water services.		Aiyl Okmotu (AO) Municipal water supply enterprise PIU
	Possible social resistance against tariff increases	Social mobilization under the project, community outreach (public works, hearings, development and implementation of information campaign plans). Tariffs will be developed taking into account community views received during public consultations.		Aiyl Okmotu (AO) Municipal Water Supply Enterprise (MWSE)/Community Drinking water Users Union (CDWUU) supported by the PIU
	Limited capacity of local governments	The project includes selected activities aimed at capacity building and technical support to local governments		PIU
	Actual project implementation delays or construction delays that may pose a threat to public safety	Delays in the implementation of construction work can cause some discontent. In such cases, community outreach will be conducted.		Contractor PIU
Operation PeriodPhase				
Water system leaks, water discharges when flushing water lines	Water system leaks and reduction in the pressure could cause water quality deterioration (dirty water getting into the pipeline). Also some households may temporarily lack water.	<ul style="list-style-type: none"> • Ensure the use of environmentally acceptable fuel • Routine maintenance (12 months warranty period for the system) • Ensure that all assurances and certificates are obtained in accordance with fire safety and air emissions/concentrations monitoring requirements • Ensuring proper and efficient use of water resources and preventing water losses and leakages and excessive water consumption - installation, operation and periodic inspection of water meters at water 	Events, trainings and meetings	Municipal water supply enterprise PIU

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		<p><u>preparation of service contract agreements, to clarify and formalize respective responsibilities of the operator and asset owner and to support governance of service performance, tariffs and financing mechanisms.</u></p> <p><u>malize respective responsibilities of the operator and asset owner and to support governance of service performance, tariffs and financing mechanisms.</u></p> <p><u>Local level institutional support will also seek to strengthen Department capacity at the rayon level, focusing sector monitoring and technical support for complex operational and maintenance issues.</u></p> <p><u>The project will support the development of connection subsidy strategies and tariff determination mechanisms to meet the needs and demands of the poorest and most vulnerable segments of the population.</u></p>		
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7. Monitoring plan

Which parameter is to be monitored	Where to be monitored	How will be monitored (instrument type)	When (Measurement frequency)	Monitoring cost. (equipment cost or the amount of contractor costs required to implement the monitoring?)	Institutional responsibility for monitoring	Start Date
Noise	At construction site and waste dump	Visually	Continuous	Criteria /specifications to be incorporated into bidding and contract documents. It is not considered as a separate cost item	1. Site inspection is carried out by the PIU to ensure compliance with the ESMP. 2. The state inspectors will oversee the implementation of design solutions during construction and installation works or during the reconstruction of facilities, the quality of construction materials and structures. They will participate in the commissioning of completed construction projects. 3. The state inspectors, implementing the state environmental supervision, have the right to supervise in accordance with the established procedure after providing relevant identification documents in accordance with environmental regulations, standards, environmental protection measures in the course of project implementation	After handover of the facility to the Contractor
Air	At construction site	Visually	On weekly basis			
Transportation	At and near the construction site	Visually	Continuous			
Waste disposal and storage	At construction site and waste dump	Visually	According to plan, but at least weekly			
Soil Pollution	At construction site	Visually	Continuous			
Construction site dismantling	At construction site	Visually	According to plan			
Trees, shrubs	At construction site	Visually	Continuous			
Safety of workers	At construction site	Visually	Continuous			

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8. Supervision and reporting

Supervision of the ESMP implementation measures.

During the ESMP implementation activities, the PIU Environmental Specialist and Specialist on Social Issues will be responsible for general supervision to ensure that the measures specified in the ESMP are properly implemented. Specialists in cooperation with local authorities will monitor socio-environmental activities during the construction period.

The Field Supervision Engineer/Company shall be on the construction site at all times. Further, the PIU Environmental Specialist, Specialist on Social Issues or Infrastructure Engineer should visit the construction site at least once a month to monitor the fulfillment of the ESMP requirements during subproject implementation.

Upon monitoring completion, the PIU Environmental Specialist and Specialist on Social Issues should submit a site visit report to the Project Coordinator. In case of non-compliance with environmental protection measures, a statement should be prepared indicating the period of elimination of violations for the contractor.

When conducting socio-environmental monitoring, special attention will be paid to incidents and accidents. If accidents resulting in major injury or death are identified, the contractor or supervising engineer should immediately notify the PIU, and they will be recorded are identified, they will be recorded in the subproject registerreport. The accident should be categorized as severe, serious, and and categorized as severe, serious and minor with a description of the type and cause of the incident. Regular subproject progress reports submitted to PIU by the Field Supervision Engineer/Company should include information on the implementation of the environmental and social management plan. The section should contain a summary and brief description of the monitoring activities, as well as a description of the problems occurred and methods for correcting them.

Institutional responsibility for implementing the ESMP.

№	Stakeholder Responsible	Role/ Responsibility Duties
1	The Ministry of Natural Resources, Ecology and Technical Supervision	Reviews the "Environmental Protection" section developed by the design institute as part of the design and estimate documentation for the rehabilitation of the water supply system, and issues an environmental report for expertise.
2	Environmental and Technical Supervision Service under the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic	Carries out state supervision and control on environmental and technical safety issues at construction sites of subprojects
3	Department of Disease Prevention and State Sanitary and Epidemiologic Surveillance of the Ministry of Health.	Responsible for monitoring the quality of drinking water. Conducts examinations and takes samples of drinking water, examining physicochemical and microbiological indicators. Samples must comply with the requirements of the Law of the Kyrgyz Republic "Technical Regulations "On the Safety of Drinking Water".
4	Local Self Governments	Ensure that stakeholders are informed Fulfill the terms and conditions of the Cooperation Agreement Assist in conducting public hearings. Resolving grievances during the implementation of the RAP and ESMP. Pay compensation for land and assets of PAPs, as per the RAP.
5	Community Drinking Water Users Union Rural Public Associations of Drinking Water Consumers and/or Municipal Water Enterprise.	Actively participate in the process of construction and/or rehabilitation of drinking water supply systems, public supervision of construction work and compliance with the requirements of the ESMP.
62	PIU Environmental	Full project environmental support.

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	Specialist	Environmental Screening. ESMP preparation. Environmental monitoring of construction works. Training for stakeholders (contractors, LSGs, community, etc.) Issuing instructions to contractor.
73	PIU Specialist on Social Issues	Full project social support. Social screening. ESMP preparation. Social monitoring of construction works. Training for stakeholders (contractors, LSGs, community, etc.) Issuing instructions to contractor. GRM management
84	Technical Supervision Engineer / Company	Conducts daily socio-environmental monitoring of construction works Issues instructions to contractor Conducts training and outreach to contractor Submits monthly report to PIU on fulfillment of socio-environmental requirements
95	Contractor	Performs the ESMP activities and the Environmental Protection Section, which received a positive state environmental conclusion. Submits monthly report to PIU on the implementation of socio-environmental activities.

9. Public Consultation

As part of the project startup, the PIU organizes meetings to launch project activities in the project area. The PIU Environmental and Social Safeguards Team will organize and conduct public meetings according to the schedule of Project activities during the life of the subproject. Minutes of public meetings, hearings, and introductory meetings will be recorded, and participant sign-in sheets and photos will be attached to confirm the activities conducted. The PIU Public Relations Specialist is involved in the project activities to prepare and post information about the subproject on the PIU website and social media throughout the project cycle in the state and official languages. Social media channels will be used as much as possible to disseminate information, since social media usage rates are high among beneficiary users of different ages and backgrounds.

10. Grievance Redress Mechanism

In accordance with the requirements of the World Bank's Social and Environmental Standard SES10, the PIU will apply its Grievance Redress Mechanism (hereinafter GRM) as part of relevant component activities during the Project operation. The GRM will streamline the process of receiving, reviewing and resolving grievances that may arise as a result of the implementation of Project activities in the subproject.

The GRM process is necessary to enable direct and indirect beneficiaries, stakeholders and Project staff, at all stages of Project implementation:

- to access information about the Project;
- at all stages of the Project operations to submit their appeals for improvement of the Project activities;
- in increasing transparency and openness in the process of implementation of the Project activities;
- timely addressing issues/problems preferably at no cost and with a guarantee of timely resolution.

Citizens' appeals directly related to the Project implementation are subject to consideration. Appeals or complaints can be either individual or collective. The mechanism will also allow for anonymous complaints to be filed and addressed. In accordance with the Law of the Kyrgyz Republic "On the Procedure for Consideration of Citizens' Appeals" dated 4 May 2007 No.67, citizens/residents of subprojects can send any appeals on issues related to the scope of the Project at all stages of its implementation. This GRM will apply to the entire Project, but will focus on the construction and/or

rehabilitation component of the water supply system, as direct adverse impacts from Project activities will be experienced by residents/populations living in the Project area, and social, environmental, and other issues may arise during the design, construction, and/or rehabilitation of the drinking water supply and sanitation system.

GRM key objectives:

- Register, verify, review, follow up and respond to complaints or appeals received related to social, environmental and any other issues related to Project activities;
- To reach mutually agreed solutions satisfactory to both the Project and Project-affected persons, and to resolve any grievances locally in consultation with the aggrieved party;
- To facilitate the development process at the local level while maintaining transparency, as well as to establish accountability to project affected persons;
- Establish feedback;
- Encourage vulnerable individuals and/or groups to express their views

10.1. Grievance redress and resolution process

The mechanism for addressing /appeals of citizens affected during the Project implementation period and providing appropriate responses on social and environmental safety measures and gender issues will be implemented according to the following three levels, i.e. grievance commissions will be established.

It is important to note that the PIU will implement the approach used in the community mobilization activities through the establishment of Water Committee (hereinafter WC) of rural settlement consisting of representatives of aiyl okmotu, aiyl kenesh, council of aksakals, council of women, council of youth, vulnerable category of population, ethnic minorities, Municipal Water Supply Enterprise, and interested rural residents. The main purpose of forming and interacting with the WC is to facilitate the Project to broadly involve rural residents in the process of addressing the rural settlement water supply and sanitation issues, as well as in:

- dissemination among the rural residents of reliable information on the progress of the project on construction/rehabilitation of water supply system (WSS) and modernization of sanitary facilities of social institutions;
- assistance in increasing transparency and openness in the process of implementation of the Project activities;
- conducting joint monitoring of activities of aiyl okmotu and MWSE on water supply system management and provision of safe drinking water to the population.

Establishment of the Community Water Committee (WC) of the rural settlement at the subproject level is carried out at the introductory meeting of the rural settlement, where information on the Project, agreement on the composition of the WC and the adopted Regulation on the WC are provided, which are all together recorded in the Minutes of the general introductory meeting of the rural settlement. At the first meeting of the WC, a chairperson, a secretary and a person responsible for promotion of the GRM in the subproject are elected.

Further, the Commission for consideration of citizen's of the local level is established at the level of aiyl okmotu on the basis of the Order of Aiyl Okmotu consisting of the head of Aiyl Okmotu, who is the Chairman of the Commission, the Chairman of Aiyl Kenesh is appointed as the Co-Chairman of the Commission, representatives of the regional branch of the state institution "Cadastre", the territorial department of the MNRETS KR, the DDPSES of the MH KR, director of MWSE, the Chairman of the WC subproject, rural resident and representative of the PIU in the subproject.

Regarding the Commission for consideration of citizens' appeals at the national level within the framework of the ongoing PIU of the DDWSWD Project, this Commission was established by the Order of the DDWSWD with No. 27/p dated 09.11.2023. The Commission is composed of:

- The Director of the Department for Development of Drinking Water Supply and Wastewater Disposal (DDWSWD) is the Chairman of the Commission for consideration of citizens' appeals;
- The head of the Department of Drinking Water and Wastewater Disposal is the co-chair of the Commission;
- A representative of the State Civil Service Agency and Local Government;
- Representative of the Department of the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic;
- Representative of the Department of Disease Prevention and state sanitary and epidemiological supervision of the Ministry of Health and Social Development of the Ministry of Health of the Kyrgyz Republic;
- PIU Director;
- PIU Environmental Specialist;
- PIU Social Safeguards Specialist.

Table No. 21 provides information on levels, timeframe and responsible persons for consideration of appeals and complaints of citizens and stakeholders.

Table No. 2. Matrix for managing appeals/complaints from citizens affected by the Project.

Step	Impact level	Process	Timeframe
1	Decision at the subproject rural water committee (WC) level.	At the initial stage, the WC listens to the Applicant and proposes acceptable solutions. If, the Applicant is not satisfied with the decision of the WC, he or she shall file a complaint in writing with the local Grievance Commission.	2-3 working days
2	Decision at the aйл okmotu level	Upon receipt of a written request from the Applicant, the AO Commission at the local level will analyze the request and prepare a package of documents. The decision of a majority of the Commission members shall be considered final and the final MoM shall be signed. The decision shall be made within 14 working days with sending the conclusion of the commission's decision to the Applicant. If the Applicant is not satisfied with the decision of the Commission, he/she shall submit an appeal in writing to the Central Level Commission with the opinion and supporting documents received at the local level.	14 working days
3	Central level solution	Upon receipt of a written appeal from the Applicant, the Commission at the central level will review and prepare the appeal package. The formal hearing shall be held on a date agreed upon by the Commissioners. Members of the Commission will contact the Applicant by telephone and organize a visit to the Applicant's community to verify an objective assessment of the facts and verify their accuracy if necessary. Within 14 working days of the filing of the appeal, the Commission shall make a decision and sign the final MoM for further	14 working days

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	submission to the Applicant.	
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At all levels, the PIU Social Safeguards Specialist will maintain direct communication with the Project Affected Person (PAP). The project will determine the validity of the grievance, notify the complainant that he/she will be provided assistance. A response will be provided within the above timeframes indicated in the matrix above, during which time meetings and discussions will be held with the affected person. In the cases when the resolution of a complaint requires a special inspection (expert examination), requesting additional materials or taking other measures, the deadlines for resolving complaints may be exceptionally extended, but for no more than 30 calendar days in accordance with the Law of the Kyrgyz Republic dated 4 May 2007 No. 67 "On the Procedure for Consideration of Citizens' Appeals". The project will support PAPs at all stages to resolve the complaint and ensure that their complaint is addressed in the best possible way.

The Project's GRM is not an obstacle to appeal to the court, in accordance with the legislation of the Kyrgyz Republic, a PAP has the right to appeal to the court at any stage of consideration of his/her grievance. Anonymous complaints will be reviewed and actions will be taken on them within the Project.

Register of appeals/complaints.

All incoming complaints or appeals are to be registered in a local and national complaints register, the information from which is duplicated in an electronic database. The database should contain, at a minimum, relevant information on the date of submission, registration number, nature of the issue, responsible person, timeframe for problem resolution and feedback (positive/negative).

The following communication channels have been established under the current PIU project through which residents/beneficiaries can send appeals at different stages of project implementation:

- WhatsApp group is an instant text messaging system for mobile devices with voice and video support to the following GRM numbers: + 996 998 544 575 и +996 707 544 575;
- oral or written communications received during on-site working meetings and by Project field specialists in the subproject;
- incoming correspondence on purpose to the PIU reception desk;
- incoming e-mail correspondence PIU@tunuksuu.kg
- by mail - Bishkek, Baytik Baatyr str. 34.
- by phone: + 996 (312) 54-45-75

10.2. Handling sensitive grievances

Given the Standards for the Prevention of Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH), which the World Bank requires all WB-financed projects to adhere to, these standards and responsibilities are also to be adhered to, whereby measures are taken to raise awareness on prevention and mitigation of SEA/SH. At all stages of project implementation, all the PIU staff and contractors will be informed on understanding the principles of control and prevention of the SEA/SH risks. The GRM will ensure access and confidentiality of the grievance mechanism, and will ensure that the applicant does not fear likely retaliation. These complaints will be investigated without any delay and all responsible will be held accountable. The SEA/SH issues will require certain additional measures:

- Gender sensitivity will be taken into account in the hiring of social work specialists to work in the PIU.
- Safeguards specialists will be informed of the SEA/SH issues.
- In addition to sociocultural sensitivity and non-violent communication in employee training, the SEA/SH will be on the agenda as well. Training for employees will include the following information about the SEA/SH:

- ✓ Definition of violence against women in national and international instruments;
- ✓ Types of violence (physical, sexual, economic, emotional);
- ✓ Legal Sanctions.
- The grievance mechanism will be accessible and will ensure the confidentiality of personal information.
- Awareness-raising activities will be conducted to inform women about the application of the mechanism. The following types of information will be provided in these activities:
 - ✓ Women's rights;
 - ✓ Self-defense in cases of violence and sexual assault. Emergency phone numbers;
 - ✓ Contact information of institutions and organizations to which they can apply;
 - ✓ Grievance mechanism and privacy policy.
- The principle of confidentiality of the grievance mechanism will be repeated in all information materials.

The Project will use additional mitigation measures proportional to the risk. The Contracting organization will be responsible for developing personnel management procedures, health and safety plans, and the SEA/SH protocols that will apply to its own employees and employees of (sub)contractors who are employed by the Project. These procedures and plans will be submitted to the PIU for review and approval before contractors are allowed to begin construction work. All contractors will be required by contract to commit against the use of child labor and forced labor, to take measures regarding the effects of the SEA/SH, and PIU personnel responsible for contractor oversight will monitor and report on the absence of forced labor and incidents of the SEA/SH. All personal data and complaints received by GRM will be treated confidentially unless the Applicant consents to the disclosure of their personal information. In particular, the confidentiality of sensitive issues and the SEA/SH complaints from communities will be respected.

10.3. WB Grievance Redressal Service

Communities and individuals who believe that they are adversely affected by a World Bank-supported Project may also file complaints directly with the Bank through the Bank's Grievance Redress Service (GRS) (<http://projects-beta.worldbank.org/en/projectsoperations/products-and-services/grievance-redress-service>). A complaint may be submitted in English, Kyrgyz or Russian, although complaints written in languages other than English will require additional time. You can file a complaint with the Bank's GRS through the following channels:

- by e-mail: grievances@worldbank.org
- by fax: +1.202.614.7313
- by mail: The World Bank, Grievance Redress Service, MSN MC10-1018, 1818 H Street Northwest, Washington, DC 20433, USA
- To the World Bank Office in the Kyrgyz Republic, Bishkek, Moskovskaya Str. 210, Bishkek, Kyrgyz Republic, bishkek@worldbank.org, and by phone: +996 312 625262

The complaint should clearly state the adverse impact allegedly caused or likely to be caused by the Bank-supported project. It should, where possible, be supported by available documentation and correspondence. The applicant may also indicate the desired outcome of the complaint. The complaint must include the name of the applicant or designated representatives and contact information. Grievances filed through the GRS shall be addressed as soon as possible so that Project-related issues can be quickly resolved.

Further, communities and individuals affected by the Project may file complaints with the World Bank's Independent Inspection Panel, which then determines whether harm has been or may have been caused as a result of the World Bank's failure to comply with its policies and procedures. Complaints may be filed

with the Inspection Panel at any time after the matters have been brought to the attention of the World Bank and after bank management has had an opportunity to respond. For information on how to file a complaint with the World Bank Inspection Panel, please visit www.inspectionpanel.org.

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Annex 1. Environmental Screening

Part 1. (to be filled in by the beneficiary of the subproject)

1. Subproject name: Bokonbaev

2. A brief description of the subproject.

The Bokonbaev Subproject includes one village, Bokonbaev.

Total scope of work:

- Laying of polyethylene pipes in the distribution network 0110x6.6mm and 063x5.8mm 10 MPa in an amount of 55,961 m;
- Reinforced concrete wells KS (manhole rings) 15x0.9 in quantity - 683 pcs.;
- Fire hydrants - 199 pcs.;
- Manifolds for household connections - 681 pcs.;
- Additional works: cutting of asphalt pavements with a width of 1.2 m - 2351 m;
- Dismantling and restoration of asphalt pavements - 4701 m²;
- Rehabilitation of unpaved roads (leveling) - 3200 m².

Excavation works:

- Excavation (trenching) by excavator 0.5 m³ – 353,550 m³;
- Soft foundation and loose soil loading – 75,550 m³;
- Backfilling – 277,000 m³;
- Area leveling (reclamation) – 347,000 m².

Duration of construction works is 18 months, the defects liability period is 12 months after commissioning of the facility.

3. Will the project affect the following environmental parameters during construction or operation?

Indicate by checking at what stage the impact will occur and whether mitigation measures are required.

<u>Environmental component</u>	<u>Construction phase</u>	<u>Operational phase</u>	<u>Mitigation measures</u>
Terrestrial environment			
Land and Soil Degradation: Will the project include earthworks?	Yes	No	<ul style="list-style-type: none"> • Ensure proper selection of areas for construction site location, where solid waste collection and safe toilets (possibly bio-toilets) should be provided.
Pollution of soil and groundwater	Yes	No	<ul style="list-style-type: none"> • Timely cleaning of territories from oil products in case of oil spills on the soil • No washing of machinery and equipment in the construction area • Fueling of machinery will be carried out at specialized fuel stations • Vehicles with a defective fuel system exceeding the exhaust gas toxicity standards and hydraulic systems shall not be permitted. • Use of vehicles that have passed technical inspection • No storage and stockpiling of fuel and lubricants and construction materials is allowed to prevent pollution from entering the river • Daily inspections of machinery and equipment for oil leaks • Topsoil Removal Improvement of the territory in accordance with the project.
Solid waste generation, including toxic waste?	Yes	No	<ul style="list-style-type: none"> • Sign an agreement with the local municipality for disposal of construction

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		<p>and household waste at the municipal landfill before the works start.</p> <ul style="list-style-type: none"> • Determination of methods of waste collection and disposal prior to the commencement of work, as well as locations for the main types of waste generated during demolition and construction work • Mineral waste from construction works and waste generated during dismantling of facilities shall be separated from organic, liquid and chemical wastes at the work site, after which they shall be stored at a proper site • All records and documentation of waste removal and disposal should be properly maintained as evidence of proper waste management practices on site as designed • Recycling of inert material waste (except asbestos) is allowed whenever possible • Construction waste shall be removed at the contractor's expense to the storage sites. <p>Asbestos-containing materials</p> <ul style="list-style-type: none"> • Some construction debris may contain asbestos. The Contractor shall train its employees to assess the presence of asbestos-containing materials and determine procedures for safe disposal of asbestos using appropriate protective equipment, storage in sealed containers. Safety requirements for asbestos management are specified in Annex 4. • Asbestos should be handled and disposed of by qualified and experienced specialists using proper protection (masks, gloves and overalls). • Before removal (if removal is necessary), the asbestos will be treated with a wetting agent to minimize the generation of asbestos dust. • Asbestos-containing materials shall not be subjected to breaking or cutting. • Workers should avoid crushing/destruction of asbestos waste and dispose of it in an organized manner at construction sites with subsequent removal to designated areas or burial. • If asbestos material is to be temporarily stored, its waste must be securely isolated in closed containers and labeled as hazardous material. • Hazardous waste transportation to landfills is carried out by specially equipped own transport of the enterprise or specialized transport companies. • Transportation of unpackaged asbestos in open bodies of vehicles is not allowed. • ACM should be safely disposed of at a
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			<p>local hazardous waste landfill, if available, or at a municipal landfill after prior arrangements have been made with the landfill operator for safe storage.</p>
<p>Activities that involve positive or negative effects on Ecosystem Services or Biodiversity</p>	Yes	No	<p>Tree and shrub cutting, crown pruning should be carried out strictly along pipe laying routes only after obtaining permits from territorial environmental authorities in coordination with the local governments, taking into account compensatory planting.</p> <p>If it is necessary to cut down municipal trees, the contracting organization should request a cutting permit from Aiyl Okmotu. Then, AO with the approval of the local environmental authorities will obtain a permit to cut down the specified number of trees.</p> <p>When the water pipeline route is completed, a tree inventory should be conducted with the municipality to identify potential trees to be cut for compensation.</p> <p>In case of cutting down municipal trees, compensation in the form of seedlings will be made (the compensation amount is stipulated in the bill of quantities (BoQ)). For one tree felled, 3 will be planted. The contractor shall plant saplings in the places determined by the aiyl okmotu (AO), drawing up a planting act.</p> <p>In the case of private tree felling, a RAP will be prepared in accordance with the SES5. If trees of several owners are felled, one RAP can be prepared for a subproject.</p>
<p>Air quality Does the project provide for emissions of pollutants?</p>	Yes	No	<ul style="list-style-type: none"> • Dust suppression measures and appropriate household activities such as spraying water to prevent dust and use of curtains, and construction site fencing. • Use of masks, gloves and protective clothing. • Limit vehicle speeds and select appropriate transportation routes to minimize exposure to dust-sensitive receptors. • Equip vehicles transporting bulk materials with removable tents. Cement is delivered to construction sites only in pre-packed hermetically sealed bags. • The above machinery is ordered only for the period of specific operations and is not permanently located at the construction site. • Vehicles with a defective fuel system exceeding the exhaust gas toxicity standards shall not be permitted. • It is prohibited to burn construction and household waste on the work site. • Keep the surrounding area clean and free from construction debris to minimize dust and contamination. <p>Organization of proper storage and</p>

			transportation of flammable and hazardous materials (gas cylinders, bituminous materials, paints, solvents, glass and rockwool). It should be noted that the construction of facilities will not take place in parallel, but in stages and sequentially, from one facility to another.
Water environment			
Amount of water: will the project include water use?	Yes	No	<ul style="list-style-type: none"> Do not allow spills/leaks of petroleum products into the ground, in case of inadvertent spills remove contaminated soil and transport to appropriate locations. Timely cleaning of areas from oil products in order to prevent their entry into local water courses and groundwater together with atmospheric precipitation. Vehicles with a defective fuel system exceeding the exhaust gas toxicity standards and hydraulic systems shall not be permitted. Cleaning of outdoor toilet pit from liquid waste and its removal to the municipal treatment facilities according to the Removal Act No excavation near groundwater sources. Work areas with machinery, concrete mixers and fuel tanks should be located outside of water protection zones. Installation of special pallets and other prefabricated equipment in places of possible leaks and spills of fuel and lubricants, technical solutions Disinfection of pit toilet and filling with soil in accordance with building regulations
Water Quality / Pollution: Will the project contribute to surface water pollution	No	No	
Socio-economic environment			
Will the project ensure that there is no deterioration in human health, labor safety and unimpeded living of residents near the project area including Traffic and road safety.?	Yes	Yes	<ul style="list-style-type: none"> Compliance with approved occupational health and safety instructions. All works have to be carried out using safety methods and disciplines to minimize the negative impact on the public and the environment. Personal protective equipment must comply with safety standards (mandatory use of protective helmets, masks, if necessary, belts and shoes). The contractor shall provide workers with: <ul style="list-style-type: none"> - drinking water during working hours; - mobile bio toilets when the crew works with more than 8 people; - medical kits for each construction site to render first-aid - anti-noise headphones, earplugs Compliance with all fire safety

			requirements The sites will be equipped with appropriate information boards and signs informing workers about the rules and regulations of work.
Does the project require public consultation to address environmental issues and proposals from local residents?	Yes	No	
Social implications	Yes	Yes	<ul style="list-style-type: none"> Local communities will be appropriately informed about the works through publications and/or media alerts and/or information boards in public places (and at work sites). All permits required by law for the use of waste landfill/dump, as well as approvals from the Sanitary Inspectorate, etc. during construction and rehabilitation works at the site must be obtained. The contractor shall: <ul style="list-style-type: none"> organize parking of machinery at a safe distance from social facilities (schools, kindergartens, hospitals, etc.); fence the excavated trenches with warning signal tapes; install road signs, safety signs for pedestrians and drivers; provide residents with a sufficient number of safe crossing bridges (over trenches).
Activities that may affect Cultural Heritage	No	No	

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Part 2. (to be filled in by the PIU based on the results of the environmental review process)

1. Environmental category of the subproject (High (H), Substantial (S), Moderate (M) or Low (L)) - **Moderate (M)** (if the project is in category H, the following points do not need to be completed - the subproject cannot be included in the project)

2. Will the project activities be implemented?

a) in or near sensitive and valuable ecosystems - wetlands, wilderness and endangered species habitats - **No** (yes or no)

b) in or near areas with archaeological and / or historical sites or existing cultural and social institutions - **No** (yes or no)

c) in regions prone to intensive development activities or where there are conflicts in the distribution of natural resources; along watercourses, in aquifer recharge zones or in reservoirs used for drinking water supply; and on lands or waters containing valuable resources (such as fishing, minerals, medicinal plants, basic agricultural soils) - **No** (yes or no)

If "yes" - the subproject will be excluded from the Program.

3 Environmental Assessment Required (yes or no) **Yes** (the following items should be completed only for Substantial, moderate subprojects)

Types of EA documents required (circle required):

a) Partial ESIA including site assessment and Environmental and Social Management Plan (ESMP) for Substantial risk subprojects;

b) Environmental and Social Management Plan for Moderate risk subprojects;

c) ESMP checklists for Low risk subprojects;

d) Draft Environmental Impact Report (for Kyrgyz subprojects of categories 2-4)

e) Environmental Impact Statement (for Kyrgyz Category 2-3 subprojects only)

4. What environmental and social issues are being raised under the subproject?

It is expected that these works may cause a variety of minor and medium-sized local impacts, which may include:

- increased pollution due to construction waste;
- formation of dust, noise and vibration due to the movement of construction machines and mechanisms;
- associated risks due to improper disposal of construction waste and asbestos-containing materials that can be found in old water pipes;
- operational or accidental spills of fuel and lubricants from construction equipment;
- inadequate restoration of construction sites after completion of work;
- increased traffic/traffic and public and occupational health, safety issues;
- potentially temporary local disturbance of biodiversity and living natural resources.

Conclusion (can a subproject be included in the program and, if so, under what conditions):
the subproject can be implemented with the condition that all social and environmental mitigation measures will be included in the project.

Part 3. Final Environmental Assessment Checklist (to be filled in by the PIU based on the review of the proposed mitigation and environmental impact assessment (if required))

Was an environmental and social impact assessment necessary?

(Yes or No) **Yes** If yes, was it done? **Yes**

The assessment was carried out within the environmental protection section, which received a positive conclusion from the state environmental assessment.

Has an Environmental and Social Management Plan been prepared?

(Yes or no) **Yes**

Are the mitigation measures to be included in the project implementation adequate and appropriate? (Yes or no) **Yes**

Will the project comply with existing pollution control standards for emissions and waste? (Yes or No) **Yes**

Do you need an environmental monitoring plan? (Yes or No) **Yes** If so, was it prepared? (Yes or No) **Yes**

Has there been a public consultation regarding the potential environmental impacts of the proposed subproject? (Yes or No) **Yes** Were protocols kept? (Yes or no) **Yes**

Date:

Participants

Part 4. Final Environmental Review Checklist (2)

(to be filled in by the PIU based on the review of the proposed mitigation and environmental and social impact assessment (if necessary))

Is the project documentation completed? If not, what is missing? *DED completed.*

Are solid waste permits required? If so, have they been received?

Yes, solid waste permits required. When the contractor is determined, the appropriate permits will be obtained.

Are discharge permits required for wastewater? If so, have they been received? *Not expected*

отформатировано: Шрифт: 11 пт, английский (США)

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Is a sanitary inspection required? Has a permit been issued? *Not required in this subproject*

Has an environmental assessment been obtained and approved? *Yes*

Is there a probability of soil degradation or contamination? If so, have appropriate prevention or mitigation measures been planned and envisaged? *Yes, measures are planned*

Is there a probability for deteriorating water quality or contamination? If so, have appropriate prevention or mitigation measures been planned and envisaged? *No*

Is there a probability for air quality degradation or pollution? If so, have appropriate prevention or mitigation measures been planned and envisaged? *Yes, measures are planned*

Is there a threat to the biological environment? If so, have appropriate prevention or mitigation measures been planned and envisaged? *Yes, measures are planned*

Is there a potential for adverse social impact? If so, are the necessary prevention, mitigation or compensation measures planned and envisaged? *Yes, measures are planned*

Was the level of public participation in design, planning and public consultation sufficient? Was public opinion raised during the consultation process? *Yes*

What is the desired level, frequency and extent of environmental monitoring during the construction phase? *Minimum once a month*

What is the desired level, frequency and extent of environmental monitoring during the operational phase? *Semiannually.*

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Annex 2. Social Screening

отформатировано: Шрифт: не полужирный

Subproject name: Bokonbaev
Location (Oblast, city, village): Issyk-Kul oblast, Ton rayon
Brief description of the subproject.
 The Bokonbaev Subproject includes one village, Bokonbaev.
Total scope of work:

- Laying of polyethylene pipes in the distribution network 0110x6.6mm and 063x5.8mm 10 MPa in an amount of 55,961 km;
- Reinforced concrete wells KS (manhole rings) 15x0.9 in quantity - 683 pcs.;
- Fire hydrants - 199 pcs.;
- Manifolds for household connections - 681 pcs.;
- Additional works: cutting of asphalt pavements with a width of 1.2 m - 2351 m;
- Dismantling and restoration of asphalt pavements - 4701 m²;
- Rehabilitation of unpaved roads (leveling) - 3200 m².

Excavation works:

- Excavation (trenching) by excavator 0.5 m³ – 353,550 m³;
- Soft foundation and loose soil loading – 75,550 m³;
- Backfilling – 277,000 m³;
- Area leveling (reclamation) – 347,000 m².

Duration of construction works is 18 months, the defects liability period is 12 months after commissioning of the facility.

отформатировано: английский (США)

Questions	Yes	No	Not Known	Observations, remarks
Impacts Due to Land Acquisition/Donation				
Is land area needed for the project known? (Provide estimates in the Remarks, including status of ownership, area, type of land use etc.)	✓			Construction of a distribution network on municipal lands, 55 km
Is the ownership status and current usage of land to be used for the construction known? (provide details in the remarks). Please, add is the site chosen for this work free from encumbrances and is in possession of the subproject implementer?	✓			Construction of a distribution network on municipal lands, 55 km
Is there any estimate of the land area owned/actually used by private persons/entities which is subject for land acquisition?	✓			No impact on private land
Is there any estimate of the likely number of persons/entities that will be displaced by the Project?	✓			No persons/entities that will be displaced by the Project
Is land for material mobilization or transport for the civil work available within the existing plot (Right of Way)? If not, provide the details on that land location, availability etc.			✓	Land for material mobilization or transport for the civil work will be determined by Aiyl Okmotu after awarding the contract
Would the Project potentially involve temporary or permanent and full or partial physical displacement? (Specify in the remarks what type of displacement is anticipated).		✓		

отформатировано: английский (США)

Would the Project potentially involve temporary or permanent and full or partial economical displacement (e.g. loss of assets or access to resources due to land acquisition/donation or access restrictions – even in the absence of physical relocation)? (Specify in the remarks what type of displacement is anticipated).		✓		
Is there any impact on illegal land use practices? Are there any non-titled people who are living/doing business on the proposed site/project locations that will be used for civil work? If yes, provide in the Note Section details on any temporary or permanent impact on them?		✓		
If the site is privately owned, can this land be purchased through negotiated settlement?	⋮	⋮		
Will the land owners donate the land plot for the project?	⋮	⋮		
Will there be loss of shelter and/or residential land due to land acquisition/ donation?		✓		
Will there be loss of any productive assets due to land acquisition/donation?		✓		
Will there be losses of crops, trees, and fixed assets due to land acquisition/donation?		✓		
Will there be loss of businesses or enterprises due to land acquisition/donation?		✓		
Will there be loss of income sources and means of livelihoods due to the subproject land acquisition/donation?		✓		
Will any social or economic activities be affected by land use related changes?		✓		
Will people lose access to natural resources, communal facilities, services or other assets as a result of land acquisition/donation or project implementation? Provide details in the remarks.		✓		
Will project result in land use restrictions and/or easement rights? Provide details in the remarks.		✓		
Will access to land and resources owned communally or by the state be restricted?		✓		
Will the subproject be located in or near any known cultural heritage sites?		✓		
Is there a territorial dispute between two or more countries over the subproject area, its ancillary aspects and related activities?		✓		
Are there any previous land acquisitions happened and the identified land has been already acquired? Provide details in the Note section.		✓		
Are there any land acquisition happening under this project but without financing of the World Bank? Provide details in the Note section.		✓		
Data on Vulnerable Groups				
Is there any estimate of the likely number of vulnerable groups/persons that will be displaced by the Project?		✓		
Are any of them poor, female-heads of households, or vulnerable to poverty risks? Provide some estimate		✓		
Is the subproject located in or near any vulnerable/sensitive areas, social facilities - such as a residential area or school and the availability of municipal	✓			

services (irrigation, drinking water, sewage and waste collection services)?				
Whether the subproject is located in or near any known cultural heritage sites?			✓	
Gender				
Is there a likelihood of impacts on gender equality and/or the situation of women and girls?			✓	
Would the Project potentially reproduce discriminations against women based on gender, especially regarding access to assets, opportunities and benefits?			✓	
Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?			✓	
SEA/SH				
Does the project site pose a significant risk of gender-based violence (GBV) and sexual exploitation and abuse (SEA)?			✓	
Is it expected to hire a foreign workers for the subproject purpose which can lead to a labor influx?			✓	
GM				
Does the subproject have a GM, including at the Central level, to which all employees have access and which is intended for quick and effective response?		✓		
Decision on categorization				
After reviewing the answers above, a sub-project's category is determined <i>Moderate</i>				

отформатировано: Шрифт: 11 пт

Отформатировано: Обычный

Добавлено примечание ([LNGHA75]): Add E&S screening checklists results.

Добавлено примечание ([MK76R75]): Added

CODE OF CONDUCT TO BE OBSERVED BY THE CONTRACTING ORGANIZATION (HEREINAFTER REFERRED TO AS THE CONTRACTOR)

Code of Conduct for Contractor Personnel: Form

We, the contractor, [enter Contractor's name], have signed a contract with [enter Employer's name] for [enter description of Work]. These Works will be carried out at [insert Site and other locations where the Works will be carried out]. Our contract requires us to take measures to address the environmental and social risks associated with the Works, including the risks of sexual exploitation, sexual violence and sexual harassment.

Note:

The minimum content of the Code of Conduct form established by the Employer shall not be materially altered. However, the Contractor may add requirements as necessary, including to address issues/risks associated with the Contract.

This Code of Conduct is part of our measures to address the environmental and social risks associated with our operations. It applies to all of our personnel, employees and others employed on the construction site or elsewhere where work is being performed. It also applies to the employees of each subcontractor and any other personnel assisting us in the performance of the Work. All such persons shall be referred to as "Contractor Personnel" and shall be bound by this Code of Conduct.

This Code of Conduct defines the behavior we require of all Contractor Personnel.

Our workplace is an environment where unsafe, abusive, angry or violent behavior is unacceptable and where all people should feel comfortable raising issues and not fearing punishment.

REQUIRED BEHAVIOR

The Contractor's personnel shall:

1. perform their duties with integrity and competence;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and welfare of other Contractor Personnel and any other person;
3. maintain a safe working environment, including by:
 - ensuring that workplaces, machinery, equipment and processes under everyone's control are safe and free from health hazards;
 - wearing the necessary personal protective equipment;
 - using appropriate measures for chemical, physical and biological substances and reagents; and
 - following applicable emergency operating procedures.
4. report work situations that he/she believes are unsafe or pose a health hazard, and to withdraw himself/herself from work that he/she reasonably believes poses an immediate and serious danger to his/her life or health;
5. treat others with respect and do not discriminate against certain groups such as women, people with disabilities, migrant workers or children;

6. not engage in sexual harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Contractor or Employer personnel;
7. not to engage in sexual exploitation, which means any actual or attempted abuse or misuse of a position of vulnerability, inequality of position or trust for sexual purposes, including but not limited to obtaining monetary, social or political advantage from the sexual exploitation of another person;
8. not to participate in forced sexual activity, which means actual coercion or coercion of a sexual nature by physical force, under unequal or coercive conditions;
9. not engage in any form of sexual activity with anyone under the age of 18, unless previously married;
10. attend appropriate training courses to be conducted on the environmental and social aspects of the Contract and to include health and safety, sexual exploitation and abuse and sexual harassment;
11. report violations of this Code of Conduct; and
12. not retaliate against any person who reports violations of this Code of Conduct, whether to us or to an employer, or who utilizes the grievance mechanism provided for contractor personnel or the project grievance mechanism.

RAISING CONCERNS

If any person witness's behavior that he/she believes may constitute a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the matter immediately This can be done in one of the following ways:

1. Contact [*enter the name of the PIU Specialist on Social Issues with relevant experience in handling cases of sexual exploitation, sexual abuse and sexual harassment, or, if such a person is not required by the Contract, another person designated by the Employer to handle these matters*] in writing at the following address [] or by telephone [] or in person at []; or
2. Call [] to the Employer's hotline (*if available*) and leave a message

A person's identity will be kept confidential unless suspected involvement is provided for under the laws of the country.

Anonymous complaints or claims may also be made and will be given due and appropriate attention. We take all reports of possible misconduct seriously and will investigate and take appropriate action. We will provide guidance and additional information to service providers who can help support the person experiencing the alleged incident, as appropriate.

No penalty will be imposed against any person who in good faith reports any conduct prohibited by this Code of Conduct. Such punishment will be a violation of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Contractor Personnel may result in serious consequences, up to and including termination of employment and possible referral to law enforcement authorities.

FOR THE CONTRACTOR'S PERSONNEL:

I have received a copy of this Code of Conduct written in a language I understand. I understand that if I have any questions about this Code of Conduct, I may contact [*enter the name of the Customer's contact person(s) with relevant experience*] to request clarification.

Name of Contractor's employee: [*insert full name*]

Signature _____

Date: (day/month/year): _____

Counter-signature of the Contractor's authorized representative:

Signature _____

Date: (day/month/year): _____

Behaviors that constitute sexual exploitation and abuse (SEA) and behaviors that constitute sexual harassment (SH).

BEHAVIOR THAT CONSTITUTES SEXUAL EXPLOITATION AND ABUSE AND BEHAVIOR THAT CONSTITUTES SEXUAL HARASSMENT

The following is a partial list of prohibited behaviors

(1) Examples of sexual exploitation and abuse include, but are not limited to, the following:

- - Contractor personnel inform a local resident that he/she can obtain work related jobs (e.g., cooking and cleaning) in exchange for sexual favors.
- - Contractor personnel who connect households to the electricity grid say they can connect female-headed households to the grid in exchange for sexual favors.
- - Contractor personnel raping or otherwise subjecting a local resident to violent sexual acts.
- - Contractor personnel will deny a person access to a construction site if they are not providing a sexual service.
- - Contractor personnel inform the person applying for work under the Contract that he/she will only hire him/her if he/she has sex with him/her.

(2) Examples of sexual harassment in the work context

- - Contractor Personnel make comments about other Contractor Personnel's appearance (positively or negatively) and sexual attractiveness.
- - When Contractor Personnel complain about another Contractor Personnel's comments about his/her appearance, the other Contractor Personnel responds by saying that he/she is "provoking him/her to do so" because of the way he/she dresses.
- - Unwanted touching of Contractor or Employer Personnel by other Contractor Personnel.

The Contractor's Personnel informs the other Contractor's Personnel that he/she will receive a pay raise or promotion if he/she sends him/her nude photos of himself/herself.

Annex 42. Asbestos-containing materials management plan (example)

Applicability

The Asbestos Containing Materials Management Plan (ACMMP) applies to all construction or reconstruction sites and any related areas. Contractors employed by Project are legally responsible for their construction sites and related areas and must follow the provisions of the Project ACMMP within those locations. Specifically, this procedure must be used to ensure the safe handling, removal and disposal of any and all Asbestos Containing Materials (ACM) from those areas.

Immediate action

On discovering ACM on a Project site, the contractor must:

- Stop all work within a 5 m radius of the ACM and evacuate all personnel from this area;
- Delimit the 5 m radius with secure fencing posts, warning tape and easily visible signs warning of the presence of asbestos;
- If the site is in an inhabited area, place a security guard at the edge of the site with instructions to keep the general public away;
- Notify the PIU Safeguards Specialist and arrange an immediate site inspection.

Equipment

To remove asbestos from a construction site, contractors must provide the following equipment:

- Warning tape, sturdy fence posts and warning notices;
- Shovels;
- Water supply and hose fitted with a garden type spray attachment;
- Bucket of water and rags;
- Sacks of clear, strong polythene that can be tied to close;
- Asbestos waste containers (empty, clean, sealable metal drums, clearly labelled as containing asbestos).

Personal Protective Equipment (PPE)

All personnel involved in handling ACM must wear the following equipment, provided by the contractor:

- Disposable overalls with a hood;
- Boots without laces;
- New, strong rubber gloves;
- A respirator is not normally required if there are only a few pieces of ACM in a small area, and if the ACM is damp;
- There must be no smoking, eating or drinking on a site containing ACM.

Decontamination Procedure 1: Removing small pieces of ACM

- Identify the location of all visible ACM and spray each lightly but thoroughly with water;
- Once the ACM is damp, pick up all visible ACM with shovels and place in a clear plastic bag;
- If ACM debris is partially buried in soil, remove it from the soil using a shovel and place it in the plastic bag;
- Insert a large label inside each plastic bag stating clearly that the contents contain asbestos and are dangerous to human health and must not be handled;
- Tie the plastic bags securely and place them into labelled asbestos waste containers (clean metal drums) and seal each drum;
- Soil that contained ACM debris must not be used for backfill and must instead be shovelled by hand into asbestos waste containers;
- At the end of the operation, clean all shovels and any other equipment with wet rags and place the rags into plastic disposal bags inside asbestos waste containers.

Decontamination Procedure 2: Removing ACM-contaminated backfill

- If soil containing ACM debris has inadvertently been used for backfill this must be sprayed lightly with water and shovelled out by hand to a depth of 300 mm and placed directly into asbestos waste containers (i.e. not stored temporarily beside the trench);
- Any ACM uncovered during the hand shovelling must be placed in a clear plastic bag;
- Once the trench has been re-excavated to 300 mm, if there is no visible ACM remaining, the trench may be refilled by excavator using imported clean topsoil.

Disposal

ACM should be disposed of safely at a local hazardous-waste disposal site if available, or at the city municipal dumpsite after making prior arrangement for safe storage with the site operator.

- The Contractor must arrange for the disposal site operator to collect the sealed asbestos waste containers as soon as possible and store them undisturbed at the disposal site.
- At the end of construction Contractors must arrange for the disposal site operator to bury all ACM containers in a separate, suitably-sized pit, covered with a layer of clay that is at least 250 mm deep.

a) Personal Decontamination

At the end of each day, all personnel involved in handling ACM must comply with the following decontamination procedure:

- At the end of the decontamination operation, clean the boots thoroughly with damp rags;
- Peel off the disposable overalls and plastic gloves so that they are inside-out and place them in a plastic sack with the rags used to clean the boots;
- If a disposable respirator has been used, place that in the plastic sack, seal the sack and place it in an asbestos waste container;
- All personnel should wash thoroughly before leaving the site, and the washing area must be cleaned with damp rags afterwards, which are placed in plastic sacks as above.

b) Clearance and Checking-Off

- The decontamination exercise must be supervised by site supervisors (engineering or environmental).
- After successful completion of the decontamination and disposal, the Contractor should visually inspect the area and sign-off the operation if the site has been cleaned satisfactorily.
- The contractor should send a copy of the completion notice to the PIU, with photographs of the operation in progress and the site on completion.

Training

PIU Environmental Specialist may hire the specialized companies to conduct training on ACCMP implementation for Contractors staff and PIU on the implementation of ACCMP. The training will include a session focusing on ACM, which covered:

- Risks of contact with ACM;
- Responsibilities for dealing with ACM on project's construction sites;
- The Project's ACMMP and the Protocol for site clean-up;
- Awareness-raising for the contractor staff.

Cost estimate

Costs incurred by contractors in implementing the ACMMP are included in their budget in ESMP budget