

# Semi Annual Environmental Monitoring Report

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Project №: 50176-  
002  
January – June,  
2022

## Kyrgyz Republic: Issyk-Kul Wastewater Management Project financed by the Asian Development Bank

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For: The Department of Drinking Water Supply and Sewerage Development  
(DDWSSD) under State Agency for Architecture, Construction and Housing and  
Communal Services under the Cabinet of the Kyrgyz Republic (DDWSSD)

Endorsed by: A. Muktarov, Director of the Project Management Office, July 28, 2022

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## Abbreviations

|  |   |
|--|---|
| ADB  | Asian Development Bank  |
| APS  | Architecture and Planning Specifications  |
| APU/ETU                                    | Russian acronym for Architectural and Technical Approval  |
| BOD <sub>5</sub>                           | Biological Oxygen Demand (5 day)  |
| BoQ  | BoQs  |
| BV   | Balykchy Vodokanal  |
| COD  | Chemical Oxygen Demand  |
| DDWSSD                                     | Department of Drinking Water Supply and Sewerage Development under the State Agency of Architecture, Construction, Housing and Communal Services under the Cabinet of the Kyrgyz Republic |
| DSC  | Design and Supervision Consultant   |
| EA   | Executing Agency  |
| EHS  | Environment, Health and Safety  |
| EIA  | Environmental Impact Assessment   |
| EMP  | Environmental Management Plan   |
| ETS  | Engineering and Technical Specifications  |
| GKR  | Government of Kyrgyz Republic   |
| ICB  | International Competitive Bidding   |
| IEE  | Initial Environmental Examination   |
| IFC  | International Finance Cooperation   |
| ISDP                                       | Issyk-Kul sustainable development project   |
| Issyk-Kul<br>Territorial<br>Administration | Issyk-Kul Territorial Administration  |
| IWMP                                       | Issyk-Kul Wastewater Management Project   |
| KVK  | Vodokanal, Karakol  |
| KYRM                                       | Kyrgyz Republic Resident Mission  |
| LARP                                       | Land Acquisition and Resettlement Plan  |
| MNRETS                                     | Ministry of Natural Resources, Ecology and Technical Supervision of Kyrgyz Republic   |
| NTP  | Notice to Commence  |
| OOS  | Russian acronym for Environment Protection  |

|       |   |
|-------|---|
|       | Russian acronym for “Assessment of Environmental Impacts” |
| OVOS  | Project Implementation Unit                               |
| PIU   | Project Management Office                                 |
| PMO   | Public Hearings   |
| PH    | Semi - Annual Environmental Monitoring Report             |
| SAEMR | Site-Specific Environmental Management Plans              |
| SSEMP | Russian acronym for Construction Codes and Regulations    |
| SNiP  | Sanitary Protection Zone                                  |
| SPZ   | Water supply and sanitation                               |
| WSS   | Wastewater Treatment Plant                                |
| WWTP  |   |

### **Currencies**

|                   |                            |
|-------------------|----------------------------|
| <b>Units and</b>  | degree Celsius             |
| °C                |                            |
| ha                | hectare                    |
| km                | kilometres                 |
| m <sup>3</sup>    | cubic meters               |
| m <sup>3</sup> /d | cubic meter per day        |
| mg/l              | milligram per liter        |
| Mg/Ol             | milligram Oxygen per liter |
| MLD               | million liter per day      |
| US \$             | United States Dollar       |

# 1 INTRODUCTION

## 1.1 Preface

1. Recognizing the significant ecological value of Lake Issyk-Kul and its region, the Government of the Kyrgyz Republic is implementing significant reforms in the water supply and sanitation sector. Strategic directions were defined in the context of national development and tourism in Issyk-Kul as a priority component of the economic development of the region and included in the National Development Strategy of the Kyrgyz Republic for 2018-2040 and the Program for the Development of Drinking Water Supply and Wastewater Systems in Settlements of the Kyrgyz Republic until 2026 (Decree of the Government of the Kyrgyz Republic (GKR) dated June 12, 2020, No. 330).
2. Asian Development Bank (ADB) is helping to improve the management of environmental protection and urban services in the region through the implementation of the Issyk-Kul sustainable development projects.
3. In the period between 2009-2017, ADB implemented the Issyk-Kul Sustainable Development Project worth 30 million USD. The project was designed for a long-term period with a phased approach to supporting environmental management and improving the provision of urban public services in the Issyk-Kul region. The first phase of the urban development program was to improve access to drinking water and safe sanitation, including the use of proven technologies for the treatment and disposal of solid and liquid wastes and wastewater. Feasibility studies were prepared for Balykchy, Cholpon-Ata and Karakol for the rehabilitation and construction of drinking water supply and sewerage systems under this project.
4. The current Issyk-Kul Wastewater Management Project (IWMP) thus complements these initiatives by further improving wastewater systems in the two cities, Balykchy and Karakol, significantly improving health, hygiene and sanitation standards.
5. The project was approved by the ADB Board of Directors on 20 November 2018 and Grant and Loan Agreements between the ADB and the GKR were signed on 28 December 2018. The Law of the Kyrgyz Republic No. 60 "On Ratification of the Credit Agreement" dated July 16, 2019 was published in the newspaper "Erkin Too" No. 2019 dated July 19, 2019.
6. The ADB issued Notice to Proceed (NTP) on 16 August 2019 which sets the date of the Project's entry into force and, in accordance with the Grant and Credit Agreements of 28 December 2018, the project is to be implemented from 16 August 2019 to 31 December 2024. Kyrgyz Republic Resident Mission (KYRM) is the body supervising the project
7. Within the scope of Issyk-Kul Wastewater Management Project an Initial Environmental Examination (IEE) report has been prepared by Department of Drinking Water Supply and Sewerage Development (DDWSSD) under State Agency for Architecture, Construction and Housing and Communal Services under the Cabinet of the Kyrgyz Republic for the ADB which was also included in the feasibility report. The final version of IEE was published on ADB's website on September 2018.

8. This report is the 5<sup>th</sup> Semi-Annual Environmental Monitoring Report (SAEMR) for the project. It covers the IWMP activities between the period of 1 January 2022 and 30 June 2022.

## 1.2 Headline Information

9. During the reporting period within the framework of the Project:
- On January 21, 2022, the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Housing and Communal Services under the Cabinet of the Kyrgyz Republic and Impulse-Osh Ltd. signed a contract agreement for Construction of Sewerage Networks of Balykchy, Issyk-Kul Region". Lot 1 "Western section": Extension of sewerage network (Togolok Moldo, Mambetalieva, Ozernaya streets with the total length of 5.34 km).
  - On February 1, 2022, the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Housing and Communal Services under the Cabinet of the Kyrgyz Republic and Profit Express LLC signed a contract agreement for Construction of Sewerage Networks of Balykchy, Issyk-Kul Region". Lot 1 "Eastern section": Extension of sewerage network (Toktosunova, Sharipova, Kaldybaeva streets with the total length of 5.32 km).
  - On March 31, 2022, the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Housing and Communal Services under the Cabinet of the Kyrgyz Republic and Profit Express LLC signed a contract agreement for Construction of Sewerage Networks of Balykchy, Issyk-Kul Region". Lot 1 "Eastern section": Construction of sewage network (total length of 6.71 km) (section №1 - Akhunbaeva street from Lenin to Moscow streets, section №2 - Duisheyeva street from Zhusaeva to Moscow streets, section №3 - Moscow street from Akhunbaeva to Oktyabrskaya streets).
  - On April 5, 2022, the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Housing and Communal Services under the Cabinet of the Kyrgyz Republic and Consortium of Inzhenernaya Zashchita and Polymer Snab Asia Ltd. signed a contract agreement for Construction of Sewerage Networks in Karakol Lot 2 "Northern section": Construction of sewage network (total length of 5.94 km) (section №4 - Oktyabrskaya street from Gebze to Kuchukova streets, section №2 - Zhusaeva street from Przhevalsky to Shorukova streets).
  - On March 18, 2022, Consortium of CCCC Tianjin Dredging Co, Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co held a public consultation on Environmental Impact Assessment (OVOS) and Social Safeguards for construction of Balykchy Wastewater Treatment Plant (WWTP) under Issyk-Kul Wastewater Management Project in Balykchy City Hall. Minutes of the Public participation meeting is attached.

- On March 31, 2022, a public consultation was held on the Environmental impact assessment and Social Safeguards for the construction of a wastewater tank in Pristan-Przhevalsk, 200 meters of discharge pipeline and modernization of 28 manholes on the main sewage collector in Karakol city. The public participation meeting was held in Karakol City Hall. Minutes of the Public participation meeting is attached.
  - During the reporting period environmental safeguards trainings for representatives of Impulse Osh Ltd. and Profit-Express Ltd. on ADB's requirements and national regulations was conducted on 30 March 2022.
  - Environmental and Social safeguards trainings for the contractors of Karakol networks on ADB's requirements and national regulations was conducted on 17 May 2022.
10. To secure sustainable and reliable wastewater treatment services in Balykchy and Karakol, sewerage networks will be improved and expanded. IWMP is expected to achieve the following outputs:
    - Balykchy and Karakol wastewater systems improved.
    - Improved capacity of “Vodokanals”
    - Septage management services improved, and sanitation and hygiene awareness increased.
  11. Today, the coverage of the population with sewage treatment plants is at a low level: 35% in Balykchy and 45% in Karakol
  12. In this regard, the Issyk-Kul Wastewater Management Project focuses on sewage treatment facilities, expansion of sewerage networks, considering the connection of an additional 850 households in Balykchy city and 1200 households in Karakol city.
  13. The implementation of this activity will increase the coverage rate to an estimated 45% in Balykchy and 60% in Karakol.
  14. Issyk-Kul Wastewater Management Project has been classified as environmental assessment category B according to ADB procedures, the impacts of the subproject were assessed in the Initial Environmental Examination, conducted according to ADB Safeguard Policy Statement (2009). The project envisages temporary environmental impacts during the construction phase mainly due to dust, noise, vibration, solid waste and movement of construction equipment, as well as obstructed traffic. These impacts can be controlled, minimized and mitigated.
  15. According to the General Technical Regulation on Environmental Safety, Regulation on Environmental Impact Assessment (OVOS) procedure (KR Governmental Resolution No. 60 of 13.02.2015), Regulation on State Environmental Expertise procedure (KR Governmental Resolution No. 248 of 07.05.2014), during the detailed design period, draft Environmental Impact Assessment (OVOS) Reports (Russian acronym for “Assessment of Environmental Impacts”) were developed and state environmental expertise was conducted by Ministry of Natural Resources, Ecology and Technical



Supervision of the Kyrgyz Republic (MNRETS), and territorial departments on environment protection, and positive conclusions were obtained on the following:

- Environmental Protection Section of the design "Modernization and Rehabilitation of Balykchy Municipal Vodokanal's Wastewater Treatment Plant at Bereke Site, Kok- Moinok Aimak, Ton District".
  - Design of the sanitary protection zone of Balykchy Municipal Vodokanal's Wastewater Treatment Plant
16. The DSC provided support to the contractors of Balykchy and Karakol networks during preparation of their SSEMPs.
  17. The PMO approved SSEMPs of Impulse-Osh Ltd. and Profit-Express Ltd. (Lot 1 and Lot 2 in Balykchy), and the construction of sewage networks in Balykchy started in April 2022.
  18. The PMO approved SSEMPs of Minur Ltd. and the Consortium of Inzhenernaya Zashchita Ltd. and Polymer Snab Asia Ltd. (Lot 1 and Lot 2 in Karakol), and construction of sewage networks in Karakol city started in May 2022.
  19. During the reporting period the following activities have been carried out within the scope of the project:
    - The contract agreements are signed by the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction, Housing and Communal Services under the Cabinet of Ministers of the Kyrgyz Republic and the contractors.
    - During the reporting period, contractors (LLC "Impulse-Osh" and LLC "Profit-Express" (Lot 1 and Lot 2 in Balykchy) and LLC "Minur" and the JV LLC "Inzhenernaya Zashchita" and LLC "Polymer Snab Asia" (Lot 1 and Lot 2 in Karakol) prepared the SSEMPs with the assistance of the DSC, and the PMO approved those SSEMPs. Civil works commenced in April in Balykchy and in May in Karakol.
    - The Balykchy WWTP design and construction contractor (Consortium of CCCC Tianjin Dredging Co, Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co), with the assistance of DSC, prepared a draft SPZ for the Balykchy WWTP, which received a positive conclusion from the state environmental expertse, issued by the Issyk-Kul Territorial Department of the Ministry of Natural Resources, Ecology and Technical Supervision
    - Activities for updating Balykchy IEE have been completed.
    - Sludge Analysis and Sludge Management Plan has been developed, which is being finalized and updated;
    - Plan for Environmental Safeguards have been developed (According to the ADB's letter of no objection dated May 23, 2022, the DSC has developed initial tasks for a newly selected international environmental specialist and was submitted to ADB on June 29, 2022).
    - The Consortium of CCCC Tianjin Dredging Co., Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and

Research Institute Co conducted the public consultations on "Assessment of the impact on the environment and social protection measures during construction Balykchy Wastewater Treatment Plant (March 18, 2022).

- A public consultation was held on the Environmental impact assessment and Social Safeguards for the construction of a wastewater tank in Pristan-Przhevalsk, 200 meters of discharge pipeline and modernization of 28 manholes on the main sewage collector in Karakol city (March 31, 2022)
- Training on Environmental and Social safeguards were provided to the contractors of Karakol and Balykchy sewerage networks by PMO and DSC. The training was conducted by O.V. Zinina, DSC National Environmental Specialist, and Y.Y. Dolgov, DSC Social Safeguards Specialist, and K.Sh. Zhundubaev, PMO Environmental Specialist also took part in the training.

## 2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES

### 2.1 Project Description

20. The Issyk-Kul Wastewater Management Project is aimed to maintain the sensitive ecosystem balance of Issyk-Kul Lake, improve and expand access to reliable, sustainable and affordable sewerage services in Balykchy and Karakol, and provides the construction and expansion of existing wastewater treatment systems, strengthening institutional capacity and increasing the sustainability of water supply and sanitation services (WSS) in Balykchy and Karakol (see the location of two cities is shown in Рисушке 2-1).



Source: Esri, 2020

**Figure 2-1 Location of Project Towns of Balykchy and Karakol**

21. The project outcomes should ensure (i) improved sewerage and wastewater treatment systems in the cities of Balykchy and Karakol, (ii) strengthened institutional capacity of Vodokanal Municipal Enterprises, and (iii) improved septic sludge management and sanitation.
22. The project envisages the construction or rehabilitation of sewerage networks and treatment facilities, including WWTP, pump stations, pipelines and related infrastructure, which will significantly improve health, hygiene and sanitation standards.
23. This Project will increase access to potable water and safe sanitation services, including use of proven technologies for treatment and disposal of solid and liquid waste in the cities of Balykchy and Karakol and includes three components;

Component (A): Wastewater Treatment and collection.

Component (B): Enhancing Vodokanals institutional and service-oriented capacity; and

Component (C): Improve awareness for public health implications and wastewater management in Balykchy and Karakol.

**Balykchy Sewerage Network Extension:**

24. Currently, 4156 households and 106 commercial/industrial/institutional/tourism organizations are connected to the sewerage system in Balykchy. The existing sewerage network consists of 64 km of non-pressure sewers built in the 1970s and currently serves about 40% of the population. IWMP will provide 10.6 km of sewer networks on six streets, which will connect about 4015 additional households to the sewer network.

**Karakol Sewerage Network Extension:**

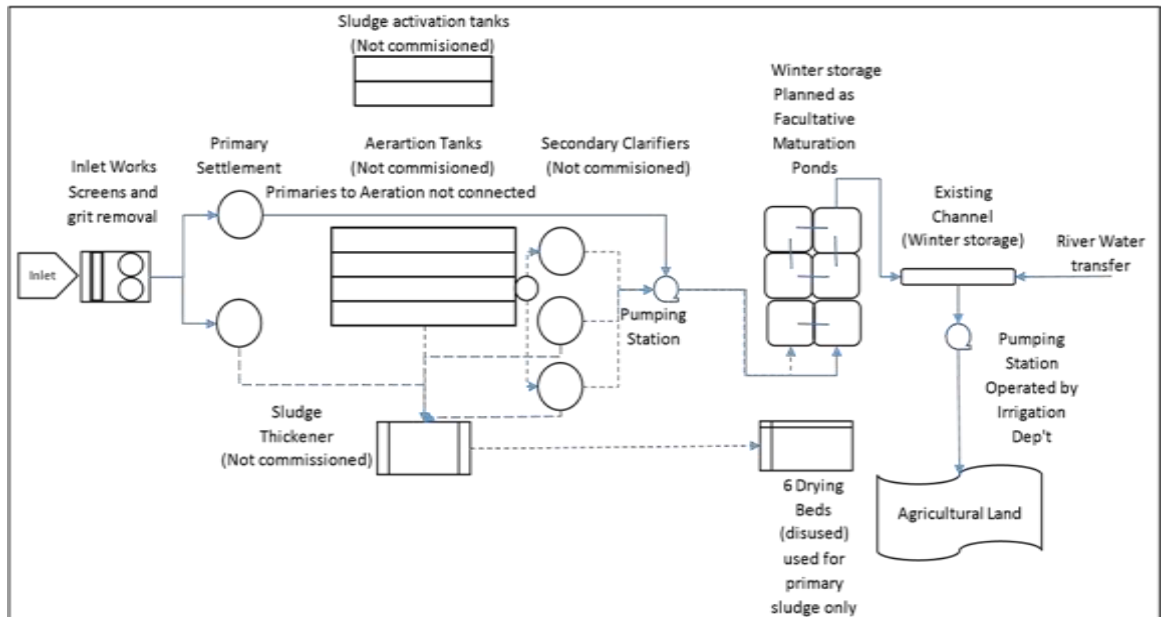
25. About 38% of all households in Karakol are connected to the sewage system, most of which live in multi-story buildings. Currently, about 25 000 people (7301 households) use services of a centralized sewage system. The length of the sewerage network of the city is approximately 110 km. In addition, the municipal enterprise “Karakol Vodokanal” provides sewerage services to 38 budget organizations, 251 commercial enterprises and 1 industrial enterprise. IWMP will provide 12.7 km of sewer networks on six streets, which will connect about 3248 additional households (55%) to the sewer network.

**Construction of a Pump Station (PS-4) at Pristan, Karakol city:**

26. In addition to the non-pressure sewerage system in Karakol, the village of Pristan (TSU No. 8) is served by a gravity-pressure combined system. This system includes 4 pump stations, 3 of which were rehabilitated under the first phase of Issyk-Kul Sustainable Development Project (IKSDP). The fourth sewage pump station is located in close proximity to Issyk-Kul Lake and is in a semi-ruined non-operating stating. Due to less amount of wastewater collected from Pristan sewerage network and topography of the pressure line to PS-2, it was agreed to construct 50m<sup>3</sup> receiving tank for wastewater at the area of sewage pump station No. 4 and waste water will be transported to PS-2 by vacuum trucks.

## **Balykchy WWTP Construction**

27. The existing wastewater treatment plant is located in the 5 km northwest of the center of Balykchy city and were constructed in 1980s. The actual quantity of influent wastewater received by WWTP has not been measured
28. A general scheme of the existing Balykchy WWTP has been given at the Figure 2 2. As it has been indicated in the figure the treatment system designed to use the conventional active sludge process to treat the wastewater, including facultative ponds for tertiary treatment purposes.



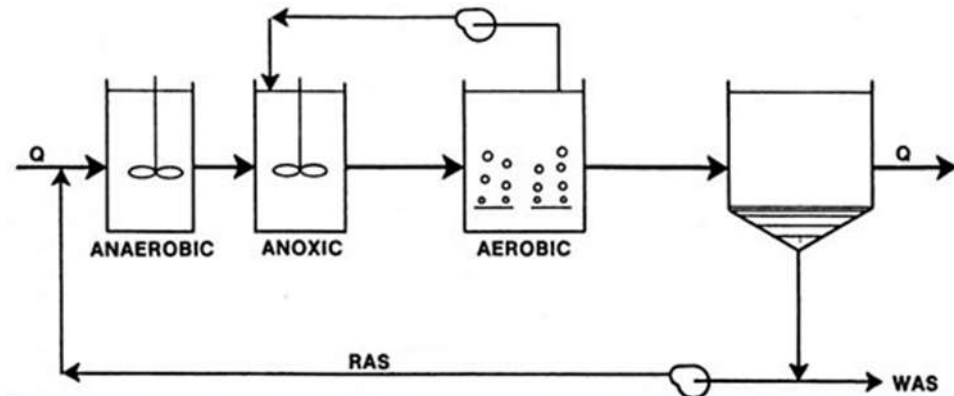
**Figure 2 2 Schematic Illustration of Balykchy WWTP processes**

The wastewater treatment plant in Balykchy has been designed and will be built to handle 4,200 m<sup>3</sup>/day of incoming wastewater. The technological process includes a stage of mechanical treatment, consisting of coarse cleaning, fine cleaning and sand removal, biological treatment and sludge drying.

The biological treatment unit is an integrated wastewater treatment tank designed for the Project, which consists of a modified A2O biochemical tank, a sludge pump tank, a secondary settling tank, a secondary lift pump tank.

The part of process treatment, also known as the biochemical processing part of the modified A2O biochemical tank, will be a reinforced concrete structure consisting of two series, and each series will include an anaerobic tank, anoxic tank and an oxide tank

### Schematic structural diagram for A2O



29. The typical useful service life for most mechanical facilities is 15 to 20 years. Useful service life for most electrical gear and variable frequency drives ranges from 15 to 30 years. After Approximately 40 years of its construction Balykchy WWTP has lost its functionality because of improvements or maintenance practices that could not be implemented. Balykchy WWTP has been operated by Balykchy Vodokanal (BVK). Because of chronic and severe financial shortages BVK faced, the operation of Balykchy WWTP has been kept going by employees working without the benefit of proper written operating procedures, maintenance registers, appropriate tools and equipment, or professional training. Besides this, there is a lack of funding and weak administrative support for improving existing conditions. The new Balykchy WWTP plant will be designed and constructed with a project delivery method of design and build construction.

Based on the results of tender No. IWMP-D&B-002 for the design and construction of the Balykchy WWTP, on May 28, 2021, a contract was signed with the consortium CCCC Tianjin Dredging Co, Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co.

In order to comply with the requirements of national legislation and the ADB's Safeguards Policy (July, 2009), during contract negotiations, training and subsequent meetings, the PMO repeatedly notified the Balykchy WWTP Design and Construction Contractor of upcoming environmental safeguards activities, where phased work is given during the period design, including on the need to obtain approval of the SSEMP, an updated IEE, all permits and state expertise conclusions, including environmental impact assessments prior to construction work.

However, during the current period, the Contractor noted violations of the requirements of the ADB Safeguard Policy and Contractual obligations.

Thus, the ADB Review Mission (April 25-May 16, 2022), when visiting the Balykchy WWTP, noted the establishment of a construction camp from light structures, felling of plantations and demolition of buildings without updating the Balykchy IEE and approval of th SSEMP by EA. In this regard, on the recommendation of the ADB Mission, the Contractor developed and submitted to the PMO the SSEMP for temporary

construction works at the Balykchy WWTP, which was agreed with ADB and approved by the EA on May 24, 2022.

In addition, the ADB Safeguard Review Mission (June 13-July 16, 2022) during its visit to the Balykchy WWTP noted that excavation works for the reservoir have been started without updating Balykchy IEE and approval of SSEMP by EA. In this regard, the ADB's Mission instructed the DSC to conduct an audit of all earthworks, cost calculations, determine the availability of all permits and submit a Corrective Action Plan for consideration, which were submitted to ADB.

The PMO submitted to ADB for review the draft SSEMP for the Balykchy WWTP and the updated IEE for Balykchy on 16 and 18 June 2022, respectively.

During the current period, the Contractor has received positive conclusions from the state environmental expertise with recommendations for the following design: "General reservoir", "Administrative building", "Repair shop", "Dosing, aerator, boiler house", "Averaging tank, ultraviolet disinfection channel, platform for sludge drying, drainage pumping station", "Construction of grids, SPS, sand separator" and "Sanitary protection zone of Balykchy WWTP", issued by the Issyk-Kul regional department of Ministry of Natural Resources, Ecology and Technical Supervision (attached).

### **Karakol WWTP Reconstruction**

30. The existing wastewater treatment plant is located in the northern suburb of the city and were constructed in 1980 of the last centuries. Currently, the actual quantity of influent wastewater received by WWTP has not been measured, however, according to estimates of the Karakol Vodokanal (KVK), the average existing flow is 7 500 m<sup>3</sup>/day with the influent flow of about 6 000 m<sup>3</sup>/day in the winter and 12 000 m<sup>3</sup>/day in the summer.
31. New Karakol WWTP will be designed and constructed according to the project implementation method "design and build".

### **Sludge Management**

32. The sludge accumulated in Balykchy and Karakol wastewater ponds and seasonal irrigation pond of Karakol decreases the storage capacity of the ponds. The sludge sampling and analysis plan, including parameters, was agreed with ADB and approved by ADB in July 2021. In October 2021, the laboratory with international accreditation "Çevre Endüstriyel Analiz Lab. Hizmetleri Tic.A.Ş", Istanbul, Turkey and the Karakol Laboratory of the Department of Disease Prevention and State Sanitary and Epidemiological Supervision under the Ministry of Health of the Kyrgyz Republic carried out work on sampling sludge from the oxidation ponds of the WWTPs in Karakol and Balykchy and the SSP of Ak-Suu District Water Management Department to analyze for the content of heavy metals, toxicity and pathogenic microorganisms. On December 2 2021 the DSC submitted to the PMO a draft Evaluation Report for Sludge Analysis Results (the Evaluation Report), which on December 6, 2021 was submitted to the ADB for review and approval. The DSC started updating of the earlier prepared Sludge Management Program (SMP) and submitted it to the PMO for review in the first Quarter of 2022. Later, upon request by ADB and PMO, some other alternative solutions have

been studied by DSC and alternative proposal of the draft SMP has been submitted for review which is under review of ADB.i

### **Update of IEE**

33. This Initial Environmental Examination (IEE) has been prepared in accordance with ADB’s Safeguard Policy Statement of June 2009 (SPS 2009), the Kyrgyz Republic’s Law on Environmental Protection, 1999, and other relevant laws, regulations and requirements.

The objective of the IEE is to (i) identify and assess potential impacts and risks from project implementation on the physical, biological, physical cultural and socio-economic environments of the project area, and (ii) recommend measures to avoid, mitigate and provide compensation for adverse impacts, while enhancing positive impacts.

34. During the project implementation, it was decided to updated IEE and divide into two separate documents for Balykchy and Karakol each. In April and May 2022, meetings were held with ADB on the Balykchy IEE update and the scope of the document. By the current period, the draft IEE was sent to ADB on June 18, 2022 to receive useful recommendations before further and qualitative updating of the document.

## **2.2 Project Contracts and Management**

35. A list of main organizations involved in the project and relating to Environmental Safeguards is given Table 2-1 and illustrated at Figure 2-4 Organogram of Environmental Safeguards of IWMP. It includes names of borrower, executing agency and Design and Supervision Consultant of IWMP and names and contact details of environmental staff of PMO and DSC and contractors.

**Table 2-1 Environmental Safeguards of IWMP**

|  |   |
|--|---|
| <b>Borrower</b>                                | Ministry of Finance of the Kyrgyz Republic  |
| <b>Executing Agency</b>                        | Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Housing and Public Utilities under the Cabinet of Ministers of the Kyrgyz Republic |
|  | Project Management Office (PMO)   |
| PMO Environmental Specialist                   | Mr. Kylychbek Zhundubaev  |
| email  | <a href="mailto:environmental@iwmp.kg">environmental@iwmp.kg</a>  |
| Tel:   | + 996 554 66 54 55  |
| <b>Design and Supervision Consultant (DSC)</b> |   |
| Organization:                                  | Temelsu International Engineering Services Inc  |



|  |  |
|--|--|
| DSC International Environmental Specialist                     | Mr. S. Gurtan Yazici                                   |
| email  | gurtanyazici@gmail.com                                 |
| Tel:   | +996 706 490 063                                       |
| DSC National Environmental Specialist:                         | Mrs. Olga Zinina                                       |
| email  | <a href="mailto:zinola@yandex.ru">zinola@yandex.ru</a> |
| Tel:   | +60 532 644 70 28                                      |
| <b>Contractors</b>   |  |
| Impulse-Osh Ltd.   | Contractor for Lot-1 in Balykchy                       |
| Chief Engineer   | B. Latikhanov  |
| email:   | impuls_osh@mail.ru                                     |
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| Quality Engineer   | Bekmamat Japiev  |
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| Health, Safety & Environment Staff                             | Bekmamat Japiev  |
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| Tel:   | +996556032121  |
| Profit Express Ltd.  | Contractor for Lot-2 in Balykchy.                      |
| Chief Engineer   | Urmat Beishenaliev                                     |
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| Tel:   | +996703333421  |
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| Health, Safety & Environment Staff                             | Zhyldyz Moldosanova                                    |
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| Tel:   | +996312973075  |
| Minur LLC  | Contractor for Lot-1 in Karakol                        |
| Site supervisor  | Samatbek Kaldybaevich Jakypbekov                       |
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| Foreman  | Kanatbek Toktogonovich Mamyrbayev                      |
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| Health, Safety & Environment Staff                             | Bekzat Shergazievich Dadybaev                          |
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| Tel:   | +996700376283  |
| Consortium of Inzhenernaya Zashchita Ltd and Polymer Snab Ltd. | Contractor for Lot-2 in Karakol                        |

|                                    |                          |
|------------------------------------|--------------------------|
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|  |  |
|--|--|
| <u>Consortium of Contractor CCCC Tianjin Dredging Co., Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co., Ltd Joint Venture</u> | Contractor for Balykchy WWTP                         |
| Project Manager  | Yu Zhiping<br>+996770445355                          |
| Chief Civil Engineer   | Beishenbai Zhanboev<br>+996504100125                 |
| Health and Safety Staff  | Yuan Anfeng<br>+996774415210                         |
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| Construction Engineer  | Chen Jian<br>+996507118520                           |
| Environmental Engineer   | Rakat Kysanov<br>+996707659153,<br>kysanov68@mail.ru |

36. The following organizations and/or staff are responsible for environmental monitoring and supervision during the design and construction:
- a. PMO Environmental Specialist
  - b. International and National Environmental Specialists of DSC
  - c. Contractor's environmental managers and/or environmental and safety officer responsible for environmental protection issues
  - d. Authorized state bodies and their territorial divisions: State Agency of Architecture, Construction and Housing and Communal Services under the Cabinet of Ministers of the Kyrgyz Republic (SAACCHS), Department of Drinking Water Supply and Sewerage Development under the State Agency of Architecture, Construction and Housing and Communal Services under the Cabinet of Ministers of the Kyrgyz Republic (DDWSSD), Project Implementation Units in Karakol and Balykchy (PIU), Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic (MNRETS), Department for Disease Prevention and State Sanitary and Epidemiological Control and the Karakol Interdistrict Center for Disease Prevention

and State Sanitary and Epidemiological Control under the Ministry of Health KR (MoH), Ministry of Emergency Situations (MES).

37. Contractor and its EHS staff are responsible for preparation and implementation of SEMP.

38. International and National Environmental Specialists of DSC undertakes the technical oversight for the delivery of all safeguard measures, ensures that EMP mitigation and monitoring measures implemented, and compliance reporting completed, including in accordance with ToR:

Under the leadership of the PMO's Chief Technical Adviser, the International Environmental Specialist will perform the following tasks:

Conduct surveys necessary to update the IEE;

- Based on the WWTP and sewerage designs to update the OVOS and EMP when required. Update the IEE and EMP in case of any changes in the scope of work;
- Carry out spot checks of construction works for compliance with the requirements of the EMP/SSEMP and recommend corrective actions as necessary;
- Carry out environmental surveys during construction to determine whether there has been a negative impact on the quality of the environment;
- Prepare and update the Environmental Management and Monitoring Plan (EMMP), if necessary, and define the indicators to be monitored by the public authority;
- Train PIU and PMO staff in monitoring and mitigation;
- Assist PMOs and PIUs in conducting baseline environmental surveys;
- Assist the PMO and the PIU in conducting environmental surveys twice a year after the start of the project and conducting a final environmental audit at the end of the project;
- Conducting regular monitoring of compliance by the WWTP Design and Construction contractor with the requirements of the EMP/SSEMP and any other safeguards documents;
- Organization of public hearings constantly held throughout the implementation of the project;
- Preparation of semi-annual environmental monitoring reports for approval by the PMO and ADB.
- Ensure that contractors comply with the EMP and SSEMP and other safeguards documents.
- Taking action on any environmental complaints received and ensuring that they are dealt with in accordance with the GRM.

Local Environmental Specialist of the DSC:

- Providing support in updating the IEE and EMP.
- Carrying out activities for the passage of environmental expertise, obtaining permits, approvals
- Assistance and provision of the necessary input data for the implementation of the EMP, using the compliance monitoring checklist included in the draft EMP.
- Providing information to an international environmentalist to oversee the monitoring of baseline data prior to commissioning, following the Mitigation and Monitoring Guidelines provided in the IEE.

- Assist an international environmental specialist to conduct water, air and soil analysis as specified in the EMP.
  - Monitoring the implementation of the EMP and SSEMP.
  - Monitoring and reporting on the effectiveness of waste management resulting from the dismantling of components of existing facilities subject to refurbishment, paying attention to the management of disposed waste prior to its disposal or recycling and landscaping.
  - Proposal and development of reporting formats for further use by the national social and environmental officer to ensure that the monitoring results are displayed in the quarterly, semi-annual, annual and project completion reports for submission to the PMO, PIU and ADB as required.
  - Provide information to the PMO when working with the contractors in the implementation of EMP and oversee the Contractor's compliance with environmental mitigation measures.
  - Preparation of specifications to be attached to the Contractor's bills of quantities, who will be responsible for: i) implementation of the EMP in accordance with the instructions of the IEE, and ii) environmental monitoring, including measurement and monitoring of dust and air pollution during construction in accordance with the Contractor's Quarterly Compliance Checklist.
  - Assist the PMO in working with the traffic authority to prepare emergency traffic plans and temporary traffic diversions during construction.
  - Provide guidance to the design and construction contractor on the preparation of a sludge management plan for the next 6 months prior to commissioning of the treatment plant; organizing dialogue with and involvement of the PIUs to support due accountability for cooperative ecological sludge management during the long-term work of CBS.
  - Preparing a methodology and checklist for EMP supervision, as well as a related report to be prepared by the Contractors, and assisting the PMO and PIU in receiving such reports in a timely manner.
  - Providing materials and methodology for PMOs and vodokanals to: i) prepare and maintain a grievance redress mechanism, ii) establish a grievance redress committee (GRC) and iii) conduct performance monitoring; to ensure that: (i) the GRC has a strong representation of women, and (ii) the grievance process is effectively implemented as planned and scheduled in the EMP.
  - Preparation of additional studies, including socio-economic, geographic, technical, environmental and social safeguards, as needed.
  - Providing information for the preparation of periodic and annual reports, if necessary.
  - Assisting the international consultant in any necessary tasks.
39. PMO Environmental Specialist is responsible for overall management of the implementation of this project in regard to environment protection. Oversees application of safeguard measures for the project as a whole. He draws on consultants to provide inputs to EMP preparation, develops and delivers EMP-specified training, and under the Contract is responsible for the implementation of environmental protection measures in accordance with the provisions of the Agreements signed with the donor, which will include assistance in the preparation and evaluation of bidding documents for

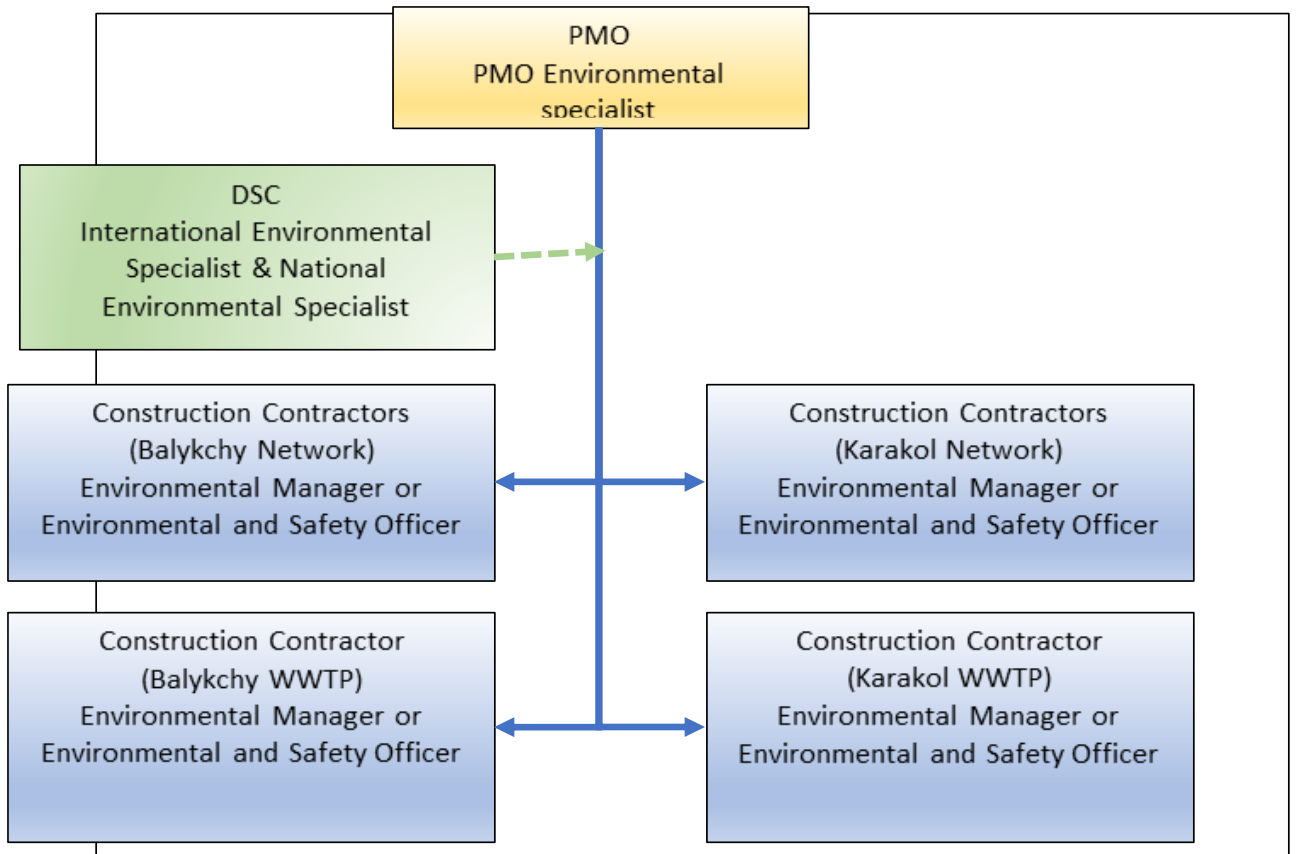
construction in order to ensure the inclusion of mitigation measures as specified in the EMP, as well as:

Coordination and organization of the work during the Project implementation in terms of compliance with ADB's SPS, 2009, Environmental Assessment Guidelines 2009 and environmental laws of Kyrgyz Republic;

- a. Liaison and coordination with Engineer and Contractor (including international environmental expert(s) working under Supervision Engineers contract) on all environmental issues under the project, particularly implemented in ecologically sensitive zones;
- b. Coordination of public consultations on environmental issues conducted by Consultant with participation of all stakeholders;
- c. Control over the compliance with national legislation by the Contractor on all environmental issues and nature management under projects implementation;
- d. Coordination of timely update of EIA, IEE and access to them on the project and DDSWWD website;
- e. Coordination of preparation, review and implementation of Environmental Management Plan (EMP);
- f. Coordination of environmental monitoring system during construction works and post-project period;
- g. Supervision over implementation of environmental protection policy and action plan on sites;
- h. Participate in procurement activities to ensure that EMPs are included in bidding documents for all contracts;
- i. Responsible for regular and effective bilateral relations with public and NGO concerning environmental issues under the project being implemented;
- j. Responsible for preparation of semi-annual monitoring reports and reflecting environmental issues in the quarterly progress reports.
- k. Environmental surveys and preparation of reports on project environmental impacts during implementation;
- l. Development and coordination of environment impact assessment;
- m. Participation in evaluation of EOIs of consultants and bidding proposals of contractors;
- n. Support of acceptable standards of environmental impacts;
- o. Maintenance of business cooperation, requesting, collecting and analyzing information on environmental issues received from all parties involved in project implementation;
- p. Render assistance in project monitoring, assessment of ecological impacts, in preparing project monitoring reports on all key indicators;
- q. Submission of regular information on project implementation progress and its outcomes on environmental aspects to PMO and other stakeholders;
- r. Identification of problems and obstacles encountered during project implementation;
- s. Daily monitoring of consultants' and contractors' performance under the project regarding timeliness of environmental reports submission and compliance of these reports with TOR;

- t. Participation in all project meetings between Client and Contractor, and representation of environmental issues at such meetings (this is crucial to keep safeguards in the daily information flow and decision making processes);
  - u. Familiarization with the relevant environmental documentation of the project such as the Environmental Management Plan (EMP), as well as other projects when needed, and supervision of their due implementation by the responsible parties;
  - v. Liaison with environmental authorities;
  - w. Participate in preparation of Monthly, Quarterly and Annual progress reports related to project implementation.
  - x. To adhere to the highest ethical standards, have zero tolerance attitude to fraud, corruption and other integrity violations, and report any violation of ADB's Anticorruption Policy to OAI and/or appropriate government authorities.
  - y. Execution of other official commissions of the PMO Director.
40. The PMO carries out overall coordination, monitoring and control to ensure Contractors compliance of the with the norms and requirements of the national environmental legislation, the ADB's Safeguards Policy Statement and prepare analytical documents and reports.
41. DSC International Environmental Specialist (Mr. S. Gurtan Yazici) and DSC National Environmental Specialist (Mrs. Olga Zinina) assist the PMO Environmental Protection Specialist in coordinating and overseeing design, construction supervision and monitoring activities under the Project based on the contract, ToR, and the environmental specialists of the DSC are supposed to:
- (i) Confirm and refine all sub-project components, identify, refine and conduct necessary additional studies and surveys as needed;
  - (ii) Prepare a Quality Assurance System to be used by the project, both during the design phase and during the construction phase;
  - (iii) Update IEE and EMP for detailed design of sub-project components;
  - (iv) Assist the PMO and the PIU by providing information about the project in planning and managing the public awareness components.
  - (v) Provide the necessary details of the progress report to be included in the monthly, quarterly, semi-annual (on safeguards), and annual reports to be submitted to ADB.
  - (vi) Monitor construction methods and quality control,
  - (vii) Record measurements according to the procedures established by the Government.
  - (viii) Participate in third party inspections as required,
  - (ix) In accordance with the environmental management and monitoring plan prepared, to plan and organize a "basic" sampling and analysis program for the wastewater inflow;
  - (x) Provide day-to-day oversight of the contract;

- (xi) Supervise construction and supervise concluded contracts for sewerage and rehabilitation works.
  - (xii) Analyze data to determine impacts on nearby surface and groundwater resources.
  - (xiii) Assess the suitability of water quality and assess the chemical quality of the earthworks water.
  - (xiv) Provide guidance on the preparation, implementation and monitoring of Environmental Management Plans (EMPs) and Site-Specific Environmental Management Plans (SSEMPs) in the pre-construction and construction periods. This includes assistance in preparing monitoring reports;
  - (xv) Prepare additional studies, including socio-economic, topographical, technical, environmental and social safeguards, as needed.
42. Contractor's HSE Engineers carry out the activities stipulated in SSEMPs, monitoring and control to ensure Contractors' compliance with the norms and requirements of national environmental legislation and ADB Safeguards Policy Statement.
43. In addition, HSE Specialists of Contractors will:
- ensure that the construction methods are satisfactory, with reference to the technical requirements of ADB's Environmental Guidelines.
  - undertake periodic review and reporting on the implementation of the SSEMP.
  - inspect construction equipment; safety of the works, property, personnel, and public; and the recommendations of the SSEMP.
  - supervise and monitor the implementation of environmental mitigation measures required by SSEMP and in the event of occurrence of non-compliances and unexpected environmental impacts develop corrective action plan.



**Figure2-3 Organogram of Environmental Safeguards of IWMP**



## **2.3 Project Activities During Current Reporting Period**

### **2.3.1 Extension of Balykchy and Karakol Sewerage Networks**

44. After signing a contract agreement on January 21, 2022, the Environmental Specialist of Impulse-Osh Ltd. prepared SSEMP which has been reviewed by DSC and approved by PMO. In April, upon receipt of building permit, the company mobilized and began construction work in Balykchy. During the reporting period, for Lot 1 (5.34 km), the Contractor LLC "Impulse-Osh" performed construction and installation works on laying pipelines from polyethylene pipes with a length of 1909 meters in the amount of 187,662.98 US dollars. Construction and installation works were completed by 39.4%.
45. After signing a contract agreement on February 1, 2022, a specialist of Profit Express Ltd. prepared SSEMP which has been reviewed by DSC and approved by PMO. In April, upon receipt of building permit, the company mobilized and began construction work in Balykchy. During the reporting period, for Lot 2 (5.32 km), the Contractor LLC "Profit-Express" performed construction and installation works on laying pipelines from polyethylene pipes with a length of 3186.9 meters in the amount of 270,356.66 US dollars. Construction and installation works have been completed by 48.6%.
46. After signing a contract agreement on March 31, 2022, a specialist of Minur Ltd. prepared SSEMP which has been reviewed by DSC and approved by PMO; and upon receipt of building permit, the company mobilized and began construction work in the city of Karakol. For Lot 1 ((6.71 km), the Contractor LLC "PP Minur" during the reporting period completed construction and installation work on laying pipelines from polyethylene pipes with a length of 1009 meters in the amount of 146,336.47 US dollars. Construction and installation work was completed by 26.7%.
47. After signing a contract agreement on April 05, 2022, a specialist of the Consortium of Inzhenernaya Zashchita prepared SSEMP which has been reviewed by DSC and approved by PMO; and upon receipt of building permit, the company mobilized and began construction work Karakol city. During the reporting period, construction and installation works were carried out on laying pipelines from polyethylene pipes with a length of 1088 meters in the amount of 183,469.00 US dollars. Construction and installation works have been completed by 33.4%.

### **2.3.2 Balykchy WWTP:**

48. During the reporting period CCCC Tianjin Dredging Co., Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co., Ltd Joint Venture developed the detailed design. Also, sections "Environmental Section" and SPZ design were developed, which passed the State Ecological Expertise and received a positive conclusion. (Appendix 5).

## Summary Description of Design Solutions

49. According to the bidding documents, the year when the design level of WWTP will be reached is 2028, the design average flow- is 4200 m<sup>3</sup>/day. The drainage system in Balykchy is a combined system of rainwater and wastewater. The peak flow during the rainy season is 180 m<sup>3</sup>/h, in addition, 77 m<sup>3</sup>/day of wastewater come from the septics.

**Table 2-2. Design parameters of influent (unit.: mg/l, except for pH and water temperature)**

| Indicators     | pH  | COD | BOD 5 | Suspended solids | Total Nitrogen | Ammonium Nitrogen | Total Phosphorus | Temperature of water |
|----------------|-----|-----|-------|------------------|----------------|-------------------|------------------|----------------------|
| Designed value | 6-8 | 493 | 235   | 320              | 65             | 32                | 5                | 7~22°C               |

50. At the phase of designing of the WWTP, the treatment option was adopted as Anaerobic-Anoxic-Oxic/Anaerobic-Anoxic-Oxic process (A<sup>2</sup>/O), provided that the pollution load do not exceed the above standards.
51. Design Water Quality and Treatment Degree According to the requirements of the bidding documents and the main indicators of WWTP effluent quality, the tender for this facility was divided into 2 options: (i) the application of standards in the bidding documents based on the Regulations of the Kyrgyz Republic + fishery water / irrigation water quality rules; (ii) the application of standards in the bidding documents based on Directive 91/271/EEC.
52. This Directive concerns the collection, treatment and disposal of urban wastewater as well as the treatment and disposal of wastewater from certain industries. The purpose of this Directive is to protect the environment from the harmful effects of aforementioned wastewater discharges.
53. This option is intended to implement standards in the bidding documents, Approved by PMO, based on EC directive 91/271/EEC rules. Main parameters of WWTP effluents are given in Table 2-3

**Table 2-3. Main design parameters of WWTP effluents unit: mg/l, except for pH and water temperature**

| Indicators         | pH    | COD      | BOD5     | Suspended solids | Total Nitrogen | Ammonium Nitrogen | Total Phosphorus | Temperature of water |
|--------------------|-------|----------|----------|------------------|----------------|-------------------|------------------|----------------------|
| Designed value     | 6-8,4 | ≤ 125    | ≤ 25     | ≤ 35             | ≤ 15           | Not used          | ≤ 2              | Not used             |
| Removal efficiency | /     | ≥74,65 % | ≥89,36 % | ≥89,06 %         | ≥76,92 %       | /                 | ≥60,00 %         | /                    |

54. Wastewater parameters is a requirement that the wastewater treatment plant will meet, and our entire design is based on this EU standard for wastewater in accordance with the contract.

55. The main facilities of Wastewater Treatment Plant include: discharge station from the sewage trucks, inlet regulation pool, coarse screen building, wastewater lift pumping station, fine screen room, cyclone sand trap, comprehensive wastewater treatment basin (including a biochemical improved A2/O tank, rectangular secondary sedimentation tank, residual sludge recirculation pump basin), ultraviolet disinfection channel, reagents input room, blower room, boiler room, transformer and distribution substation, sludge drying area, diesel generator room, fuel storage area, etc. In addition, there will be a basement, a garage, a repair and mechanical workshop, a checkpoint, a recreation area and other auxiliary buildings, as well as administration and amenity facilities.
56. The total area of the existing WWTP is 5.62 hectares, the capacity of WWTP is 4200 m<sup>3</sup>/day, the area is about 2.41 hectares. The design provides all WWTP facilities, as well as landscaping of the territory.
57. **Wastewater Treatment Process:**  
Water from main collector → manhole for discharge from vacuum trucks to WWTP → regulating pool → coarse screen → sewage pump (submersible sewage pump) → fine screen → cyclonic grit → biochemical pool of improved A2O → secondary settling tank → UV disinfection channel → discharge into oxidation pond outside the plant → for irrigation.
58. **Sludge Treatment Process:**  
Sludge drainage from influent regulating basin + drainage of residual sludge from the biochemical basin + drainage of sludge from the secondary settling tank → sludge drying area (PAA is added before the mud pipe mixer) → removal of the clay crust  
Today, the biological ponds of the Karakol and Balykchy WWTP are used as biological post-treatment of wastewater, wastewater accumulation in the non-irrigation period (in Balykchy) and discharge into the BSR (in Karakol).  
At the same time, the intended purpose of the biological ponds after the modernization of the Balykchy and Karakol WWTP is to use them as oxidizing tanks in order to reduce BOD concentrations and naturally remove chlorine from treated wastewater, as well as a reserve storage volume in case of emergencies (ES), including emergency and salvo flow of sewage to normalize the hydraulic load on the sewage treatment plant.
59. Since wastewater is delivered through intermittent pumping to this plant from the pump station located on Ozernaya str. A regulating pool should be installed at upstream of flow diagram, there is also 77 m<sup>3</sup>/day sludge from the septic tanks. A manhole is designed at upstream of the regulating pool to receive wastewater from the sewage truck. The maximum flow rate in the rainy season at secondary and tertiary treatment units is 180 m<sup>3</sup>/h. The general layout of the WWTP is shown in Annex 6.
60. Also, the The DB Contractor developed SSEMP for Balykchy WWTP and SSEMP for temporary structures. The SSEMP for temporary structures has been reviewed by DSC, agreed with ADB and approved by PMO May 24, 2022

During the current period, the Contractor noted violations of the requirements of the ADB Safeguard Policy and Contractual Obligations.

The ADB Safeguard Review Mission (June 13-July 16, 2022) while visiting the Balykchy WWTP noted that earthworks for the reservoir had not been updated for Balykchy IEE and approved SSEMP by EA. In this regard, the ADB Mission instructed the DSC to conduct an audit of all earthworks, cost calculations, determine the availability of all permits and submit a Corrective Action Plan for consideration, which are sent to ADB.

A serious problem of the Contractor falling behind the Project Implementation Schedule is the untimely selection of a local environmentalist by the Contractor, internal communication in the Contractor's team and poor interaction of the Contractor with the DSC and PIU at the site.

The PMO submitted the draft ESSMP for the Balykchy WWTP to ADB on June 16, 2022.

The SSEMP for Balykchy WWTP is under review now.

61. On April 6, 2022, the design estimates documentation was approved by the EA, IAs and PMO. During the reporting period, the following conclusions were received for the design and estimate documentation (DED) of WWTP:

- A positive conclusion from the expert commission of the Department of the Ministry of Emergency Situations of the Kyrgyz Republic for the Issyk-Kul region on conducting a fire-technical examination of the design and estimate documentation for compliance with fire-fighting requirements;
- A positive conclusion from the Issyk-Kul Regional Department of the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic of the State Ecological Expertise on the WWTP design ("Biological Treatment Tank", "Administrative Building", "Repair Workshop", "Dosing, Aerator, Boiler House", "Averaging tank", "UV disinfection channel, sludge drying site, drainage pumping station, Generator" and "Construction of gratings, SPS, Sand trap").
- Conclusion of the Issyk-Kul Regional Department of the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic on the project of the sanitary protection zone of the WWTP;
- A positive conclusion from the Department of State Expertise under the State Construction Committee on design and technical solutions for WWTP design for the following facilities: Administrative building, "Averaging tank", "Checkpoint" and "Fence".
- Conclusion of the Ton District Administration for Urban Planning and Architecture.

The following works were also performed by the Contractor: installation of the foundation of the WWTP fencing; household premises and a canteen for workers; toilet and shower room for both sexes; water supply, electricity for temporary work, excavation for the administrative building, repair shop, equalizer and biological tank.



**Figure 2-4 Temporary structures at Balykchy WWTP**

### 2.3.3 IEE Update

62. During the feasibility study phase, the construction of a replacement wastewater treatment plant at Balykchy using periodically decanted expanded aeration tanks (IDEAL) technology and tertiary treatment systems was identified as the most suitable alternative to the project.

During competitive bidding, the bidder/contractor proposed an alternative A2/O treatment option. This option will most effectively achieve the environmental and social objectives of the project in order to comply with international wastewater discharge standards.

OVOS reports and sections (Russian abbreviation of the OVOS section in the RP) were prepared. During the preparation of the OVOS reports, a public participation meeting was held.

In the area of the Balykchy WWTP and sewage ponds, a biological study of a bird species listed in the Red Book of the Kyrgyz Republic (Kyrgyz Republic) called corncrake (Crex Crex) was carried out.

Wastewater sludge in the ponds of the Balykchy WWTP has been analyzed and a sludge management plan is currently being considered. There have been institutional and legislative changes in the Kyrgyz Republic.

Taking into account the above aspects, it was decided to update the IEE separately for the cities of Balykchy and Karakol. It will be updated in accordance with ADB's Safeguard Policy Statement of June 2009 (SPS 2009), the Kyrgyz Republic's Law on Environmental Protection, 1999, and other relevant laws, regulations and requirements.

63. The objective of the IEE is to (i) identify and assess potential impacts and risks from project implementation on the physical, biological, physical cultural and socio-economic environments of the project area, and (ii) recommend measures to avoid, mitigate and provide compensation for adverse impacts, while enhancing positive impacts.
64. The basis for IEE updating:
- Data updated in accordance with the project progress and the new baseline data obtained, taking into account the new available data obtained during the detailed design from the contractors and the PMO.
  - Update of Ecological Resources Based on IBAT and Freshwater Reports there is no need to elaborate biological survey in the field.
  - Sanitary Protection Zone The detailed design report and a general layout with coordinates were received from the Balykchy WWTP contractor.
65. In the reporting period, the process of IEE updating for Balykchy began based on above points, taking into account the adopted design solutions and procedures such as laboratory studies and public consultations and a second draft IEE has been revised according to the comments.

In agreement with the ADB Safeguard Mission, in order to expedite the construction work at the Balykchy WWTP and obtain useful comments, the Balykchy IEE project was submitted to ADB on June 18, 2022.

## **2.4 Construction**

### **2.4.1 Balykchy Sewer networks**

66. Lot 1 "Western" (Togolok-Moldo St., Mambetalieva St., Ozernaya St. with a total length of 5.34 km). Construction is being carried out by Impulse-Osh Ltd. During the reporting period for Lot 1, the Contractor LLC "Impulse-Osh" performed construction and installation works on laying pipelines from polyethylene pipes with a length of 1909 meters in the amount of 187,662.98 US dollars. Construction and installation works were completed by 39.4%.

There are trees along the alignment that will be affected during construction due to construction works. According to the results of the preliminary study, the estimated number of trees that fall under the "forced felling" is 7 pieces (3 pieces on Togolok-Moldo street and 4 pieces on Mambetaliev street). For the current period, the Contractor did not cut down plantings.

The company HS Specialist is Bekmamat Zhapiev

67. Lot 2 "Eastern" (Toktosunova St., Sharopiva St., Kaldybaeva St. with a total length of 5.32 km). Construction is being carried out by Profit Express Ltd. During the reporting period for Lot 2, the Contractor LLC "Profit-Express" performed construction and installation works on laying pipelines from polyethylene pipes with a length of 3186.9 meters in the amount of 270,356.66 US dollars. Construction and installation works were completed by 48.6%.

According to the results of the preliminary study, the estimated number of trees that fall under "forced felling" is 28 trees (3 trees on Toktosunov St., 20 trees on Sharipov St. and 5 trees on Kaldybaeva St.). For the current period, the Contractor did not cut down plantings. HS Specialist Aman Muktarbekovich Akunov.

68. After signing a contract agreement on January 21, 2022, the Environmental Specialist of Impulse-Osh Ltd. prepared SSEMP which has been approved by DSC and PMO. In April, upon receipt of building permit, the company mobilized and began construction work.
69. Sewer networks are designed to ensure the drainage of wastewater from block development to the city sewer collector on Ozernaya street and SPS. Feces and domestic wastewater flows through the designed pipelines from corrugated HDPE pipes D150-400 mm from inlet manholes to tie-in points into the existing sewerage network. The sewerage networks are designed in accordance with hydraulic calculations, to ensure the passage of the total estimated flow rate of wastewater from the block developments adjacent to the sewer network, and with the slopes of the pipelines along the route, determined based on the permissible flow rates, taking into account the natural terrain. Asbestos-containing materials were not used/moved and disposed of during the construction works.

70. The routes are designed along the roadway of streets and along street sections, by an "open method" underground laying, where the walls of the trenches are strengthened with sheet piling to avoid any collapse. The EMP has been developed and included in the tender documentation.
71. Along the routes of the networks, it is envisaged to install control reinforced concrete manholes with D1.5 m with H operating part = 2- 3.5m, with tray elements H = 0.2-0.4m, complete with necks and hatches. In order to ensure the collection of sewage from both sides of the streets, as well as at the intersection points of cross streets and at the points where the route changes its direction, observation manholes and organized crossings over the roads with the placement of modular observation manholes were designed.
72. The routes are designed along the roadways of streets and along street sections, by an "open method" underground laying at a laying depth of 1.77 to 3.5 m. Sewerage networks intersect with existing communications, which causes complications, due to which the device of transition structures is provided.

**Table 2-4. Main indicators of Impulse Osh sewerage networks.**

| № of sections | Name of sections                               | Length, m           | Manholes, D 1.5 m, pcs. |
|---------------|--|---------------------|-------------------------|
|               |  | from pipes D 200 mm |                         |
| 1             | Sewerage Network:<br>- along Togolok Moldo st. | 2,417 m             | 86 pcs.                 |
| 2             | Sewerage Network:<br>- Mambetaliyeva Street    | 2,592m              | 87 pcs.                 |
| 3             | Sewerage Network:<br>- Ozernaya st.            | 325m                | 7 pcs                   |
| <b>TOTAL:</b> |  | <b>5,334 m</b>      | <b>180 pcs</b>          |





**Figure 2-5 Construction site of Impulse Osh Ltd.**

73. After signing a contract agreement on February 1, 2022, a specialist of Profit Express Ltd. prepared SSEMP which has been approved by DSC and PMO. In April, upon receipt of building permit, the company mobilized and began construction work.
74. Sewer networks are designed to ensure the drainage of wastewater from block development to the city sewer collector on Ozernaya street and SPS. Feces and domestic wastewater flows through the designed pipelines from corrugated HDPE pipes D150-400 mm from inlet manholes to tie-in points into the existing sewerage network. The sewerage networks are designed in accordance with hydraulic calculations, to ensure the passage of the total estimated flow rate of wastewater from the block developments adjacent to the sewer network, and with the slopes of the pipelines along the route, determined based on the permissible flow rates, taking into account the natural terrain. Asbestos-containing materials were not used/moved and disposed of during construction works.
75. The routes are designed along the roadway of streets and along street sections, by an "open method" underground laying, where the walls of the trenches are strengthened with sheet piling to avoid any collapse. The EMP has been developed and included in the tender documentation.
76. Along the routes of the networks, it is envisaged to install control reinforced concrete manholes with D1.5 m with H operating part = 2- 3.5m, with tray elements H = 0.2-0.4m, complete with necks and hatches. In order to ensure the collection of sewage from both sides of the streets, as well as at the intersection points of cross streets and at the points where the route changes its direction, observation manholes and organized crossings over the roads with the placement of modular observation manholes were designed.

77. The routes are designed along the roadways of streets and along street sections, by an "open method" underground laying at a laying depth of 1.77 to 3.5 m. Sewerage networks intersect with existing communications, which causes complications, due to which the device of transition structures is provided.

**Table 2-5 Main indicators for sewerage networks of Profit Express**

| № of sections | Name of sections                      | Length, m         | Manholes, D 1.5m, pcs. |
|---------------|---------------------------------------|-------------------|------------------------|
|               |                                       | from pipes D200mm |                        |
| 1             | Sewerage Network:<br>- Sharipov st.   | 2,586             | 85                     |
| 2             | Sewerage Network:<br>- Kaldybaev st.  | 2,033             | 70                     |
| 3             | Sewerage Network:<br>- Toktosunov st. | 713               | 23                     |
| <b>TOTAL:</b> |                                       | <b>5,332</b>      | <b>178</b>             |



**Figure 2-6 Construction site of Profit Express Ltd.**

#### **2.4.2 Sewerage Networks of Karakol City**

78. Lot 1 "Southern" (section №1 - Akhunbaeva street from Lenin to Moscow streets, section №2 - Duisheyeva street from Zhusaeva to Moscow streets, section №3 - Moscow street from Akhunbaeva to Oktyabrskaya streets), the total length is 6,71 km. Construction is being carried out by Minur Ltd.». During the reporting period, the Contractor performed construction and installation works on laying pipelines from polyethylene pipes with a length of 1009 meters in the amount of 146,336.47 US dollars. Construction and installation works were completed by 26.7%.

According to the results of the preliminary study, the estimated number of trees that fall under "forced felling" is 49 pieces (1 piece on Lenin St., 3 pieces on Gebze St., 1 piece on Abdyrakhmanov St., 1 piece on Alybakov St., 13 pieces on Akhunbaeva street, 5 pieces on Duyshev street, 9 pieces on Akhunbaev street 1, 12 pieces on Abdyrakhmanov street,

1 piece on Gebze street 1 and 3 pieces on Moskovskaya street). HS Specialist, foreman Myrzabek Shabdanov and Environmental Engineer Bekzat Shergazievich Dadybaev)

79. Lot 2 "Northern" (Lot includes section №4 - Oktyabrskaya str. from Gebze to Kuchukova streets, section №2 - Zhusaeva str. from Przhevalsky to Shorukova streets) the total length is 5.94 km). Construction is carried out by a consortium of Inzhenernaya Zashchita Ltd. and Polymer Snab Asia Ltd. During the reporting period, the Contractor completed construction and installation works on laying pipelines from polyethylene pipes with a length of 1088 meters in the amount of 183,469.00 US dollars. Construction and installation works were completed by 33.4%. According to the results of the preliminary study, the project provides for the felling of 1 tree. For the current period, cutting has not been carried out. The Environmental Engineer Kuttuz Makhamadzhanovich Ikramov.
80. After signing a contract agreement on March 31, 2022, a specialist of Minur Ltd. prepared SSEMP which has been approved by DSC and PMO; and upon receipt of building permit, the company mobilized and began construction work. The EMP has been developed and included in the tender documentation.
81. Taking into account the building density of city streets and their dimensions, the gravity sewer network of each street is designed on one side of the street.
82. For the sewerage of the other side of the street, along the sewerage routes, organized crossings to the other side of the street with the placement of prefabricated wells are provided. When choosing a route, the existing underground and ground engineering networks that are located on the streets were taken into account. In addition, project materials of the networks to be built on these streets have been studied.
83. Sewer networks are designed to provide drainage from residential buildings to city sewage treatment plants. Domestic and fecal waste flows through the designed pipelines from corrugated HDPE pipes D150-300 mm from inlet manholes to tie-in points into the existing sewerage network. The sewerage networks are designed in accordance with hydraulic calculations, to ensure the passage of the total estimated flow rate of wastewater from the block developments adjacent to the sewer network, and with the slopes of the pipelines along the route, determined based on the permissible flow rates, taking into account the natural terrain. Along the routes of the networks, it is envisaged to install control reinforced concrete manholes with D1.5 m when H operating part = 1.4 - 4.5 m, with tray elements H = 0.2 - 0.4m, complete with necks and hatches. In order to ensure the collection of sewage from both sides of the streets, as well as at the intersection points of cross streets and at the points where the route changes its direction, observation manholes and organized crossings over the roads with the placement of modular observation manholes were designed. Asbestos-containing materials were not used/moved and disposed of during the construction works.
84. The city's gravity sewer network is designed from NDPE Korsis corrugated sewer pipes, with the smallest diameter of 200 mm for a street network. (according to SNiP 2.04.03-85 "Sewerage. External networks and structures". clause 2.33). Detailed diameters of pipelines are indicated in the drawings.

85. The slopes of the pipelines along the route were determined based on the terrain and on the basis of the permissible flow rates of wastewater, as well as taking into account the location of other underground utilities and standard slopes.
86. The calculated filling in the pipelines of the domestic sewage system, according to SNiP 2.04.03-85 "Sewerage. External networks and structures". clause 2.40, is taken not more than 0.7 of the pipeline diameter.
87. The depth of the sewerage network must ensure that all subscribers living in the neighborhood are connected. The average depth accepted for laying the sewerage network is up to 3 meters.
88. There are sewer manholes made of precast reinforced concrete rings with a diameter of 1.0 m and 1.5 m on the sewerage route.
89. Inspection manholes for the designed network are provided at the junctions of cross streets, in places where the route direction changes, as well as changes in the slopes and diameter of the pipeline. The manholes are covered with cast-iron hatches, 700 mm in diameter, with removable covers.



**Figure 2-7 Construction site of Minur Ltd.**

**Table 2-6. Main indicators for sewerage networks of Minur Ltd.**

| № of sections | Name of sections | Length, m         | Manholes, D 1.5m, pcs. |
|---------------|------------------|-------------------|------------------------|
|               |                  | from pipes D200mm |                        |
| 1             | Site 1.          | 3,220             | 97                     |
| 2             | Site 2           | 1,910             | 58                     |
| 3             | Site 3           | 1,553             | 52                     |
| <b>TOTAL</b>  |                  | <b>6,683</b>      | <b>207</b>             |

90. After signing a contract agreement on April 05, 2022, a specialist of the Consortium of Inzhenernaya Zashchita prepared SSEMP which has been approved by DSC and PMO; and upon receipt of building permit, the company mobilized and began construction work. The EMP has been developed and included in the tender documentation.
91. Taking into account the building density of city streets and their dimensions, the gravity sewer network of each street is designed on one side of the street.
92. For the sewerage of the other side of the street, along the sewerage routes, organized crossings to the other side of the street with the placement of prefabricated wells are provided. When choosing a route, the existing underground and ground engineering networks that are located on the streets were taken into account. In addition, project materials of the networks to be built on these streets have been studied.
93. Sewer networks are designed to provide drainage from residential buildings to city sewage treatment plants. Domestic and fecal waste flows through the designed pipelines from corrugated HDPE pipes D150-300 mm from inlet manholes to tie-in points into the existing sewerage network. The sewerage networks are designed in accordance with hydraulic calculations, to ensure the passage of the total estimated flow rate of wastewater from the block developments adjacent to the sewer network, and with the slopes of the pipelines along the route, determined based on the permissible flow rates, taking into account the natural terrain. Along the routes of the networks, it is envisaged to install control reinforced concrete manholes with D1.5 m when H operating part = 1.4 - 4.5 m, with tray elements H = 0.2 - 0.4m, complete with necks and hatches. In order to ensure the collection of sewage from both sides of the streets, as well as at the intersection points of cross streets and at the points where the route changes its direction, observation manholes and organized crossings over the roads with the placement of modular observation manholes were designed. Asbestos-containing materials were not used/moved and disposed of during construction work.
94. The city's gravity sewer network is designed from NDPE Korsis corrugated sewer pipes, with the smallest diameter of 200 mm for a street network. (according to SNiP 2.04.03-85 "Sewerage. External networks and structures". clause 2.33). Detailed diameters of pipelines are indicated in the drawings.

95. The slopes of the pipelines along the route were determined based on the terrain and on the basis of the permissible flow rates of wastewater, as well as taking into account the location of other underground utilities and standard slopes.
96. The calculated filling in the pipelines of the domestic sewage system, according to SNiP 2.04.03-85 "Sewerage. External networks and structures". clause 2.40, is taken not more than 0.7 of the pipeline diameter.
97. The depth of the sewerage network must ensure that all subscribers living in the neighborhood are connected. The average depth accepted for laying the sewerage network is up to 3 meters.
98. There are sewer manholes made of precast reinforced concrete rings with a diameter of 1.0 m and 1.5 m on the sewerage route.
99. Inspection manholes for the designed network are provided at the junctions of cross streets, in places where the route direction changes, as well as changes in the slopes and diameter of the pipeline. The manholes are covered with cast-iron hatches, 700 mm in diameter, with removable covers.



**Figure 2-8 Construction site of the consortium of Inzhenernaya Zashchita Ltd. and Polymer Snab Asia Ltd.**

**Table 2-7. Main indicators for sewerage networks of the consortium of Inzhenernaya Zashchita Ltd. and Polymer Snab Asia Ltd.**

| № of sections | Name of sections<br>Section No. 5 | Length, m            | Manholes,<br>D 1.5m,<br>pcs. |
|---------------|-----------------------------------|----------------------|------------------------------|
|               |                                   | from pipes<br>D200mm |                              |
| 1             | Oktyabrskiy1                      | 1,131                | 30                           |
| 2             | Asanaliev.                        | 363.5                | 11                           |
| 3             | Tumanov.                          | 380                  | 12                           |
| 4             | Kadyrov.                          | 371.5                | 10                           |
| 5             | Sovetskaya.                       | 355.2                | 10                           |
| 6             | Isa Kuchukov.                     | 629                  | 17                           |
| 7             | Section 5.                        | 2,749.5              | 73                           |
| <b>TOTAL:</b> |                                   | <b>5,979.7</b>       | <b>163</b>                   |

### **2.4.3 Construction of Temporary Facilities on Balykchy WWTP Site**

100. Contractor could not start construction activities yet but the temporary facilities, which were not agreed with the PMO and ADB, were produced without updating the IEE of Balykchy and approval of the SSEMP by EA. In this regard, the Contractor developed and submitted to the PMO the SSEMP for temporary construction works at the Balykchy WWTP, which was agreed with ADB and approved by the EA on May 24, 2022. The temporary facilities constructed at WWTP site are:

- Installation of 380 m fence, material includes: concrete, steel, gas concrete block from a local supplier ;
- Removable house including kitchen, 380 m<sup>2</sup>, material includes: removable wall and roof of house from contractor, steel, concrete, wood, cable from local supplier;
- Toilet for both floors, shower room, material includes: concrete, gas block from a local supplier ;
- Connecting water, electricity for temporary works, material includes: PE pipes, cable from a local supplier.

101. In the construction of temporary structures the main types of work are:

- Excavation of foundation, shoring of foundation (excavation of septic)
- Installation of sewer lines (canteen, showers, toilets)
- Erection of utility rooms from sandwich panels.
- Erection of toilets and showers of sandblock.



**Figure 2-9 Temporary structures at WWTP**

Although the SSEMP was not approved, the contractor for Balykchy WWTP started the works not included in the SSEMP for temporary facilities but the subject of SSEMP for major works, without approval of DSC. Site instruction for non-conformity (NCN) including Corrective Action Plan was issued by DSC. The following works were executed:

**Table List and volume of unauthorized works.**

|                         |                    |                |           |
|-------------------------|--------------------|----------------|-----------|
| Administrative Building | Earthworks         | m <sup>3</sup> | 852.39    |
|                         | foundation pad     | m <sup>3</sup> | 61.31     |
| Mechanical Workshop     | Earthworks         | m <sup>3</sup> | 303.75    |
|                         | foundation pad     | m <sup>3</sup> | 10.19     |
|                         | steel installation | T              | 8.00      |
| Biological Tank         | Earthworks         | m <sup>3</sup> | 13 449.44 |
|                         | foundation pad     | m <sup>3</sup> | 150.00    |
|                         | steel installation | T              | 80.00     |





### **3 ENVIRONMENTAL SAFEGUARD ACTIVITIES**

#### **3.1 General Description of Environmental Safeguard Activities**

##### **3.1.1 Expansion of Sewer Network in Balykchy and Karakol**

104. After the conclusion of the contract agreement on January 21, 2022, the environmental specialist of "Impuls-Osh" LLC prepared the SSEMP, which was reviewed by the DSC and approved by the PMO. And in April, after obtaining permission to start construction, the company mobilized and started construction works in Balykchy. During the reporting period, for Lot 1 (5.34 km), the Contractor LLC "Impulse-Osh" performed construction and installation works on laying pipelines from polyethylene pipes with a length of 1909 meters in the amount of 187,662.98 US dollars. Construction and installation works were completed by 39.4%.

After the conclusion of the contract agreement on February 1, 2022, the specialist of "Profit-Express" LLC prepared the SSEMP, which was reviewed by the DSC and approved by the PMO. And in April, after obtaining permission to start construction, the company mobilized and started construction work in Balykchy. During the reporting period, for Lot 2 (5.32 km), the Contractor LLC "Profit-Express" performed construction and installation works on laying pipelines from polyethylene pipes with a length of 3186.9 meters in the amount of 270,356.66 US dollars. Construction and installation works were completed by 48.6%.

After the conclusion of the contract agreement on March 31, 2022, the SSEMP was prepared by the specialist of "Minur" LLC, which was reviewed by the DSC and approved by the PMO, and after obtaining permission, the company was mobilized and construction works began in the city of Karakol. For Lot 1 ((6.71 km), the Contractor LLC "PP Minur" during the reporting period completed construction and installation works on laying pipelines from polyethylene pipes with a length of 1009 meters in the amount of 146,336.47 US dollars. Construction and installation works were completed by 26.7%.

After the conclusion of the contract agreement on April 05, 2022, a specialist of the Consirtium consisting of "Inzhenernaya Zashita" LLC and "Polymer Snab Asia" LLC prepared the SSEMP, which was reviewed by the DSC and approved by the PMO, and after obtaining permission, the company mobilized and began construction work in the city of .Karakol. During the reporting period, construction and installation works were carried out on laying pipelines from polyethylene pipes with a length of 1088 meters in the amount of 183,469.00 US dollars. Construction and installation works were completed by 33.4%.

##### **3.1.2 Construction of Balykchy WWTP**

105. The Contractor developed the detailed design. Also, sections "Environmental Section" and SPZ design were developed, which passed the State Ecological Expertise and received a positive conclusion.

106. The main facilities of the WWTP are: sewer truck discharge station, inlet control basin, coarse screen building, sewage lifting pumping station, fine screening room, cyclone sand trap, complex sewage treatment basin (including biochemical improved A2O tank, rectangular secondary clarifier, residual sludge recirculation pump), ultraviolet disinfection channel, reagent input room, blower room, boiler room, transformer and distribution substation, sludge drying area, diesel generator room, fuel storage area, etc. In addition, there will be a basement, a garage, a mechanical repair shop, a checkpoint, a recreation area and other administrative and auxiliary buildings.

107. The Contractor developed SSEMP for temporary structures. The SSEMP for temporary structures has been reviewed by DSC and approved by PMO and ADB May 24, 2022.

For the current period, the Contractor noted violations of the requirements of the ADB Safeguards Policy and Contractual obligations: it was noted that earthworks for the reservoir were carried out without updating the IEE of Balykchy and approval of the SSEMP by EA. In this regard, ADB instructed the DSC to audit all earthworks, calculate costs, determine the availability of all permits and submit a Corrective Action Plan for consideration, which are sent to ADB.

108. The SSEMP for Balykchy WWTP was also prepared by the Contractor and submitted to PMO. The PMO submitted the draft SSEMP for the Balykchy WWTP to ADB for review on June 16, 2022.
109. The Contractor has not commenced with construction works yet. A serious problem of the Contractor falling behind the Project Implementation Schedule is the untimely selection of a local environmentalist by the Contractor, internal communication in the Contractor's team and poor interaction between the Contractor and the DSC and PIU at the site.

### **3.1.3 Sludge Management Plan;**

110. The DSC updated the earlier prepared Sludge Management Program (SMP) and submitted it to the PMO for review in the first Quarter of 2022. Later, upon request by ADB and PMO, some other alternative solutions have been studied and alternative plan for sludge management has been submitted for review.

In Balykchy, the biological wastewater treatment system consists of aeration tanks followed by secondary clarifiers. There are six biological ponds measuring 62 m (W) x 250 m (D) (approximately 8 ha). The depth of the ponds is from 1.5 m. These biological ponds were designed to work in three series of two ponds: facultative and aerobic aftertreatment ponds. Ponds are created on an area of about 8 hectares. According to available data, the incoming water is mainly domestic wastewater.

The wastewater treatment plant in Karakol is not functioning and currently raw sewage is directly fed into the sewage ponds of Karakol city at a rate of 7500 m<sup>3</sup>/day. Only one industrial enterprise discharges effluents to WWTP, and this is a dairy plant. The dairy does not have its own internal structure for on-site industrial water treatment (pretreatment facilities). It discharges raw sewage into the city's sewer systems. It is estimated that the pond area of the Karakol WWTP is approximately 3.5 ha.

Through a gravity pipeline, purified water from the ponds of the Karakol WWTP enters the irrigation pond. The water accumulated during the winter months is supplied to the irrigated area during the summer season. The irrigation pumping station pumps treated wastewater into a canal, where it is diluted with irrigation water and irrigates about 620 hectares of fields. Currently, purified water is discharged into the irrigation pond at an average of 6,000 m<sup>3</sup>/day in winter, 12,000 m<sup>3</sup>/day in summer. The active working volume of the irrigation pond is about 1.5 million m<sup>3</sup> on an area of 39 ha.

The intended purpose of the ponds and sedimentation tanks after the modernization of the Balykchy and Karakol WWTPs is to use them as oxidizing ones in order to remove chlorine from treated water, as well as as a backup storage volume in case of emergencies.

The sludge that has accumulated at the bottom of these ponds contains an organically stabilized portion of the treated effluent, and the stabilized sludge can be used for land

application purposes if it meets the criteria set by legislation. This sludge can be used if it is free of heavy metals and pathogens, contains sufficient nutrients and organics, and contains sufficient solids that can be easily incorporated into the soil.

The legislation followed by Kyrgyzstan in the field of sludge use and disposal includes Russian GOST R 17.4.3.07-2001 and SanPiN 2.1.7.573-96. These regulations set standards for heavy metals, pathogens, nutrients, dry matter and organic matter.

### 3.1.4 Public Consultations

111. On March 18, 2022 Consortium of CCCC Tianjin Dredging Co, Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co held a public consultation on Environmental Impact Assessment (OVOS) and Social Safeguards for construction of Balykchy Wastewater Treatment Plant (WWTP) under Issyk-Kul Wastewater Management Project in Balykchy City Hall.

112. Participants :

| <b>Representatives of Executing Agency (EA) and Implementing Agency (IA):</b>  |   |  |
|--|---|--|
| P. Zh. Zheentaev   | - | Chief Specialist of the Naryn-Issyk-Kul Interregional Division of the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Housing under the Cabinet of the KR (DDWSSD); |
| K.S. Samudinov   | - | Director of Balykchy ME Vodokanal;   |
| B.T. Akmatov   | - | Chief Engineer of BME Vodokanal  |
| S.B. Baktybekov  | - | Deputy Director of BME "Vodokanal";  |
| A.K. Muktarov  | - | PMO Director   |
| Demir Muftuoglu  | - | International Process Treatment Engineer PMO;  |
| S.A. Omurkanov   | - | PMO Wastewater Engineer;   |
| K.Sh. Zhundubaev   | - | PMO Environmental Specialist;  |
| M.K. Zhumabekov  | - | PMO Social Safeguards and Resettlement Specialist;   |
| A.A. Atambekova  | - | PMO Secretary-Translator, IWMP;  |
| K.Z. Karasartov  | - | Balykchy PIU Manager;  |
| N. B. Kendirbaeva  | - | PIU Balykchy Office Manager/Translator, IWMP;  |
| <b>On behalf of the Contractor CCCC Tianjin Dredging Co., Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co., Ltd Joint Venture:</b> |   |  |
| Yu Zhiping   | - | Project Manager  |
| R. Omurzakov   | - | CPI  |
| R. Kasynov   | - | Environmental Specialist   |
| S. Temirkanova   | - | Translator   |
| <b>On behalf of the Design and Supervision Consultant Temelsu International Engineering Services Inc. (DSC):</b>   |   |  |
| O.V. Zinina  | - | Local Environmental Specialist, DSC  |
| Yu. .Yu.   | - | Social Safeguards and Resettlement Specialist, DSC   |

113. During the public consultations, the residents and stakeholders were informed about the process adopted at the wastewater treatment plant. Environmental impact during WWTP construction and operation on all components of the natural and social environment.
114. The participants were also informed about mitigation measures to minimize the potential negative impact. Minutes of the Public participation meeting is attached in Annex 2.

Short list of questions and answers:

Q1: Resident of Balykchy. - When WWTP construction will be completed?

A1. Rakhat Kysanov, Environmental Specialist - As per the project implementation schedule

Q2: G. B. Beishebieva, a resident of Balykchy - Will they hire local workers?

A2. Rakhat Kysanov, Environmental Specialist - The Contract provides for the involvement of local residents.

Q3: Resident of Balykchy. - There are rented land plots around the WWTP, will they be taken?

A3. Rakhat Kysanov, Environmental Specialist - No, they will not be taken, the new WWTP will be built within the existing WWTP area.

115. On March 31, 2022 TEMELSU International Engineering Services Inc. (DSC) held a public consultation on the Environmental impact assessment and Social Safeguards for the construction of a wastewater tank in Pristan-Przhevalsk, 200 meters of discharge pipeline and modernization of 28 manholes on the main sewage collector in Karakol city. The public participation meeting was held in Karakol City Hall.
116. The public hearing was attended by representatives of the Executing Agency (EA), the Implementing Agency (IA), the Mayor's Office of Karakol, ME Vodokanal, regional governments, the design and supervision consultant (DSC), the Project Management Office (PMO) and the Project Implementation Unit (PIU) of Karakol, Local Self Governance (LSG) and the residents of Karakol (The list of registration is attached).
117. During the public consultations, residents of the town and the village of Pristan-Przhevalsk and stakeholders were informed about the adopted design solutions to provide residents of Pristan-Przhevalsk with high-quality wastewater disposal services. Environmental impact during the construction and operation of sewerage system on all components of the natural and social environment.
118. The participants were also informed about mitigation measures to minimize the possible negative impact.

Main questions and answers;

Q1: Mr. Sambaev B.A., Chief Specialist of IKTDEP for Karakol City: How the pipeline across the Karakol River will be laid?

A1. A.A. Putilov DSC Design Engineer: Initially, the design provided the replacement of the entire pipeline from the oxidation ponds of the WWTP to the irrigation pond with a length of 2.5 km. Then the task was set to build only 200 meters of pipeline under the Karakol River. This is a difficult task and must be carried out according to the requirements and norms. Under the river, the pipeline is laid in an inverted siphon The

inverted siphon must have two parallel lines and pass at such elevation to ensure gravity flow inside the pipeline. The issue is being studied now in order to meet all the requirements for watercourse, inverted siphon, bearing capacity. A topographic survey was carried out. I believe that it is necessary to completely replace the entire pipeline from the beginning to the end to ensure gravity flow. A conceptual design with an estimate for this subproject is being prepared. It is impossible to disturb the available pipeline, since it is an existing system. Technologically, it is necessary to foresee the construction of a 200-meter section, and then connect this section with the general system.

Q2: Ms. Isabaeva A.A., a resident of MTD-1: What is the construction period for the tank?

A2 A.A. Putilov DSC Design Engineer: The construction period is generally no more than half a year, since the tank will be factory-made.

Q3: Mr. Karasartov A.E. – Head of IKRDUPA: What will be the load on the pipeline passing under the river? Have soil surveys been carried out to study the effects of snow and rain? It is necessary to carry out survey work at the stage of conceptual design.

A3 A.A. Putilov DSC Design Engineer: Surveys have already been carried out – there is no groundwater at the site of the planned tank, and there is standing water at the site of the 200-meter pipeline section. Geological surveys have been carried out. There is underground water and subsurface water under the river. The main issues will then be during construction, since the subsurface water cannot be pumped out, it will have to be diverted. Half of the river should be diverted, work in a dry riverbed, and then vice versa. APS and ETS have not yet been prepared for a section of 200 m of pipeline under the river and 28 manholes on the main collector. And the APS and ETS have already been obtained for the tank in Pristan.

119. Minutes of the Public participation meeting is attached.

### 3.2. Site Audits

120. The construction sites are audited by DSC National Environmental Specialist to check the compliance with measures specified in the SSEMP. The DSC's Local Environmental Specialist O.V. Zinina the DSC's visited the construction sites of sewer networks in Balykchy on March 30, 2022 and April 26, 2022.

121. On June 20, construction sites were visited together with the ADB mission. The number of visits is explained by the fact that construction work on sewage networks started in April in Balykchy and in May in Karakol. Visit frequency is once a month.

122. Details of the WWTP and network construction site visits are presented in Table 3-1.

**Table 3-1. Audit of sites in Balykchy and Karakol Network sites**

| No | Site/Location                     | Date Recorded | Category | Description of Issue                     | Corrective Action/s                                      | NCN No | NC Level | Due Date | Priority | Person Responsible  | Status | Date Closed | Comments |
|----|-----------------------------------|---------------|----------|--|--|--------|----------|----------|----------|---------------------|--------|-------------|----------|
| 1  | Lot2 NW Balykchy (PROFIT EXPRESS) | 30.03.22      | Health   | staff are not aware of the first aid kit | Inform the staff where the first aid kit is stored       | N1     | Minor    | 04.04.22 | Low      | Zhyldyz Moldosanova | Closed | 02.04.22    |          |
| 2  | Lot1 NW Balykchy (IMPULSE OSH)    | 30.03.22      | Health   | staff are not aware of the first aid kit | Inform the staff where the first aid kit is stored       | N1     | Minor    | 04.04.22 | Low      | Bekmamat Japiey     | Closed | 04.04.22    |          |
| 3  | Lot1 NW Balykchy (IMPULSE OSH)    | 30.03.22      | Safety   | Trench excavation is not secured         | Bring the bridges in compliance with safety requirements | N2     | Minor    | 04.04.22 | High     | Bekmamat Japiey     | Closed | 04.04.22    |          |

|   |                                |          |             |                    |                      |    |       |          |     |                               |        |          |
|---|--------------------------------|----------|-------------|--------------------|----------------------|----|-------|----------|-----|-------------------------------|--------|----------|
| 4 | Lot1 NW Karakol (PE Minur LLC) | 27.04.22 | Environment | Bio-toilet missing | Install a bio-toilet | N1 | Minor | 04.05.22 | Low | Bekzat Shergazievich Dadybaev | Closed | 02.05.22 |
|---|--------------------------------|----------|-------------|--------------------|----------------------|----|-------|----------|-----|-------------------------------|--------|----------|

The construction activities has started (at site) for networks of Balykchy in March and in April for Karakol; Balykchy WWTP even not started by the report date. Therefore, the reporting period is not a full semi-annual period but less then a half. Therefore three monitoring visits were conducted within the mentioned period.

123. The DSC's Local Environmental Specialist O.V. Zinina the DSC's visited the construction sites of sewer networks in Karakol on April 27, 2022.
124. On June 20, construction sites were visited together with the ADB mission.

### 3.3. Issues Tracking (Based on Non-Conformance Notices)

125. A visit has been held on June 20, 2022 to Balykchy City WWTP Site. The meeting has been held in the WWTP area. The participant parties were ADB Mission, ADB Resident Mission", Balikcy Vodokanal PIU, PMO, DSC, and Contractor.

Despite repeated meetings and consultations with the Contractor held by the PMO (pre-contract negotiations, official notifications, training) on the need to strictly comply with the requirements of national legislation, the ADB safeguard policy and its obligations under the Contract for the current period, the Contractor committed violations.

Thus, the ADB Review Mission (April 25-May 16, 2022) during a site visit noted the establishment of a construction camp of light structures, felling of plantations and demolition of buildings at the Balykchy WWTP without updating the Balykchy IEE and approval of the SSEMP by EA. In this regard, on the recommendation of the ADB's Mission, the Contractor developed and submitted to the PMO the SSEMP for temporary construction works at the Balykchy WWTP, which was agreed with ADB and approved by the EA on May 24, 2022.

In addition, the ADB Safeguard Review Mission (June 13-July 16, 2022) during its visit to the Balykchy WWTP noted that excavation work for the reservoir had not been updated for Balykchy IEE and approved the SSEMP by EA. In this regard, the ADB Safeguard Review Mission recommended to the DSC to audit all earthworks, calculate costs, permit availability, and submit a Corrective Action Plan, which was submitted to ADB.

In order to expedite the procedure for starting construction of the Balykchy WWTP, in agreement with the ADB Safeguard Mission (June 14, 2022), the PMO submitted to ADB for review and approval the draft ESMPs for the Balykchy WWTP (June 16, 2022) and the updated Balykchy IEE (June 18, 2022 years) to receive preliminary useful recommendations and comments and promptly update the designated documents.

126. The Contractor started the Works for biological tank of the WWTP. The Contractor has finished the excavation, lean concrete, some part of steel Works without approval of DSC
127. Non-Conformity Tracking Report related to site audits is enclosed in appendix VIII

**Additionally, the summary of monitoring results are given in the following tables:**

| Summary Tables                     |    | Issues By Category |   |
|------------------------------------|----|--------------------|---|
| Total Number of Issues for Project | 11 | Environment        | 2 |
| Number of Open Issues              | 3  |                    |   |

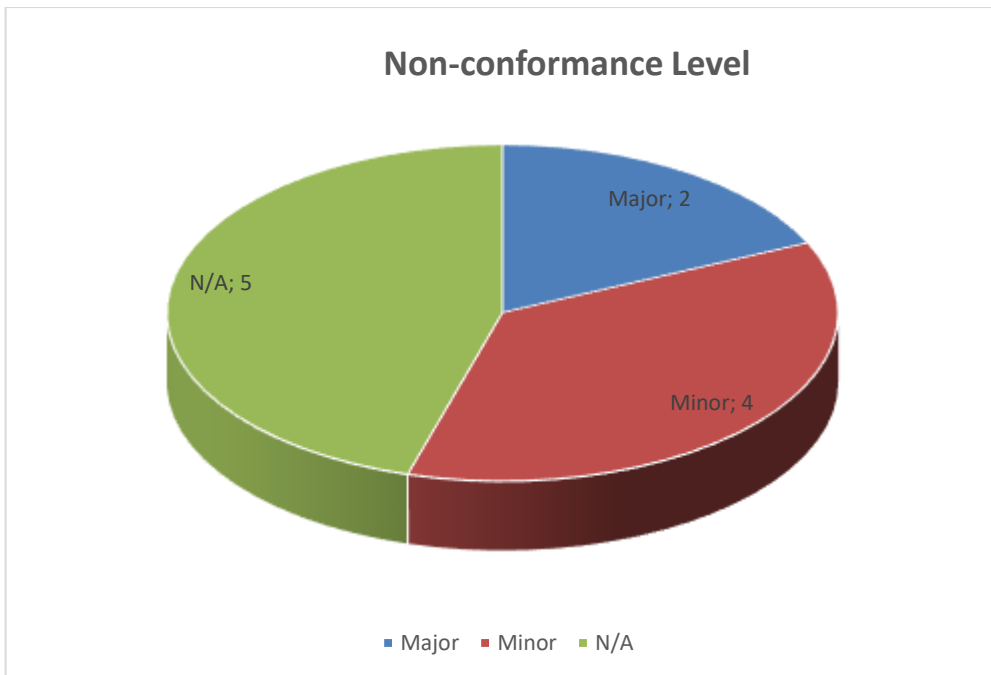


|  |      |
|--|------|
| <b>Number of Closed Issues</b>             | 8    |
| <b>Percentage Closed</b>                   | 73%  |
| <b>Issues Opened This Reporting Period</b> | 11   |
| <b>Issues Closed This Reporting Period</b> | 8    |
|  |      |
| <b>Issues Closed On Time</b>               | 8    |
| <b>Percentage by Closed Issues</b>         | 100% |
| <b>Percentage by Open Issues</b>           | 0%   |
|  |      |
| <b>Average Day Open For All Issues</b>     | 36   |
| <b>Average Day Open For Open Issues</b>    | 130  |
| <b>Average Days to close</b>               | 9    |

|               |   |
|---------------|---|
| <b>Social</b> | 0 |
| <b>Health</b> | 0 |
| <b>Safety</b> | 1 |
| <b>Other</b>  | 6 |

*On the other hand; this is the standard Tracking Table of ADB which we are using. (Manual Ver 8 PIU focus 26-02-18 final version by ADB)*

**Figure Summary of Issues by Non-Conformance**



### 3.4. Trends

- 128. Works on site cannot be started before approval of IEE and SSEMP as mentioned on site visit.
- 129. The works should be according to IEE, EMP, SEMP, local permits, and environmental checklists.

130. Since the construction works have just started in the second half of this period, no trends could be observed to compare with the previous period.

### 3.5. Unanticipated Environmental Impacts or Risks

131. In the current period, no any unanticipated Environmental impacts or risks have been encountered or identified

## 4. ENVIRONMENTAL MONITORING RESULTS

### 4.1. Overview of Monitoring Conducted during Current Period

#### 4.1.1. Ambient air quality

132. The main type of pollutant during construction of sewerage network is inorganic dust, which is generated during excavation work. Dust suppression is used to minimize this type of contamination.

133. Also, during construction work, exhaust gases are emitted when construction equipment is in operation. The composition of exhaust gases is a mixture of nitrogen oxides, sulfur, carbon, soot and hydrocarbons.

134. Daily visual air quality monitoring is conducted at the construction site. (Monitoring reports are presented in Appendix 7)

135. The instrumental measurement was not made due to the absence of a laboratory. Search of a laboratory continues.

#### Table Review of Laboratories

| Name of the Local Laboratories   | Location     | Accreditation | Notes   |
|--|--------------|---------------|---|
| Laboratory Under Issyk-Kul Territorial Dep. of MNRETS  | Cholpon-Ata  | Not available | Air tests are not available.                                  |
| Central Lab. under Department of Disease Prevention and State Sanitary and Epidemiological Surveillance  | Bishkek city | Not available | Air tests are not available.                                  |
| State Enterprise "Central Laboratory" (SE CL) under the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic (MNRETS KR). | Bishkek city | Available     | Air tests are not available.                                  |
| Stewart Assay & Env. Lab. LLC  | Karabalta    | Not available | Laboratory staff does not go to fields due to heavy workload. |

136. Nearby residents did not complain on air quality.

#### 4.1.2. Noise and Vibration

137. The main source of noise during installation is construction equipment. The works are executed from 9.00 to 17.00, i.e. during the working day. Personal requests from residents regarding the timing of noisy activities were taken into account. Noise was measured by the application of the cell phone.

138. Nearby residents did not complain on noise and vibration.

#### **4.2. Trends**

139. Since the construction works have just started in the second half of this period, no trends could be observed to compare with the previous period.

#### **4.3. Summary of Monitoring Outcomes**

140. At construction sites, the Environmental Engineers conduct daily visual monitoring and keep records of excess soil, as well as generated solid domestic wastes.

141. Bio-toilets, trash bins and bridges for trench crossing are available on the sites. There is a first aid kit and a sanitizer.

142. Safety briefings are conducted regularly.

143. So, During the observation period, no significant signs of negative environmental impact were identified. Need of additional monitoring is not recommended presently.

#### 4.4. Material Resources Utilization

144. Construction work involves a significant use of material resources. The main resources are:

- Electricity
- Water

145. The main resources that were used in the construction is water. Water is used for domestic, hygienic and technical (dust suppression) purposes. Water is supplied under a contract with Balykchy Vodokanal.

**Table Consumed material resources**

| Name of Contractor   | Electricity for the reporting period, kW/h | Water for the reporting period, m3 |
|--|--|------------------------------------|
| 1  | 2  | 3                                  |
| Impulse-Osh Ltd.   | 1723.7                                     | 18.4                               |
| Profit Express Ltd.  | 600  | 26                                 |
| Minur LLC  | 2100                                       | 60                                 |
| Consortium of Inzhenernaya Zashchita Ltd. and Polymer Snab Asia Ltd.   | 1050                                       | 62.5                               |
| <u>Consortium of Contractor CCCC Tianjin Dredging Co., Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co., Ltd Joint Venture</u> | 946.56                                     | 1593.33                            |
| <b>Total</b>   | <b>6420.26</b>                             | <b>166.9</b>                       |

#### 4.5. Waste Management

146. Waste management is carried out in accordance with the SSEMP. The contractors signed the contract with municipal services for the removal of waste generated during construction. The table below shows the amount of waste produced by contractors during the reporting period.

147 In Balykchy, Impulse-Osh LLC and Profit Express signed a contract for waste removal with the ME Tazalyk, the disposal place is the municipal landfill which is 1.5 km from Balykchy. Excess soil is temporarily stored at the area allocated by ME Tazalyk.

148. The consortium of CCCC Tianjin Dredging Co., Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co signed a contract with Tazalyk to remove waste, the excess soil is stored in a designated area in agreement with Tazalyk.

149. In Karakol, Minur Ltd, and consortium of Inzhenernaya Zashchita Ltd. and Polymer Snab Asia Ltd. signed a contract for waste removal with the ME Tazalyk, the disposal

place is the municipal landfill which is 5 km from Karakol. The excess soil is stored in a designated area in agreement with Tazalyk.

**Table 4-1 Waste generated during construction works**

| <b>Name of Contractor</b>  | <b>Excess of soil</b> | <b>Solid domestic wastes</b> | <b>Residuals of PE pipes</b> |
|--|-----------------------|------------------------------|------------------------------|
| Impulse-Osh Ltd.   | 2453.85 m3            | 3.85 m3                      | -                            |
| Profit Express Ltd.  | 1034                  | 7.7                          | -                            |
| Minur LLC  | -                     | 5.1                          | -                            |
| Consortium of Inzhenernaya Zashchita Ltd. and Polymer Snab Asia Ltd. | 3565 m3               | 4.4                          | -                            |

#### **4.6. Occupational Health and Safety**

##### **4.6.1. Community Health and Safety**

150. During the reporting period, there were no incidents that led or could lead to public health and safety problems. Work related to dust generation was carried out indoors. All works were carried out only during working hours and ended before 6 p.m.

151. During the period, no any traffic accident was noticed.

##### **4.6.2. Workers safety and health**

152. There were no accidents and/or serious incidents with the employees during the reporting period. The Contractors have appointed HSE Engineers. Contact information is shown in Table 2-1. Contractors' personnel are regularly instructed in safety and environmental protection. The Contractors' Safety Plan has been updated to include activities related to Covid-19. Workers are fully provided with the necessary PPE, first aid kits and sanitizers.

153. To protect the health and safety of workers, as well as surrounding communities, the contractors of each subproject shall conduct a workplace review and risk assessment for exposure to COVID-19. The Specialists conducted training on how to prevent the spread of COVID-19.

154. The specialists of contractors conduct regular briefings on safety and the use PPE during construction work.

#### **4.7. Training**

155. On March 30, training was held for contractors for Balykchy networks. Training on Environmental and Social safeguards was held in Balykchy PIU office. The trainers and participants are listed below:

**On behalf of PMO:**

- Zhundubaev Kylychbek - Environmental Protection Specialist
- Zhumabekov Mederbek - Specialist in Social Measures and Resettlement

**On behalf of DSC**

- Dolgov Yuri - Specialist in Social Measures and Resettlement
- Zinina Olga - National Environmental Protection Specialist
- K.Yu. Abramov – Construction Supervision Engineer

**On behalf of contractors for Balykchy networks:**

- A. Abdrakhmanov- Project Manager of Profit Express Ltd.
- U. Beishenaliev- Foreman of Profit Express Ltd.
- A. Akunov – Surveyor Engineer of Profit Express Ltd.
- S. Zhapiev – Project Manager of Impulse Osh Ltd.
- B. Zhapiev- HSE Engineer of Impulse Osh Ltd.

**On behalf of State Architectural and Construction Supervision:**

- T.B. Soodonbekova -Chief Inspector

**On behalf of Balykchy PIU, IWMP:**

- K.Z. Karasartov - Balykchy PIU Manager;
- N. B. Kendirbaeva - PIU Balykchy Office Manager/Translator, IWMP;

156. **Main training topics:**

- Work performed by the contractors according to the SSEMP
- Compliance with environmental and health and safety standards during the construction of sewage networks in Balykchy.
- Social Safeguards during the construction of sewage networks in Balykchy.

157. Environmental and Social safeguards trainings for the contractors of Karakol networks on ADB's requirements and national regulations was conducted on 17 May 2022.

**On behalf of PMO:**

- Zhundubaev Kylychbek - Environmental Protection Specialist

**On behalf of DSC**

- Dolgov Yuri - Specialist in Social Measures and Resettlement
- Zinina Olga - National Environmental Protection Specialist

**On behalf of contractors for Karakol networks:**

Minur Ltd.

- K.T. Mamyrbaev - Foreman
- B.Sh. Dadybaev - Health, Safety & Environment Staff

Consortium of Inzhenernaya Zashchita Ltd and Polymer Snab Ltd.

- B.N. Kozhomkulov - Foreman
- B. M. Urmanbetov - Health, Safety & Environment Staff

On behalf of Karakol PIU, IWMP

- K.Z. Karasartov - Balykchy PIU Manager;
- N. B. Kendirbaeva - PIU Balykchy Office Manager/Translator, IWMP;

**On behalf of Karakol PIU Manager. IWMP:**

A.K. Dzhanybekov - Karakol PIU Manager

O.I. Zavyalova - Project Consultant of CE Vodokanal

**158. Main training topics:**

- Work performed by the contractors according to the SSEMP
- Compliance with environmental and health and safety standards during the construction of sewage networks in Balykchy.
- Social Safeguards during the construction of sewage networks in Balykchy.

## **5. FUNCTIONING OF SEMP**

### **5.1. SEMP Review**

159. Prior to start of works the contractors are required to appoint a full-time environment, health and safety (EHS) officer for implementation of EMP/SSEMP, community liaising, reporting and grievance redressal on day-to-day basis.

160. SSEMP developed by the contractors for networks is used in all stages of civil works.



## 6. GOOD PRACTICES AND OPPORTUNITY FOR IMPROVEMENT

### 6.1. Good Practice

161.. The practice of collecting and transferring plastic bottles for further recycling is adopted based on the example of Minur Ltd. Bottles are collected jointly with Izumrud Tazalyk Service Company.



**Figure Container for plastic bottles**

162. During the reporting period, there were no other actions that could be considered good practice.

### 6.2. Opportunities for Improvement

163. In the construction of sewerage networks in the cities of Balykchy and Karakol, contractors use a phased method: earthworks to lay pipes every 50 meters, which ensures safety for the population and low environmental impact.

## 7. SUMMARY AND RECOMMENDATIONS

### 7.1. Summary

164. During the current reporting period the following activities have been carried out:
- The contract agreement is signed by the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction, Housing and Communal Services under the Cabinet of Ministers of the Kyrgyz Republic and the contractors.
  - Construction of sewerage networks of Balykchy, Issyk-Kul region". Lot 1 "Western" of Impulse-Osh LLC and Lot 2 "Eastern" of Profit-Express LLC.
  - On March 18, 2022, Consortium of CCCC Tianjin Dredging Co, Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co held a public consultation on Environmental Impact Assessment (OVOS) and Social Safeguards for construction of Balykchy Wastewater Treatment Plant (WWTP) under Issyk-Kul Wastewater Management Project in Balykchy City Hall.
  - On March 31, 2022, a public consultation was held on the Environmental impact assessment and Social Safeguards for the construction of a wastewater tank in Pristan-Przhevsk, 200 meters of discharge pipeline and modernization of 28 manholes on the main sewage collector in Karakol city. The public participation meeting was held in Karakol City Hall. Minutes of the Public participation meeting is attached.
  - Update of Balykchy WWTP;
  - Development of the Sludge Management Plan;
  - During the reporting period environmental safeguards trainings for representatives of Impulse Osh Ltd. and Profit-Express Ltd. on ADB's requirements and national regulations was conducted on 30/March/2022.
  - Environmental and Social safeguards trainings for the contractors of Karakol networks on ADB's requirements and national regulations was conducted on 17 May 2022.
165. The state ecological expert review was conducted by specially authorized environmental authorities (Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic (MNRETN) and territorial departments for environmental protection, and positive conclusions were obtained for the following projects: Environmental Protection Section of the design "Modernization and Rehabilitation of Balykchy Municipal Vodokanal's Wastewater Treatment Plant at Bereke Site, Kok- Moinok Aimak, Ton District".
- Design of the sanitary protection zone of Balykchy Municipal Vodokanal's Wastewater Treatment Plant
166. The DSC provided support to the contractors of Balykchy and Karakol networks during preparation of their SSEMPs.
167. The PMO approved SSEMPs of Impulse-Osh Ltd. and Profit-Express Ltd. (Lot 1 and Lot 2 in Balykchy), and the construction of sewage networks in Balykchy started in April.

168. The PMO approved SSEMPs of Minur Ltd. and the Consortium of Inzhenernaya Zashchita Ltd. and Polymer Snab Asia Ltd. (Lot 1 and Lot 2 in Karakol), and construction of sewage networks in Karakol city started in May.
169. Audits of the construction sites in the reporting period was carried out on March 30, 2022 and April 26, 2022 in Balykchy and on April 27 in Karakol to check the implementation of activities specified in the SSEMPs. In addition, the sites were visited on June 20 in Balykchy and June 21 in Karakol.
170. As the results of audits reports on monitoring are given in Appendix VII and regarding non-comformities, Corrective Action Plans and issued NCNs are explained in Appendix VIII- Non-conformity Track Table.

## **7.2. Recommendations**

171. Implement the monitoring system developed under the Environmental Safeguards Plan through additional training for contractors which construct the sewerage networks of Balykchy and Karakol.
172. Provide the assistance to CCCC Tianjin Dredging Co., Ltd, China Road and Bridge Corporation and China Northeast Municipal Engineering Design and Research Institute Co for Design and Build the Balykchy WWTP to obtain SSEMP and start the civil works.
- 173 Not all activities are always followed permanently; it is recommended to conduct training directly with the workers to improve the effectiveness.

## APPENDICES

Appendix I - Minutes of Public consultations on the Environmental Impact Assessment (OVOS) and social safeguards for the construction of Balykchy WWTP.

Appendix II – Minutes of Public consultation on the Environmental impact assessment and Social Safeguards for the construction of a wastewater tank in Pristan-Przhevalsk, 200 meters of discharge pipeline and modernization of 28 manholes on the main sewage collector in Karakol city.

Appendix III -Minutes of training for the Contractors of Balykchy networks on environmental and social safeguards during the construction of networks.

Appendix IV - Environmental and Social safeguards trainings for the contractors of Karakol networks on ADB's requirements and national regulations was conducted on 17/May/2022.

Appendix V - Conclusion of the State Environmental Expertise

Environmental Protection Section of the design "Modernization and Rehabilitation of Balykchy Municipal Vodokanal's Wastewater Treatment Plant at Bereke Site, Kok-Moinok Aimak, Ton District".

Design of the sanitary protection zone of Balykchy Municipal Vodokanal's Wastewater Treatment Plan

Appendix VI - General layout of Balykchy WWTP

Appendix VII - Reports on Monitoring of the Contractors

Appendix VIII – Non-Conformity Tracking Report