

Semi-Annual Environmental Monitoring Report

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Kyrgyz Republic: Central Asia Regional Economic Cooperation Corridors 1 and 3 Connector Road Project (Phase 2) - Additional Financing Section 1 (Lot 1) "Balykchy - Kochkor km. 0-km. 43", Section 2A (Lot 2) "Kochkor-Epkin (km 62+400-km 89+500)".

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Abbreviations

| | | |
|-----------------|---|--|
| ACP | - | Asphalt Concrete Plant |
| ADB | - | Asian Development Bank |
| CAREC | - | Central Asian Regional Economic Cooperation |
| CBT | - | Concrete Batching Plant |
| CO | - | Carbon Monoxide |
| CSC | - | Construction Supervision Consultant |
| DDPSSES | - | Department of Disease Prevention and State Sanitary and Epidemiological Surveillance of the Ministry of Health |
| dia. | - | diameter |
| EA | - | Executing Agency |
| EMP | - | Environmental Management Plan |
| EIA | | Environmental impact assessment |
| ES | - | Environment Specialist |
| NEPS | - | National Environmental Protection Specialist |
| IA | - | Implementing Agency |
| IBAT | - | Integrated Biodiversity Assessment Tool |
| IEE | - | Initial Environmental Examination |
| IES | - | International Environment Specialist |
| GC | - | General Contractor |
| GoKR | - | Government of Kyrgyz Republic |
| KGZ | - | Kyrgyzstan |
| km | - | kilometer |
| KR | - | Kyrgyz Republic |
| LARP | - | Land Acquisition and Resettlement Plan |
| LS | - | Left side |
| lm | - | Linear meter |
| m | - | Meter |
| m ² | - | Square meter |
| m ³ | - | Cubic meter |
| masl | - | Meter above sea level |
| MPC | - | Maximum Permissible Concentration |
| MPL | - | Maximum Permissible Level |
| MTOC | - | Ministry of Transport and Communication of KR |
| MEoC KR | - | Ministry of Economy and Commerce of the Kyrgyz Republic |
| MNRETS | - | Ministry of Natural Resources, Environment and Technical Supervision |
| MoCIT KR | - | Ministry of Culture, Information and Tourism of Kyrgyz Republic |
| MoF KR | - | Ministry of Finance of the Kyrgyz Republic |
| NRS | - | National Resettlement Specialist |
| NO ₂ | - | Nitrite |
| pcs | - | pieces |
| PIU | - | Project Implementation Unit |
| RS | - | Right side |
| SCEC | - | State Committee on Ecology and Climate |
| SCP | - | Stone Crushing Plant |
| SF | - | Supplemental Financing |
| SAEMR | - | Semi-annual Environmental Monitoring Report |
| SDRS | | Social Development and Resettlement Specialist |
| SAEPF | - | State Agency on Environmental Protection and Forestry Agency |
| SSEMP | - | Site Specific Environment Management Plan |
| TA | - | Technical Assistance |
| TOR | - | Terms of Reference |
| CHHS | | Cultural And Historical Heritage Sites |

1 INTRODUCTION.

1.1 Preamble.

1. Government of Kyrgyz Republic (GoKR) entered into supplemental loan and grant agreements with Asian Development Bank (ADB) for identification, design, implementation, and construction-supervision of Central Asia Regional Economic Cooperation Corridors 1 and 3 Connector Road Project (Phase 2) - Additional Financing Section 1 (Lot 1) "Balykchy - Kochkor km. 0-km. 43", Section 2A (Lot 2) "Kochkor-Epkin (km 62+400-km 89+500)" (The Project).
2. The Project is part of North-South Alternate Corridor which is a priority project in Sustainable Development Strategy of Government of Kyrgyz Republic.
3. Project involves rehabilitation of two road sections: Balykchy section from km 0 to km 43 and Kochkor – Epkin section from km 62+400 to km 89+500. For bidding and construction purposes, Balykchy section is referred to as Lot 1 and Kochkor-Epkin section is referred to as Lot 2. A location map of Project is shown in Figure 1.
4. Project is aimed at improving socio-economic conditions of Kyrgyz Republic regions through:
(i) shortened travel time for movement of people and goods between southern districts of Osh, Batken and Jalalabad and northern districts of Naryn, Issyk-Kul, Chui and Talas; (ii) reduced transport costs due to reduced route and better road conditions; (iii) increased local and international traffic and trade particularly between Kyrgyzstan and Tajikistan; (iv) increased income-generating opportunities for local people; (v) creation of new jobs; (vi) good condition of vehicles; and (vii) reduced transportation costs.



Figure 1. Project Location.

5. Project is classified as environmental "Category B" based on ADB Safeguard Policy Statement 2009 (SPS 2009). Accordingly, an Initial Environmental Examination (IEE) reports¹ that include an Environmental Management Plan (EMP) were prepared separately for two road sections by Ministry of Transport and Communication (MOTC) through an international consulting team. Each IEE contains recommended environmental management measures and monitoring programs. Their aim

¹ <https://www.adb.org/sites/default/files/project-documents/48401/48401-008-iee-en.pdf>
https://www.adb.org/sites/default/files/project-documents/48401/48401-008-iee-en_3.pdf

to ensure that identified negative environmental and social impacts associated with Project implementation will be avoided or at least minimized to acceptable levels. As required by IEE/EMP, the civil works Contractor prepared a Site-Specific Environmental Management Plan (SSEMP) for each lot. SSEMPs specified how Contractor would ensure compliance with SPS 2009, the IEE/EMP, and applicable laws and regulations of GoKR. Construction Supervision Consultant (CSC) monitors Contractor's implementation of SSEMP and thus, its compliance with IEE/EMP. monthly, quarterly, and semi-annual reports are prepared by CSC's environmental specialists and submitted to PIU. Semi-annual report is submitted by PIU to ADB for disclosing on ADB website, in line with SPS 2009.

6. This is the **tenth** semi-annual environmental monitoring report covering July - December 2024 period, for CAREC Corridors 1 and 3 Connector Road Project Additional financing for Lot 1 "Balykchy km. 0 - km. 43", Lot 2 "Kochkor-Epkin (km. 64 - km. 89)". Report describes environmental aspects, mitigation and monitoring measures undertaken by Contractor Sinohydro-Powerchina Roadbridge JV and construction supervision consultant Roughton International Ltd. and subconsultant RAM Engineering Associates LLC».

7. Report contains information on conducted works from Contractor and Construction Supervision Consultant.

1.2 Key Information.

8. All contract's major construction works have been completed. Since 1st December 2023 the Defects Notification Period (DNP) and the Performance Based Maintenance Contract (PBMC) began the period during which the Contractor is responsible to remedy any defective work which become apparent and road maintenance. DNP covers main rehabilitation project, including environmental monitoring. PBMC has a much smaller budget, so its monitoring will be less extensive, as major construction is complete and only maintenance remains DNP on this project is 36 months period has started. At same time, PBM's validity period includes 5 years, which ends on December 1, 2028. DNP and PBMC periods operate in parallel. DNP serves as guarantee period, meaning on one hand resolving "snag list" and on the other hand, supervising that there are no hidden defects. For PBMC, the responsibility covers all maintenance activities, as described in specifications. Elimination of identified defects and road maintenance are performed by Contractor in parallel

9. In 2020, during project site's control marks fixing, 1909 trees were identified as falling under "forced" cutting, of which: 160 pieces on Lot 1 and 1,749 on Lot 2. To minimize the impact on green spaces, Consultant and Contractor conducted a joint analysis of control marks. This reduced the number of trees cut down, preserving 83 trees. Contractor completed tree cutting in 2020. Contractor obtained all necessary permits for cutting. Prior to cutting down trees, the commission conducted a survey of green plantations and obtained all necessary permits from territorial bodies of Environmental Protection Agency: Permit for tree removal No. 000 461 dated November 3, 2020 from Naryn Territorial Department of State Agency for Environmental Protection and Forestry under GoKR. Act of survey of green plantations under GoKR Balykchy No. 006603 dated November 16, 2020, Permit for tree removal from Issyk-Kul Territorial Department of State Agency for Environmental Protection and Forestry under GoKR

10. Compensatory tree planting was completed in first half of 2024. Total 1,602 trees were cut down, and 3,534 trees were planted to replace the cut ones (at a ratio of 1:2).

for Lot 1 - 240 pieces of weeping willow saplings.

Lot 2 - 2134 pieces of seedlings (birch - 300 pieces, weeping willow - 300 pieces, poplar - 950 pieces. vinegar tree - 70 pieces, almonds - 30 pieces, common pine - 100 pieces, Tien Shan spruce - 20 pcs, Elm - 344 pcs.

In reporting period, an inventory of planted seedlings is:

During previous reporting period, survival rate of planted seedlings was monitored. According to monitoring results, the number of seedlings that did not take root/deceased amounted to 628 pieces.

In previous reporting period, 2225 out of 1670 seedlings were planted (actual plantings exceeded the planned amount)- compensatory planting to replace felled trees, and 581 dead seedlings out of 628 were restored. During reporting period, the Engineer did not monitor the survival rate of planted trees due to Environmental Specialist's absence or illness.

11. As reported in previous SAEMRs, for Lot 1 and Lot 2, all preparatory activities that are relevant to environmental management were completed by Contractor between 2020 and 2021. These include:

- preparation of SSEMP, Health and Safety Plan, and Covid-19 Prevention and Mitigation Plan. The SSEMP was approved by MoTC KG in October 2020.
- acquisition of permits or approval from local authorities and State Environmental Protection and Forestry Agency (SEPFA) for development and use of campsites, sites for construction facilities, quarry sites, and spoils disposal sites. Permits were received between September 2020 and May 2021.
- conducting an agreement with relevant agencies for solid waste collection, wastewater collection, and hazardous waste collection. Contracts with specialized companies were concluded in 2021 and were renewed every year.
- acquisition of temporary permit for use of quarry sites from the State Agency for Geology of Subsoil Use №03-5/682
- construction and/or development of campsites, field offices, asphalt plants, crushing plants, fabrication areas, machinery areas, quarries, scarified asphalt and spoils disposal sites, and auxiliary installations,
- conducting an agreement with Chui-Bishkek Territorial Laboratory of Department of State Agency for Environmental Protection and Forestry under GoKR to carry out instrumental monitoring of water and atmospheric air quality and with LLC "ProfiLab" for instrumental monitoring of vibration and noise levels in areas of high environmental sensitivity and with socially sensitive receptors along the Project alignment, and in the quarry areas. Contracts with laboratories for instrumental monitoring were concluded in April 2021 and were renewed every year.

12. In reporting period, instrumental environmental monitoring of environmental components' quality of: water, air, noise and vibration was not carried out, as it was completed in previous reporting period upon completion of main works on road construction.

The volume of completed construction work as of 30th December 2024 is presented below.

Scope of Construction Works.

| Work Item | Unit | Quantity (Original Plan) | | | |
|---------------------------|------|--------------------------|-----|---------|-----|
| | | Lot 1 | % | Lot 2 | % |
| Tree cutting | pcs | 122 | 100 | 1480 | 100 |
| Clearing and Grubbing | ha | 37 | 100 | 35 | 100 |
| Excavation | m3 | 116 485 | 100 | 42 823 | 100 |
| Existing Asphalt Break Up | km | 38 597 | 98 | 10 833 | 98 |
| Fill and Embankment | m3 | 205 306 | 100 | 93 725 | 100 |
| Culverts | set | 63 | 100 | 51 | 100 |
| Subgrade | m3 | 154 700 | 100 | 90 010 | 100 |
| Subbase | m3 | 220 850 | 100 | 125 000 | 100 |
| Base | m3 | 91 079 | 100 | 61 750 | 100 |
| Binder | m3 | 37 883 | 100 | 25 750 | 100 |
| Bridges | set | 4 | 100 | 1 | 100 |
| Gabions | pcs | 696 | 100 | - | 100 |
| Drainage | m | 1 569 | 100 | 139 | 100 |

| | | | | | |
|--|--|---|-----|---|-----|
| Parking near markets | Pcs | 4 | 100 | 2 | 100 |
| Parapet fence | pcs | 1 339 | 100 | 946 | 100 |
| Reconstruction of communication lines <ul style="list-style-type: none"> • Overhead line -10kV • Overhead line - 0.4 kV • Communication line • Lighting poles • PVC pipes | poles poles poles pcs l.m. | 8 - 14 193 848 | 100 | 22 7 - 337 820 | 100 |
| Others | | Tree planting Archaeological survey and monitoring Removal of bus stops Environmental monitoring Auxiliary facilities | 100 | Tree planting Archaeological survey and monitoring Removal of bus stops Environmental monitoring Auxiliary facilities | 100 |

2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES.

2.1 Project Description.

2.1.1 Project Rationale and Project Area.

13. Kyrgyzstan is a mountainous and landlocked country, where regional trade is heavily dependent on roads which dominates Kyrgyzstan's transport system. There is no rail or water transport network while air transport is expensive and not suitable for mass transport and freight.

14. Central Asia Regional Economic Cooperation Corridors 1 and 3 Connector Road Project (Phase 2) - Additional Financing Section 1 (Lot 1) "Balykchy - Kochkor km. 0-km. 43", Section 2A (Lot 2) "Kochkor-Epkin (km 62+400-km 89+500)" will connect two major CAREC regional corridors by rehabilitating an existing but narrow connector road. It is part of the North-South Alternative Corridor, a priority project in the National Sustainable Development Strategy.

15. Entire road corridor lies within Northern and Inner Tien Shan Mountain ranges. Route passes through mountains and plains of Issyk-Kul region at altitudes between 700 meters and 3,500 meters above sea level (masl), crossing Chu River valley. Based on Köppen Climate Classification System (BSK), Issyk-kul region has mid-latitude steppe climate which is described as continental with cold winters and hot summers. Difference between mid-summer and mid-winter temperatures can be extreme and areas of permafrost are notable.

16. Section 1 (Lot 1), the Balykchy Project section, is 43 km long and runs from east to south-west. It begins at a traffic circle located at the entrance to Balykchy City. Five roads converge at this point, one of which is a section of CAREC road heading south. Lot 1 follows the existing highway up to km 43. The first 29 km of the road is within Ton District (District) of Issyk-Kul Region (Province) while the remaining 14 km is within Kochkor District of Naryn Region. The road elevation at km 0 is 1,632masl while the elevation at km 43 is 1,756 masl. Throughout the road section, the elevation ranges from 1,610masl to 1,820masl. Figure 2 shows the general topography of areas traversed by Lot 1.

17. Kochkor-Epkin road section (Lot 2) is 25 km long and runs from east to west. It begins at junction of three roads (km62+400) in Kochkor town where Bishkek-Naryn-Torugart Highway serves as a detour for Kochkor town and this road section. Road follows existing highway and ends at km89+500 in Epkin. Entire road section is within Naryn region and crosses only Kochkor District. Kochkor is center of Kochkor District of Naryn region.

18. Areas surrounding the roadway are vast agricultural lands used for crop and livestock production. Kochkor has rolling and mountainous terrain which is covered with grasses suitable for grazing. Kochkor Valley is bounded by Kyzart mountain ridges on north and Karagatty Kyzart on south. Mountainous region has a very dissected relief with high slopes. Elevation in valley ranges from 1,700masl to 2,400masl. Road elevation at km 62+400 (beginning of ot 2) is 1,845masl while the elevation at km 89+500 (end of Lot 2) is 2,080masl. Elevation along entire road section ranges

from 2,400masl to 4,502masl. Figure 3 shows general topography of areas traversed by Lot 2.

Figure 2. Topographical Map of Areas Traversed by Lot 1.



Figure3. Topographical map of Areas Traversed by Lot 2



2.1.2 Basic Project Information.

19. Basic information concerning the Project loan, consulting services and construction contracts are summarized in Table 1.

Table 1. Basic Project Information.

| Item | Description |
|---|---|
| Project Name | Kyrgyz Republic: CAREC Corridors 1 and 3 Connecting Road Project, Phase 2 (Additional Financing) |
| Funding Agency | Asian Development Bank |
| Project References | Project number: TA-8887 KGZ Loan number: ADB Loan 3432-KGZ (SF) Grant number: 0496-KGZ (SF) |
| Executing Agency (EA) | Ministry of Transport and Communication of the Kyrgyz Republic (MOTC) |
| Implementing Unit | Project Implementation Unit (PIU) under MOTC |
| Construction Supervision Consultant (CSC) | Roughton International Ltd., and RAM Engineering Associates LLC |
| Date of CSC contract | 14/02/2017 |
| Notification for CSC's work commencement | 20/05/2020 |
| Civil Works Contractor | Sinohydro-Powerchina Roadbridge JV |
| Approved subcontractors | <ul style="list-style-type: none"> • Arek Story LLC • Balkchi Trans LLC • Shera Trans LLC. • Jumgalsuukurulush Open Joint Stock Company <p>In 2021 Shera Trans was replaced by Kyrgyzgidrospectstroy LLC as a consortium partner with Zhagalmay LLC</p> |
| Road Sections covered by Contract | Total length of two road sections - 68 km |
| Lot 1 | Balykchy - 43 km |
| Lot 2 | Kochkor – Epkin - 25 km |
| Notice to commence works | 22/06/2020 |
| Completion date (original) | 22/06/2022 |
| Completion date (Revised) | 21 June 2023 |
| Time to finish – days | 730 days |
| Extension - days | First extension (delay due to COVID-19) 365 days |
| Warranty period - days | 36 months |
| Contract Amount | |
| Lot 1 | USD 22,671,896.26 |
| Lot 2 | US\$ 17,537,958.57 |

2.1.3 Scope of construction works and technical specifications.

20. Project was designed in accordance with Kyrgyz Highway Standard (SNIP 32-01:2004), with geometrical and structural requirements up to Technical Category II (main streets of city importance). Lane width 3.5m – 3.75m; width of carriageway 7.00m – 7.50 m; width of shoulder 3.25m – 3.75m (of which 0.50m - 0.75m will be paved). Average total road width is 15m. Road rehabilitation includes repair or replacement of existing small bridges and culverts, construction of side drains and other drainage facilities, construction of retaining walls for river protection where needed, provision of road signs and road markings, and construction of bus stops and one

underground crosswalk. Scope of works is summarized in Table 2 while the technical specifications are summarized in Table 3.

Table 2. Scope of Construction Works.

| Work Item | Unit | Quantity (Original Plan) | |
|--|--|---|---|
| | | Lot 1 | Lot 2 |
| Tree cutting | pcs | 30 | 38 |
| Clearing and Grubbing | ha | 37 | 35 |
| Excavation | m3 | 116 485 | 42 823 |
| Existing Asphalt Break Up | km | 38 597 | 10 833 |
| Fill and Embankment | m3 | 205 306 | 93 725 |
| Culverts | set | 63 | 51 |
| Subgrade | m3 | 154 700 | 90 010 |
| Subbase | m3 | 220 850 | 125 000 |
| Base | m3 | 91 079 | 61 750 |
| Binder | m3 | 37 883 | 25 750 |
| Bridges | set | 4 | 1 |
| Gabions | pcs | 696 | - |
| Drainage | m | 1 569 | 139 |
| Parking near markets | Pcs | 4 | 2 |
| Automobile pavilion | pcs | 8 | 11 |
| Parapet fence | pcs | 1 339 | 946 |
| Reconstruction of communication lines <ul style="list-style-type: none"> • Overhead line -10kV • Overhead line - 0.4 kV • Communication line • Lighting poles • PVC pipes | poles poles poles pcs l.m. | 8 - 14 193 848 | 22 7 - 337 820 |
| Others | | Tree planting Archaeological survey and monitoring Removal of bus stops Environmental monitoring Auxiliary facilities | Tree planting Archaeological survey and monitoring Removal of bus stops Environmental monitoring Auxiliary facilities |

* Note: Increased to 1704 trees based on actual survey

Table 3. Technical Specifications.

| Item | Specification | Remarks |
|---|---|--|
| Number of traffic lane | 2 | |
| Traffic lane width | 3.5m to 3.75m | |
| Width of carriageway | 2 x 7.5m | |
| Shoulder width | 3.25m to 3.75m | Of which, 0.5m to 0.75m should have covering |
| Total width of carriageway | 15m | |
| Design axle load | 11.5 tons | |
| Width of the road right-of-way | 30m to 60m | |
| Road Pavement | | |
| • Top pavement (SMA) layer | 6 cm thickness; vol. 42,505 m ³ | |
| • Coarse-grained asphalt at junctions | 5 cm thickness vol. 682 m ³ | |
| • Leveling layer | 9 cm thickness; vol. 63,633 m ³ | |
| • Base course | 20cm thickness; vol. 152,829 m ³ | |
| • Sub-base course | 25cm thickness; vol. 345,850 m ³ | |
| • Asphalt concrete mixture on sidewalks | 4cm thickness; vol. 434 m ³ | |

2.1.4 Summary of Identified Negative Impacts of Project Implementation.

21. Based on EIA reports for Lot 1 and Lot 2, majority of negative environmental impacts arising from project implementation will occur during construction phase, but some impacts will occur during operation phase.

22. Identified potential negative impacts during Project construction phase include:

- noise and vibration
- generation of dust and air emissions from earthworks and from the operation of vehicles, construction equipment, concrete batching plants, asphalt batching plants and rock crushing plants
- impacts on water courses (siltation, deterioration of water quality)
- impacts of quarrying (removal of vegetation, changes in landscape, soil erosion/landslide, degradation of soil quality)
- impacts on soil due to removal of trees and vegetation
- Impacts resulting from rehabilitation of bridges and drainage structures,
- Impacts from operation of campsites, and
- Impacts on historical and archaeological sites

23. Identified potential negative impacts during Project operation phase include:

- increase in gas emissions
- increase in noise levels
- increase in traffic accidents involving pedestrians and vehicles, and
- increased risk of accidents associated with possible spills of harmful substances attributable to increased traffic and high vehicle speeds due to good road surface.

24. Satisfactory management of noise, airborne pollutant emissions, and vibration are of particular importance to communities near the road and in places where sensitive receptors such as schools, hospitals, mosques, etc. are located.

2.2 Project Contracts and Management.

2.2.1 Project Management.

25. The Borrower and Executing Agency (EA) for Kyrgyz Republic is Ministry of Transport and Communication (MOTC). Project Implementation Unit (PIU) under MOTC is implementing agency directly responsible for overseeing execution of contracts, financial management, and for ensuring compliance with loan conditions. PIU is supported by Construction-Supervision Consultant (CSC), Roughton International Ltd., and Sub-consultants RAM Engineering LLC. CSC supervises civil works to ensure quality and progress in accordance with construction contracts. CSC is also responsible for ensuring Project's compliance with ADB's social and environmental safeguards. Construction of project roads is being undertaken by Joint Venture Sinohydro Corporation Ltd – Power China Road Bridge Group Co. Ltd. (Sinohydro-Powerchina Roadbridge JV) which was awarded the contracts for both Lot 1 and Lot 2. Sinohydro-Powerchina Roadbridge JV, General Contractor (GC) is supported by local subcontractors approved by PIU (Arek Stroy LLC).

26. Other agencies involved in Project include Ministry of Finance (MOF), Ministry of Natural Resources, Environment and Technical Supervision (MNRETS), and Department of Disease Prevention and State Sanitary and Epidemiological Surveillance of Ministry of Healthcare (DDPSSES).

27. Functions, roles, and/or responsibilities of entities involved in Project management are summarized in Table 4. Table 5 lists names and contact numbers of persons involved in social and environmental safeguards implementation

Table 4. Functions, Roles, and Responsibilities of Entities involved in Project Management.

| Agency/Entity | Function/Roles/Responsibilities |
|--|--|
| Asian Development Bank | Lending institution. Provides financing for Project and ensures Project implementation follows ADB project cycle. Provides project management support to MOTC and PIU. Monitors Project implementation through regular missions. Provides workshops and seminars for staff of EA, PIU, CSC and Contractor on project management, procurement, contracting of consulting services, disbursement, accounting, and financial management, and on social and environmental safeguards. |
| Ministry of Finance of the Kyrgyz Republic | Authorized state body responsible for coordination with ADB and other donors regarding external assistance issues. |
| Ministry of Transport and Communication of KR | Responsible for development of transport sector and is EA for project. MOTC has overall responsibility for planning, design, implementing and monitoring of project. PIU operates under MOTC and performs tasks assigned from MOTC. |
| Project Implementation Unit | Implementing agency directly responsible for supervising contracts implementation, financial management, and for ensuring compliance with loan conditions, including social and environmental safeguard requirements. |
| Ministry of Natural Resources, Environment and Technical Supervision | Lead Government Environment Protection Agency is responsible for governmental environment policy and coordinates with other governmental agencies. Functions include: <ul style="list-style-type: none"> – development of environmental policy and implementation; – carrying out state environmental expertise; – issuing environmental licenses; – environmental monitoring; supervision of compliance with environmental legislation, established rules, limits and norms of natural resource use, standards for emissions and discharges of pollutants and waste disposal in natural environment; |
| | Lead Government Environment Protection Agency is responsible for governmental environment policy and coordinates with other governmental agencies. Functions include: <ul style="list-style-type: none"> – development of environmental policy and implementation; – carrying out state environmental expertise; – issuing environmental licenses; – environmental monitoring; – supervision of compliance with environmental legislation, established rules, limits and norms of natural resource use, standards for emissions and discharges of pollutants and waste disposal in the natural environment; |
| Department of Disease Prevention and State Sanitary and Epidemiological Surveillance of the Ministry of Health | Supervises sanitary and epidemiological well-being of population, safety of goods, products, environmental facilities and conditions, prevention of harmful impact of environmental factors on human health |
| Construction Supervision Consultant | Supervises construction works to ensure quality and progress of works in accordance with construction contracts. CSC is also responsible for ensuring Contractor's compliance with ADB's social and environmental safeguards. |
| General Contractor | Responsible for execution of construction works and all works covered by construction contract in accordance with technical specifications. Also responsible for implementation of ADB social and environmental safeguards as specified in contract agreement with IA. |
| Subcontractors | Execution of construction works covered by sub-consultancy agreement with GC in accordance with technical specifications. Subcontractors are also responsible for implementation of ADB social and environmental safeguards in same manner as GC |

2.2.2 Management of Social and Environmental Aspects.

28. ADB has appointed a Country Environmental Coordinator and a team of permanent social and environmental specialists to monitor the Project's compliance with ADB's social and environmental safeguards. ADB team conducts site visit missions regularly during Project implementation to check social and environmental conditions.

29. MOTC has designated PIU Environmental Officer to take charge of matters relating to environment aspects of Project.

30. Table 5 lists names and contact information responsible of project's social and environmental management.

2.2.3 Construction-Supervision Consultant's Team.

31. Roughton International, Ltd. and Sub-consultants RAM Engineering LLC, as construction supervision consultant are mainly responsible for ensuring Main Contractor and its subconsultants are carrying out works in accordance with contract conditions and technical specifications. CSC is also responsible for ensuring Project's compliance with ADB's social and environmental safeguards as well as her involvement in PBMC period. CSC's organizational structure is shown in Figure 4. List of staff as of 30th December 2023 is shown in Table 6.

32. CSC's team has National Environmental Protection Specialist (NEPS), National Resettlement Specialist (NRS), and National Archeologist. SDRS is responsible for monitoring and reporting on progress of resettlement activities and status of compliance with social safeguards. NEPS is responsible for preparing SAEMR reports, and providing monitoring and supervision functions regarding Contractor's compliance with environmental safeguards reflected in IEE-EMP and SSEMP. They also provide guidance to environmental staff of Contractor on rectification of environmental non-compliance issues. Contractor has designated a national Environmental Specialist (ES) who is mainly responsible for implementation of Contractor's SSEMP commitments. Contractor's ES is also responsible to supervise instrumental monitoring of noise, vibration, water quality, and air quality which Contractor has sub-constructed to an accredited laboratory.

Table 5. Contact Information of Persons responsible of Social and Environmental Management.

| No | Organization | Designation | Name | Contact information |
|----|---|--|--------------------|--|
| 1 | ADB | Country Environment Focal | Lizandro C. Racoma | lracoma@adb.org |
| 2 | ADB Resident Mission in Kyrgyz Republic | National Environmental Consultant | Sultan Bakirov | Sbakirov.consultant@adb.org |
| 3 | PIU under MOTC | PIU Environmental Officer | Abdygulov Asylbek | asylbeka@piumotc.kg |
| 4 | Roughton International Ltd., and sub-consultant RAM Engineering Associates LLC. | National Environmental Protection Specialist | Akmatova Nasiba | ahmatovanm@gmail.com |
| 5 | Sinohydro-Powerchina Roadbridge JV. | Contractor's National Environmental Specialist | Beisheev Isake | isake.beysheev@bk.ru |

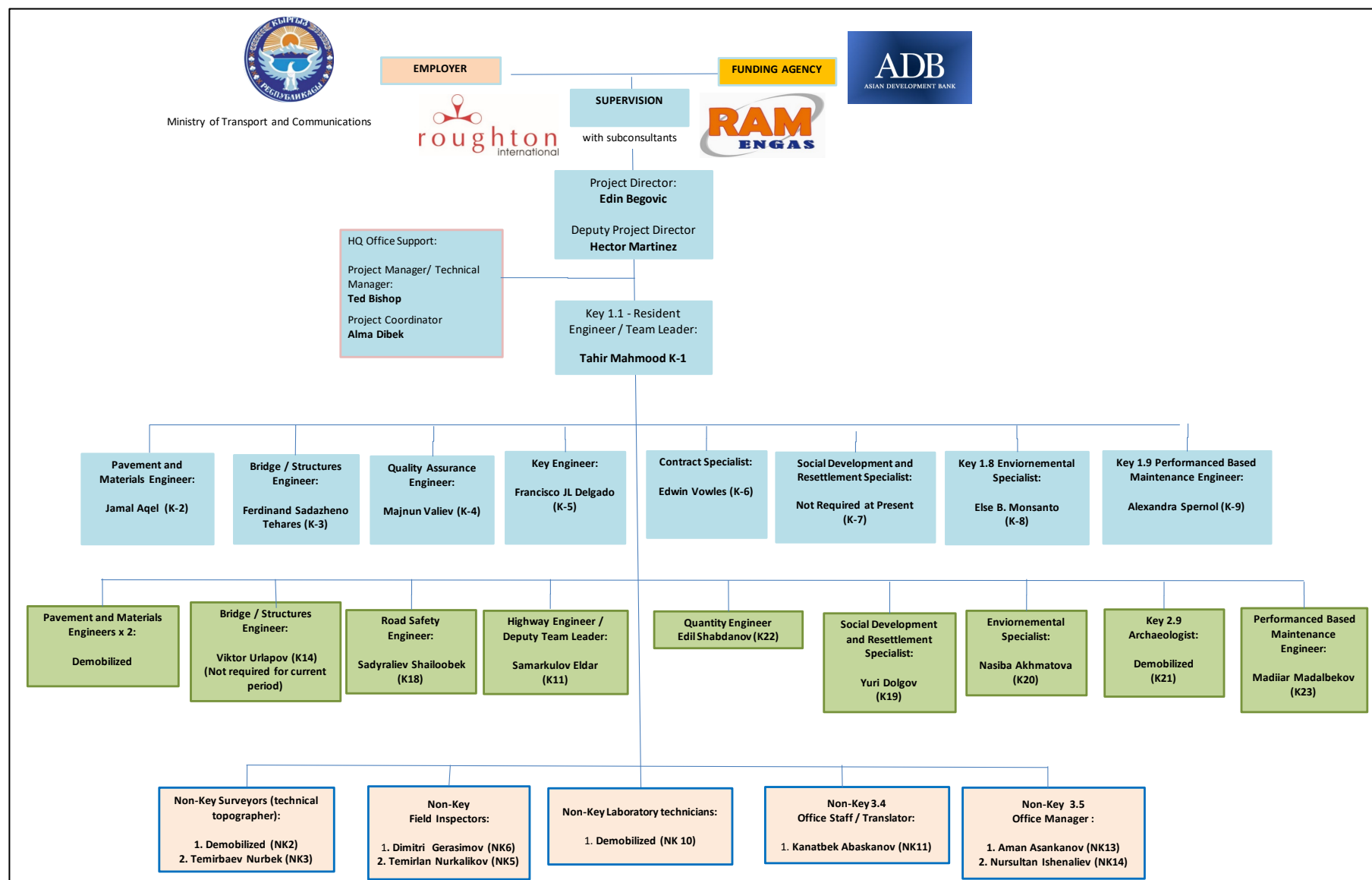


Figure 4. Organizational Structure of the Construction Supervision Consultant.

Table 6. List of Consultant's Staff.

| International staff | |
|-------------------------------------|---------------------------------------|
| Project Director | Edin Begovich |
| Resident Engineer-Team Leader | Tahir Mahmood |
| Contract Specialist | Ed Vowles |
| PBM Engineer | Alexandra Spagnol |
| Road Safety Engineer | Francisco Javier Lopez Delgado |
| Local staff | |
| DTL | Eldar Samarkulov |
| Pavement and Materials Engineer – 1 | Torobek Osmonov |
| Quality Engineer | Murat Kasianov |
| Road Safety Engineer | Shailoobek Sadyraliev |
| Quantity Engineer | Edil Shabdanov |
| Office manager – 1 | Aman Asankanov |
| Office manager – 2 | Nursultan Ishenaliev |
| PBM Engineer | the replacement procedure is underway |
| Topographer – 2 | Mayrambek Sabyraliev |
| Topographer – 3 | Temirbaev Nurbek |
| Site Inspector – 2 | Sagymbaev Aibek |
| Site Inspector – 3 | Dmitrii Gerasimov |
| Laboratory Technician | Temirlan Nurkalikov |
| National Environmental Specialist | Nasiba Akhmatova |
| Resettlement Specialist | Yuri Dolgov |

2.3 Project Activities During Current Reporting Period.

2.3.1 Road construction works.

33. The road was completed on Lot 1 in the second half of 2023.

34. During road construction period the following scope of work was performed:

- **Clearing and grubbing.** Works cover 37 ha under initial project and completed- 100 %.
- **Excavation.** Amounted of soil excavation is 37,489 m³. Total work implementation from beginning of the project to December 2023 was 110%.
- **Removing existing asphalt.** In 2023, asphalt removal work on the project road section of 43 km was 100% complete.
- **Backfill and earthen embankment:** from project implementation start to December 2023, the fulfillment of works amounted to - 124 %.
- **Subgrade.** Earth bed construction of 42.92 km and includes paving and compaction of 399,940 m³. Total execution of works from the project start to report period start 100 %.
- **Subbase:** Subbase works are carried out on a total road length of 42.92 km and include laying and compaction of 260,095 m³ of subbase material, 39,245 m³ on shoulders and 220,850 m³ on the main road. The overall execution of works since the project commencement as of July 2024 is 100%.
- **Base.** Base course works with total length of 42.92 km include paving and compaction of 92,737 m³ of base course material. The total execution of works since the start of the project as of July 2024 is 100%.

- **Binder:** Project involves paving and compaction of binder course on 42.92 km with a total volume of 38,390 m³. Total completion of works since the beginning of the project implementation at the beginning of the reporting period - 100%.
- **SMA Asphalt Pavement:** Project involves paving and compaction of asphalt on 42.9 km of road with total volume of 25,339 m³. The total execution of works since project start as of July 2024 is 100%.
- **Culverts:** Project involves construction of 63 culverts. Culverts' construction was 100% completed.
- **Bridge.** Project includes the construction of one bridge at km 12+063, which was completed in the first half of 2023.

35. Main works performed in the reporting period (Photo 1-14): installation of parapets, poles and permanent road signs, cleaning of the project road, cutting of slopes, earth works on sidewalk construction, works on asphaltting of sidewalks. The scope of works is shown in Table 7.



Photo 1. Lot 1. Embankment for sidewalk at km 1+950-2+100 RHS. July 2024.



Photo 2. Installation of curbs for sidewalk at km 1+360-1+800 RHS. July 2024.



Photo 3. Lot 1. Installation of lighting poles at km 0+000-3+000 LHS. July 2024.



Photo 4. Lot 1. Arrangement of asphalt on sidewalks km 0+750-1+340 LHS. July 2024.



Photo 5. Lot 1. km 8, landmarks have been established. August 2024



Photo 7. Lot 1. Arrangement of asphalt pavement on exits at km 22+641 LHS. September 2024



Photo 9. Lot 1, Laying of white edge marker line at km 0+060-3+000. October 2024.



Photo 11. Traffic light pole, km 2+705. November 2024.

Photo 6. Sidewalk paving on km 2+050-2+414 LHS. September 2024.



Photo 8. Lot 1, km 0-0+500 lighting, sidewalk and curb work completed (km 0+300). October 2024



Photo 10. Painting of parking lot curbs at km 0+060-0+230. October 2024.



Photo 12. Construction of toilets, km 31+040. November 2024



Photo 13. Lot 1. Bus stop, km 0+270. November 2024.



Photo 14. Lot 1. Exit marking of km. 13+800 RHS. November 2024.

Table 7: Scope of Work for Lot 1

| № | Description | Unit rate | Per project | Completed | Incomplete | % Incomplete work | Notes |
|----|------------------------------|-----------|-------------|-----------|------------|-------------------|---|
| 1 | Reinforced concrete chutes | m | 1611 | 1611 | | 100% | |
| 2 | Reinforced concrete parapets | pcs | 2697 | 2697 | | 100% | Defect remediation work is expected in the spring of 2025 |
| 3 | Signal posts | pcs | 1105 | 1105 | | 100% | Completed |
| 4 | Road signs | pcs | 271 | 271 | | 100% | Defects are not fully eliminated (some road signs have defects that can be eliminated only in warm climate period) |
| 5 | Road markings | m | 146894 | 146894 | | 100% | Defects are not fully eliminated (some road signs have defects that can be eliminated only in warm climate period) |
| 6 | Bus stops | pcs | 14 | 14 | | 100% | |
| 7 | Sidewalk | m | 4702 | 4702 | | 100% | |
| 8 | Road exits | pcs | 45 | 45 | | 100% | |
| 9 | Lighting | pcs | 193 | 193 | | 100% | Not connected to electric network. Municipality of Balykchy city is working on obtaining an order for connection of road lighting |
| 10 | Road culverts at exits | pcs | 6 | 6 | | 100% | |
| 11 | Railway crossing km1+300 | set | 1 | 0,85 | 0,15 | 15% | Work is underway to assemble cabinets |
| 12 | Traffic light km2+700 | set | 1 | 1 | | 100% | Not connected to power grid |
| 13 | Toilet | pcs | 2 | 1 | 1 | 50% | Work stopped due to weather conditions |
| 14 | Road shoulders | km | 86 | 86 | | 100% | |

36. Lot 2 the following works were carried out at the beginning of the reporting period:

- **Clearing and grubbing.** Original project covers 35 ha of works. Clearing and grubbing works are 100% complete as of the beginning of the reporting period.

- **Excavation:** This item includes the excavation and disposal of unsuitable soil resulting from rock excavation and road construction. Total excavation for project is 9,045 m³. Excavation volume at the beginning of the reporting period amounted to 25,587 m³. The total fulfillment of works since the beginning of the project implementation at the beginning of the reporting period amounted to 124 %.
- **Removal of Existing Asphalt.** At the beginning of current reporting period, old asphalt had been removed from entire 27.1 km project site (shown in Table 15).
- **Fill and embankment:** Project involves work amount of 93,725 m³. Works under the Project have been completed. The total volume of works completed since the beginning of the Project at the beginning of the reporting period amounted to 142,523 m³ - 152%;
- **Subgrade:** Project's excavation works to be carried out with total length of 27.1 km in the amount of 90,010 m³. As of the beginning of the reporting period, 100 % of subgrade works were completed.
- **Subbase:** Subbase works are carried out on a total road length 27 km and include installation and compaction of 152,626 m³ of subbase material; 26,220 m³ for shoulders and 126,516 m³ for the main road. The overall execution of works has been completed and since the beginning of the project implementation at the beginning of the reporting period amounted to 100%.
- **Base.** Base course requirement according to original project is 62,300 m³. Base layer works are 100% complete as of the beginning of the reporting period.
- **Binder:** Binder and wearing course paving and compaction on road with a total length of 27.1 km and a volume of 62,300 m³. Binder course works 100% complete as of the beginning of the reporting period.
- **Reinforced Concrete Pipes.** Project involves the construction of 45 culverts. Construction of 45 culverts was completed in previous reporting period. (There wasn't any asbestos – containing materials used during construction)
- **Bridge:** Project involves construction of bridges at km 65+410, km 68+044, km 86+261 and km 88+795. Bridge construction was 100% complete at the beginning of the reporting period.

37. The main works performed in reporting period (Photos 15-27): construction of shoulders, sidewalks, stops, construction of exits and lighting in settlements, installation of parapets, poles and permanent road signs, sanitary cleaning of project road, slope cutting, works on asphaltting of sidewalks. The scope of works performed in the reporting period is shown in Table 8.



Photo 15. Arrangement of asphalt on sidewalk, km 70+100-70+740 LHS. July 2024.



Photo 16. Sidewalk paving, km 70+000-70+450 LHS. July 2024.



Photo 17: Application of prime coat on exits at km 65+648. July 2024



Photo 18. Completion of shoulders, curbs and lighting. August 2024



Photo 19: Installation of lighting devices at km.86+100-87+700 BS. September 2024



Photo 20. Asphalt paving on sidewalk, km 2+050-2+414 LHS. September 2024.



Photo 21. Installation of traffic signs at bus stops. October 2024.



Photo 22: Completion of shoulders, curbs and lighting. October 2024.



Photo 23: Laying sand-salt mixtures on roadsides for winter maintenance roads for winter maintenance. October 2024.



Photo 25. Km 62. Painting of curbs on the roundabout. October 2024.

Photo 24. Km 87. Backfilling of road shoulder material. October 2024.



Photo 26. Clearing snow and sprinkling sand on Lot 2 to remove ice. November 2024.



Photo 27. Underpass, 86+385 LHS. November 2024.

Table 8: Scope of Work for Lot 2

| Nº | Description | Unit rate | Per project | Completed | Incomplete | % Complete work | Notes |
|----|------------------------------|-----------|-------------|-----------|------------|-----------------|---|
| 1 | Reinforced concrete chutes | m | 471 | 471 | | 100% | |
| 2 | Reinforced concrete parapets | pcs | 1423 | 1423 | | 100% | Defect remediation work is expected in the spring of 2025 |
| 3 | Signal posts | pcs | 720 | 720 | | 100% | |
| 4 | Road signs | pcs | 232 | 232 | | 100% | Defects are not fully eliminated |
| 5 | Road markings | m | 94526 | 94526 | | 100% | Defects are not fully eliminated |
| 6 | Bus stops | pcs | 13 | 13 | | 100% | |
| 7 | Underground crosswalk | pcs | 1 | 0.95 | 0,05 | 95% | Lighting and waterproofing are not completed |
| 8 | Sidewalk | m | 7367 | 7367 | | 100% | |

| | | | | | | | |
|----|----------------------------|-----------|------|------|-----|------|--|
| 9 | Exits with asphalt surface | pcs | 90 | 90 | | 100% | |
| 10 | Entrances without asphalt | pcs | 63 | 63 | | 100% | |
| 11 | Lighting | pcs | 324 | 324 | | 100% | Not connected to the electricity supply There is a dispute between the Contractor and the local Regional Power Distribution Network regarding the responsibility for road lighting |
| 12 | Tree planting | pcs | 3408 | 3270 | 138 | 96% | |
| 13 | Restoration of dead trees | Pcs. | 628 | 581 | 47 | 93% | |
| 14 | Barrier fencing | m | 158 | 158 | | 100% | |
| 15 | Curbs | kilometre | 54,2 | 54,2 | | 100% | |
| 16 | The lawn at roundabout | pcs | 1 | 0 | 1 | 0% | Not initiated |

2.3.2 Other Works.

38. Aside from activities involving the major road work items, during current reporting period, Contractor carried out following activities to support project operations and to fully comply with other contractual obligations as stipulated in contract and technical specifications.

- Maintenance of project information sign boards, safety sign boards, and other safety warning devices for traffic, worker safety, and public safety (Photos 51-52)
- Keep record of complaints and grievances

Contractor's Campsite and Facility Area for Lot 1. (Balykchy-Kochkor 00+00 to 43+00).

39. Contractor's Production Base and Camp dismantling, which started in December 2023, was completed in January 2024. The land reclamation used for the Manufacturing Base and Residential Camp was completed in January and handed over to landowner in February in accordance with KR regulations.

Contractor's Campsite and Facility Area for Lot 2.

40. Contractor's Camp Lot 2 is located at Section 2A "Kochkor-Epkin" 81 km, 250 meters from project site, area 4.5 ha (Figure 7). All necessary documents/approval from local authorities and coordination of state environmental protection agencies have been received (Letter to village administration of Cholpon on allocation of land plot no. 310 dated 27.05.2020. Resolution of deputies' session VI convocation of Cholpon village administration No. 35/4 dated 12.06.2020 on allocation of site for temporary use for camp and production base, Permit of Naryn Territorial Department of Environmental Protection No. 45 dated 17.08.2020 Letter No. 02-4/553 dated 17.08.2020). The Contractor's camp will operate during PBM period

41. Camp site is fenced and landscaped with tree planting. Within camp site are located: office, medical unit with a doctor and first aid facilities, living premises for Contractor's personnel, construction equipment parking area, canteen with a kitchen block. Accommodation for international and national staff and workers who do not reside in the area has a capacity of 45 persons. Each living room has an ensuite bathroom, shower room.

42. Emergency and firefighting measures are available. Fire extinguishers and fire boards are strategically distributed outside buildings, and rooms inside buildings are equipped with automated fire extinguishing systems. Various informational materials about COVID-19 and fire safety, emergency response is placed around buildings. During reporting period sanitary condition of camp space, living and working facilities were in good condition.

Figure 5. Location of Lot 2 Contractor's Campsite and Facility Areas.



Lot 2 site area with crushing plant in the foreground and Contractor's camp in the background.

Personnel information.

43. During reporting period, total number of Main Contractor and Subcontractor personnel averaged 65, mostly locals. Main Contractor signed contracts with following subcontractors approved by Engineer:

- Arek Sroy LLC (Contractor's letter dated June 20, 2020)
- Shera Trans LLC (Contractor's letter dated August 6, 2020) – completed their cooperation with main Contractor on July 2023
- Zhumgal Suu Kurulush OOO (Contractor's letter dated 5 July 2021) completed their cooperation with main Contractor on July 2022

44. Table 9 provides a summary of Contractor's personnel information.

Table 9. Contractor's Personnel.

| Personnel | Contractor SINOHYDRO | |
|--------------------------------------|-------------------------|---------|
| | Local (Lo 1, Lot 2) | Foreign |
| Administrative/ Engineer/ Technician | 10 | 12 |
| Operators and drivers | 8 | |
| Skilled workers | 12 | |

| | | |
|-----------------|-----------|--|
| Unskilled labor | 23 | |
| Others | | |
| <i>Subtotal</i> | | |
| TOTAL | 65 | |

2.4 Description of Changes in Project Design.

45. No design changes in this reporting period.

2.5 Description of changes in agreed methods of construction.

46. No changes have been made to construction methods.

3. ENVIRONMENTAL SAFEGUARD ACTIVITIES.

3.1 General Description of Environmental Safeguard Activities.

47. All environmental safeguard activities of Contractor are based on approved SSEMP (for Lot 1 approved in October 2020, for Lot 2 approved in November 2020). Contractor's Environmental Protection Specialist (EPS) is primarily responsible for the implementation of Contractor's environmental protection commitments as specified in SSEMP. Contractor's Project Manager provides necessary resources and management support to put all relevant plans into action. Among others, the Contractor's safeguard activities include: (i) securing all needed environmental permits for temporary use of some land, and for Contractor's facilities' installation and operation; (ii) consultations and dialogues with local communities to explain project activities and to resolve public grievances (during reporting period there were no complaints). The Contractor's environmentalist routine conducts dialogues with local communities during site inspections to clarify project activities and resolve public complaints; (iii) carrying out monitoring by contractor's and consultant's environmental specialist, the construction sites and facilities to ensure that conditions are in accordance with the ADB SPS 2009, IEE-EMP, SSEMP, government regulations, and best management practices; (iv) implementation of corrective actions that may be recommended by CSC NEPS; (v) supervision of sampling and testing of ambient pollution indicators; (vi) implementation of social, health and safety requirements; (vii) keeping daily logs and maintaining records of all environmental activities; and (viii) preparation of environmental reports.

48. CSC NEPS monitors Contractor's compliance with IEE-EMP and SSEMP during construction stage through site visits and audits of Contractor's logbooks and records. Site visits are usually done together with Contractor's ES so that instructions for correction of non-compliances can be clearly and immediately explained for prompt action. CSC-NEPS also participates in air and water sampling and noise and vibration monitoring. CSC NEPS didn't inspect objects in reporting period.

3.2. Site Audits.

49. CSC NEPS did not visit site during reporting period. PIU conducted monitoring of project site. PIU's environmental specialist made about 20 visits to the site. Information on individual visits to the project site is reflected below.

| № | Date of Visit | Auditor name | Purpose of Inspection/Audit | Summary of any Significant Findings |
|----------|----------------------|----------------------------|---|--|
| 1 | 23.07.2024 | Abdygulov A. Beishev I. | Visual inspection construction sites, quarries, dumps. The visit was conducted jointly with the | |

| | | | | |
|---|------------|-----------------------------|---|---|
| | | | Contractor's environmental specialist. | |
| 2 | 08.08.2024 | Abdygulov A. Beisheev I. | Visual inspection quarries, dumps, campgrounds. The visit was conducted jointly with the Contractor's environmental specialist. | Maintain cleanliness in the camps. |
| 3 | 10.09.2024 | Abdygulov A. Beisheev I. | Visual inspection. The visit was conducted jointly with the Contractor's environmental specialist. | inspection of the quarry reclamation process. non-compliance not found |
| 4 | 17.10.2024 | Abdygulov A. Beisheev I. | Visual inspection to ensure compliance with environmental requirements at quarries, dumps, campgrounds, and production areas. The visit was conducted jointly with the Contractor's environmental specialist. | non-compliance not found |
| 5 | 04.11.2024 | Abdygulov A. Beisheev I. | Visual inspection quarries, dumps, campgrounds, and production areas. The visit was conducted jointly with the Contractor's environmental specialist. | non-compliance not found |

3.3 Non-Compliances Tracking (Based on Non-Compliance Notices).

50. If non-compliance is identified during site visit, the CSC shall initially give a verbal instruction to Contractor, clearly stating suggestions for immediate correction. For issues that are not immediately corrected, CSC shall send a follow-up letter to formalize the instruction with a deadline date for correction. If Contractor is unable to correct noncompliance by deadline, the issue is carried forward to next notice of noncompliance. A new deadline date is assigned by CSC if Contractor has a valid reason for delaying the corrective action. Issues are tracked and their status is included in monthly, quarterly, and semi-annual environmental reports of CSC. Similarly, Contractor shall track status of Notices of Non-Compliance issued by CSC and include status in monthly reports submitted to CSC.

3.3.1 Contractor's activities to eliminate SSEMP non-compliances.

51. During reporting period, the implementation of mitigating environmental measures can be assessed as satisfactory: non-compliances occurred in terms of contamination of production base's territory with oil wastes. There were recommendations on need to reclaim land allocated for bypass roads and to increase the frequency of watering in hot weather.

52. Table 10 summarizes status of non-conformities/violations/recommendations that were identified in previous reporting period and should have been corrected in this reporting period.

Table 10. Contractor's activities to correct SSEMP non-compliances.

| No | Comments, non-compliances, recommendations | Corrective measures (CM) | Due dates | Status of previous execution of the CM/ Timeframe for elimination of non-compliances |
|----------------|--|---|------------------------|---|
| Lot - 1 | | | | |
| 1 | Bypass roads on Lot 1. | Ensure reclamation of sites used for bypass roads located at: km.18+300, km.21+430, km.24+430, km.24+492, km.26+330, km.26+720, km. 31, km. 34+220, km.34+646, km.35+210, km.36+102, km.36+490, km.37+050, km.37+540, km.37+700, km.38+380, km 42+582 | Deadline October 2024. | Completed (Photo 1-3) |

Photos 1-3. Technical reclamation of bypass roads located on sections along road from km. 34 to km. 38. November 2024.



Summary of non-compliances based on current period notifications.

| | |
|-----------------------------------|-------|
| Total number of non-conformities | 1 |
| Number of closed non-conformities | 1 |
| Percentage of closed items | 100 % |

3.4 Trends.

53. There was 1 non-conformance in previous reporting period, which was corrected in this report. The non-conformance was related to non-completion of works on reclamation of bypass roads on Lot 1.

54. There were no non-compliances in the reporting period.

55. Based on information obtained in current and previous monitoring periods, there is a tendency to increase Contractor's responsibility in environmental protection issues, the number of previously identified non-compliances by Contractor is decreasing. In this reporting period there were no non-compliances. The only non-compliance that was in process and extended until October 2024 is started works on reclamation of land plots allocated for bypass roads, which were 100% completed in the reporting period.

3.5 Unanticipated Environmental Impacts or Risks.

56. There were no unexpected environmental impacts or risks during reporting period.

4. RESULTS OF ENVIRONMENTAL MONITORING.

4.1. Overview of Monitoring Conducted during Current Period.

57. Final instrumental measurements of noise and vibration levels and laboratory tests of water and air quality were carried out upon completion of major construction works in the previous reporting half-year.

4.2. Trends.

58. Based on instrumental monitoring data it is noted that no deviations from MPC were recorded. The obtained data indicate that ongoing construction works do not have a significant impact on environment, and to some extent improve the situation. In particular, content of dust particles in air and water, as well as presence of background noise and vibration levels are within MPC. There is a tendency to increase Contractor's responsibility in environmental protection issues, the Contractor has ensured planting of seedlings to replace deceased ones.

4.3. Summary of Monitoring Outcomes.

59. According to the results of instrumental studies of air, water quality and noise and vibration levels conducted during previous reporting periods, it can be concluded that upon completion of construction works there is no harmful impact on the environment, as concentrations of substances in water and air are within an established MPCs and MPLs for determined components

4.4 Material Resources Utilization.

4.4.1 Current period.

Water Resources

60. Contractor's requirements for drinking water in camps, offices, and worksites are brought from local suppliers by containers of five (5) gallons. The Contractor uses sources near camp sites (Lot 2) to meet water requirements for domestic and potable water supply, dosage plants, equipment maintenance areas, and production areas. Water is pumped from the source into water tanks and distributed through pipelines to taps.

61. To provide water for dust suppression, Contractor obtained permission from local authorities to intake water from following sources listed in Table 12. Water consumption was insignificant as the road construction was completed in the previous reporting period

- Letter of consent of Kok-Jar village administration No. 319 dated July 21, 2020
- Letter of consent of Cholpon village administration No. 405 dated June 20, 2020.

Table 12. Water Source Intake Points Lot-1 and Lot-2.

| No | Water source | GPS coordinates |
|------------------|----------------------|----------------------------|
| <i>For Lot 1</i> | | |
| 1 | Orto-Tokoi reservoir | N 42° 12.765 E 075° 30.966 |
| 2 | Orto-Tokoi reservoir | N 42° 18.315 E 075° 54.123 |
| 3 | Orto-Tokoi reservoir | N 42° 17.739 E 075° 55.975 |
| 4 | River Chu | N 42° 21.882 E 076° 03.894 |
| 5 | River Chu | N 42° 22.324 E 076° 04.886 |
| 6 | River Chu | N 42° 23.207 E 076° 05.868 |
| 7 | River Chu | N 42° 23.831 E 076° 05.939 |

| For Lot 2 | | |
|-----------|--------------------|----------------------------|
| 1 | Joon-Aryk | N 42* 10.394 E 075* 25.194 |
| 2 | Mukandyn Suusu | N 42* 10.394 E 075* 39.708 |
| 3 | Chekildektin Suusu | N 42* 11.852 E 075* 37.128 |
| 4 | Sazdyn Suusu | N42*09.753 E075*23.393 |
| 5 | Sazdyn Suusu | N42*09.798 E075*23.576 |
| 6 | Tarmal Saz | N42*11.266 E075*34.744 |

Filling Materials and Aggregates.

62. Soil and aggregates needed for filling, embankment, subgrade, and subbase works are obtained from quarries near road alignment. Before developing and mining the land, Contractor obtained necessary permits from respective owners and from local and national government authorities that have jurisdiction over identified quarry sites.

63. As of the end of June 2024, Contractor owns 17 quarries for construction materials, the main contract expires on July 15. The Contractor plans to begin quarry reclamation work and complete it by the end of 2024. However, taking into account that within the framework of current project there are savings the MOTC KG are planned to be used for the major repairs of individual sections of roads located in project area. Most likely, individual quarry sections will not be transferred to district commission, since an additional volume of aggregate material will be required. Table 13 shows the characteristics of these quarries.

During reporting period, a quarry was being developed at km.81+300 on Lot 2. During quarry development, requirements to reduce negative impact on environment were met: watering of rock mass and access roads

Contractor provided technical layout of the quarries, bringing quarry sides to a safe position. Currently, Contractor is working on the development of "Quarry Reclamation Project", a contract was concluded for the development of this project. In accordance with Legislation of Kyrgyz Republic, "Quarry Reclamation Project" should pass a Technical and Environmental Expertise.

Table 13. Characteristics of Quarries.

Quarries are to be transferred only after their reclamation

| № | Location | | Volume (m3) | Land Area (ha) | Distance from the road | Yes/no development was in progress |
|-------|------------|------------|-------------|----------------|------------------------|------------------------------------|
| | Station | Village | | | | |
| Lot 1 | | | | | | |
| №1 | km. 5+500 | | 600 000 | 5,09 | 430 m | Yes |
| №2 | km. 7+100 | | 164 000 | 4,1 | 122 m | Depleted |
| №3 | km. 7+200 | | 195 200 | 4,88 | 122 m | Depleted |
| №4 | km. 9+000 | Boz-Barmak | 380 000 | 7,6 | 25 m | Depleted |
| №5 | km. 16+600 | | 1 744 000 | 43,6 | 42 m | Depleted |
| №6 | km. 16+600 | | 51 000 | 12,84 | 42 m | Depleted |
| №7 | km. 16+600 | | 113 000 | 2,83 | 42 m | Depleted |
| №8 | km. 19+360 | | 66 500 | 22,16 | | Depleted |
| №9 | km. 20+600 | | 65 600 | 1,64 | 120 m | Depleted |
| №10 | km. 22+700 | | 380 000 | 9,5 | 37 m | Depleted |
| №11 | km. 26+800 | | 488 000 | 12,2 | 80 m | Depleted |
| № 12 | km. 34+240 | | 245 600 | 6.14 | 325 m | Depleted |
| № 13 | km. 39+450 | | 164 000 | 4.1 | 520 m | Depleted |
| № 14 | km 43+400 | | 124 000 | 3.1 | 40 m | Depleted |
| Lot 2 | | | | | | |
| №15 | km. 71+500 | | - | 5,2 | 5 m. | Depleted |
| №16 | km. 75+400 | | 108 000 | 2,7 | 30 m. | No |
| № 17 | km.81+200 | | - | 5,6 | 50 m | No |
| №18 | km 81+400 | | 375 000 | 7,5 | | Yes |
| №19 | km 81+400 | | 305 000 | 6,1 | | No |
| № 20 | km. 86+000 | Epkin | 85 000 | 2,0 | 20 m | Depleted |
| № 21 | km. 89+093 | | 105 145 | 0.77 | | Depleted |

Concrete, Asphalt, and Reinforcing Steel Bars.

64. Cement, reinforcing steel required for fabrication or construction of culverts, concrete pipes, bridge retaining walls, and other concrete structures shall be purchased from approved commercial sources

POL (petroleum, oil and lubricants)

Petroleum requirements for heavy equipment, machineries and vehicles are supplied by gasoline stations near project sites, either pumped into the Contractor's cylindrical tank installed near fabrication areas or by the drums. These are stored in Contractor's fuel storage area. Lubricants and acetylene are supplied also from commercial sources within locality.

Cumulative Resource Utilization.

65. Since the project's reporting period beginning, the Contractor has removed from quarries 459,507 m3 of fill/rock/composite materials for Lot 1 and 487,444 m3 of these materials for Lot 2. As of this reporting period, the Contractor has no records or breakdown of actual water use (potable, domestic, batching plants, site watering and production areas, equipment washing areas, etc.). The Contractor has 5 water trucks for irrigation of work sites, which are used under Lot 2. Water is also used for technological purposes: for preparation of concrete mixes at the concrete batching plant and for production needs: washing of the concrete batching plant after completion of the technological process of concrete mix preparation and washing of concrete mixer tanks.

4.5 Waste management.

66. After major and secondary road reconstruction works the following wastes were generated:

- **unusable soil**
- **removed old asphalt and demolished concrete slabs**
- **domestic solid waste (biodegradable and non-biodegradable) from the kitchen, dining areas, offices and camps**
- **wastewater and solid waste generated by personnel at construction camp**

67. The spoils and scarified asphalt are disposed in Project's disposal sites. Contractor has all necessary permits from relevant state agencies (village administration, territorial environmental authorities) for disposal of unusable soil and old asphalt concrete in old pits in accordance with Landfill Plan, agreed with the Department of Environmental Protection of SCER KR. Table 14 shows utilization of soil disposal sites while Table 15 - scarified asphalt disposal sites.

Lot 1. Km. 12 + 000 (letter of consent of Kok-Moynok village administration No. 465 of 10.16.2020. Permit from Issyk-Kul territorial administration of State Agency for Environmental Protection and Forestry for disposal of waste in the environment No. 005952 dated 19.10.2020, No. 005967 dated 20.05.2021).

Lot 2. Km. 80 + 900 and km 89 + 090 (Permit of the Naryn Territorial Department of Environmental Protection No. 02-4 / 682 dated 03.11.2020, Letter of consent of Cholpon village administration No. 662 dated 29.10.2020, Permit of Kochkor Forestry Development Department Forest ecosystems No. 02-2 / 71 dated 27.04.2021).

68. In reporting quarter, the Contractor completed technical layout of all spoil dumps on Lot 1 and Lot 2, which was started in previous reporting quarter, and ensured their transfer under the Statement to land owners where spoil dumps are located ("Statements" are given in Appendix 3).

69. Contractor has completed technical layout of old asphalt dumps on Lot 1 and Lot 2, and ensured their transfer under the Statement to land owners where dumps are located (Statements are given in Appendix 3).

70. Solid domestic wastes are transported and disposed at Cholpon village landfill. Wastewater is transported to treatment facilities according to contract with the municipal enterprise "Gorvodokanal" of Balykchy city.

Table 14. Characteristics of unusable soil disposal area.

| № | Location | | Distance from the road (m) | Spoil capacity | | | Spoil quantities m ³ | As of June 30 2024, | Assessment of conditions and compliance to environmental protection measures |
|--------------|-----------|------------|----------------------------|----------------------|----------|--------------------------|---------------------------------|---------------------|--|
| | Station | Village | (LS/RS) | Area, m ² | Height m | Volume (m ³) | | | |
| Lot 1 | | | | | | | | | |
| 1 | km 12+100 | Tash-Sarai | 100 (LS) | 12500 | 4 | 50 000 | 24544 | Activity completed | Technical planning has been carried out |
| 2 | km 40+360 | - | 30 (LS) | 10645 | 2,1 | 22 015 | 4489 | Activity completed | Technical planning has been carried out |
| Lot 2 | | | | | | | | | |
| 3 | km 71+640 | | 410 (LS) | | | | 918 | | Technical planning has been carried out |
| 4 | km 71+860 | | 1(RS) | | | | 2632 | | Technical planning has been carried out |
| 5 | km 80+900 | | 29(LS) | | | | 2207 | | Technical planning has been carried out |
| 6 | km 89+090 | | RS | | | | 3049 | | Technical planning has been carried out |
| 7 | 70+180 | | 400(LS | | | | 11704 | | Technical planning has been carried out |
| 8 | km 71+640 | - | 12 (LS) | 3850 | 4 | 5 401 | 14691 | | Technical planning has been carried out |
| 9 | km 71+860 | - | 12 (LS) | 2069 | 4 | 8 278 | 8758 | | Technical planning has been carried out |
| 10 | km 80+900 | - | 70 (LS) | 4200 | 3 | 12 600 | 12000 | | Technical planning has been carried out |
| 11 | km 89+090 | - | 60m (RS) | 12000 | 1,8 | 21 800 | 18000 | | Technical planning has been carried out |

Table 15. Characteristics of old scarified asphalt dump sites

| No | Location | | Distance from the road (m) | Spoil capacity | | | Disposed Quantity m ³ | As of June 30 2024, | Assessment of conditions and compliance to environmental protection measures |
|-------|-----------|---------|----------------------------|----------------------|----------|----------------------------|----------------------------------|---------------------|--|
| | Station | Village | (LS/RS) | Area, m ² | Height m | Capacity (m ³) | | | |
| Lot 1 | km 7+000 | 50 (RS) | 10 400 | | 62 862 | 21000 | 21000 | Activity completed | Technical planning has been carried out |
| | km 20+100 | 50 (RS) | 48 700 | | 33 902 | 9000 | 9000 | Activity completed | Technical planning has been carried out |
| | km 21+260 | - | 50 (RS) | 48 700 | | 80 374 | 10500 | Activity completed | Technical planning has been carried out |
| | km 32+720 | - | 150 (LS) | 4 100 | 3,0 | 16 000 | 11500 | Activity completed | Technical planning has been carried out |
| | km 38+660 | - | 545 (LS) | 26 100 | 3,0 | 78 535 | 3500 | Activity completed | Technical planning has been carried out |
| | km 40+200 | - | 141 (LS) | 9 000 | 1,4 | 12 461 | 4500 | Activity completed | Technical planning has been carried out |
| | km 40+360 | | 106400 | | | 4500 | | | Old asphalt distributed and levelled. |
| Lot 2 | km 70+180 | - | 400 (RS) | 18 800 | 4,4 | 82 784 | 11000 | Activity completed | Technical reclamation has been carried out |
| | km 89+090 | - | 80 (RS) | 12 000 | 1,8 | 21 800 | 22000 | Activity completed | Satisfactory. Old asphalt is spread and leveled. |

4.5.1 Current period.

71. At the beginning of reporting period, the total amount of unsuitable soil was 166,068 m³; 66552 m³ from Lot 1 and 99546 m³ from Lot 2. All materials were delivered to the soil stockpile sites as indicated in Table 13.

72. By the beginning of reporting period, the total volume of scraped asphalt from Lot 1 was 388,732 m³. The materials are disposed at approved landfills as shown in Table 14. Total volume of scarified materials from Lot 2 was 12,583 m³.

73. Solid domestic waste Lot 2 is transported from the construction camp to the city landfill Cholpon village administration. Volume of solid domestic waste for the reporting period under Lot 2 amounted to 1,500 kg.

74. Volume of discharged wastewater from Lot 2 - 222.5 m³. Wastewater is transported to treatment facilities according to contract with the municipal enterprise "Gorvodokanal" of Balykchy city.

Cumulative Waste Generation.

75. Major part of waste generated is soil and cut asphalt, as mentioned above. Cumulative volume of industrial waste from the beginning of Project's implementation to beginning of reporting period is 401,315 m³. The cumulative volume of municipal solid waste generated because of the Project was 63,3 tn.

4.6 Health and safety.

4.6.1 Community health and safety.

76. During this reporting period, there were no incidents or accidents related to construction activities that affected public health and safety. Warning signs and information boards were installed at work sites.

77. No road accidents were registered during reporting period. Road signs and road markings were installed along entire road.

4.6.2 Health and safety of workers.

78. During this reporting period, there were no accidents or other diseases among Contractor's working personnel. The Contractor's workers' accommodation camp on Lot 2 is maintained in good condition and comply with hygienic and sanitary standards. Good living conditions have been created for workers. Contractor provided workers with disinfectants, antiseptics and personal protective equipment (masks, respirators, and gloves), also disinfectants and antiseptics were installed in all public places.

79. The contractor has a specialist in Safety Engineering. This specialist conducts training on compliance with safety engineering requirements. Safety engineering training is conducted as needed. Mandatory training is conducted for new workers arriving at the site.

80. That following information posters were posted and maintained at the Contractor's camp for Lot 1 and Lot 2:

- Structure of the safety management organization. Responsible persons and their contact information.
- Information posters on protective measures against COVID-19, safety precautions, first aid.
- Fire shields and fire extinguishers installed.

4.7. Trainings

81. During training's reporting period, the Consultant did not conduct training. The National Safety Engineer regularly conducts safety trainings and briefings and formally substantiates claims (letters) to the Contractor for non-compliance with safety responsibilities. During the project at least 2 major safety and road safety trainings were conducted jointly with the International Safety Engineer directly at the Contractor's facility. However, in reporting period, partly due to decrease number of workers, as well as a smaller volume of work, 7 trainings on environmental protection and 4 trainings on safety have been conducted

5. SEMP FUNCTIONING

5.1 SEMP Review.

82. Review and approval of the SSEMPs were completed in 2020. MoTC KR approved SEMP for Lot 1 in October 2020 and for Lot 2 in November 2020. SEMP is effective. The envisaged mitigation measures are relevant and do not require changes. Contractor can implement the established EIA requirements. In line with SEMP recommendations, each SEMP includes 14 separate annexes:

1. Emergency Management Plan
2. Grievance redress mechanism
3. Occupational safety, health and hygiene plan
4. Construction camp management plan
5. Construction waste management plan
6. Noise management plan
7. Water quality management plan
8. Air quality management plan
9. Tree management plan
10. Dust control plan
11. Land Protection Management Plan
12. Plan of environmental protection during the construction and reconstruction of bridges
13. Quarry Management Plan
14. Plan for the prevention and control of COVID-19.

83. A plan to prevent the spread of COVID-19 was developed additionally.

84. During construction works, the Contractor has ensured implementation of mitigation measures for the environmental impacts of construction works in accordance with the SEMP of the following Plans:

Lot-1:

Emergency Management Plan

Grievance redress mechanism

Occupational safety, health and hygiene plan

Construction camp management plan

Construction waste management plan

Lot-2:

Emergency Management Plan

Grievance redress mechanism

Occupational safety, health and hygiene plan

Noise management plan

Water quality management plan

Noise management plan

Air quality management plan

Water quality management plan

Dust control plan

Air quality management plan

Land Protection Management Plan

Dust control plan

Land Protection Management Plan

Plan of environmental protection during the construction and reconstruction of bridges

Plan for the prevention and control of COVID-19.

The following Plans are in implementation process. The following Plans will be implemented after Contract's completion, namely:

85. Quarry Management Plan: As October 1, 2010 the Contractor has provided technical leveling and putting quarry sides in a stable and safe condition on both Lots. Upon receipt of Quarry Reclamation Project, quarry reclamation will be completed in full in accordance with project documentation

Construction Camp Management Plan In previous reporting period, production base and the Subcontractor's Camp dismantling and reclamation of these sites were completed on Lot 1 and reclaimed sites were handed over to the Commission.

Dismantling Contractor's Camp and production bases on Lot 2, reclamation of these sites and handover to Commission shall be accomplished in first half of 2025.

Construction Waste Management Plan.

Lot 1 - Plan has been implemented in full, i.e. construction waste, solid waste, unsuitable soil after production base and Camp dismantling, has been removed and disposed of/placed in accordance with the concluded Contracts with specialized organizations, specially designated places/dumps.

For Lot 2 - Construction Waste Plan implementation is in process and will be completed by October 2024.

Tree Management Plan (TMP):

In previous reporting period, compensation planting of saplings to replace those cut down by the Project and compensation planting of trees to replace deceased on Lot 1 and 2 was provided.

86. The SSEMP and plans were developed taking into account the possibility of fulfilling specified requirements by Contractor. Based on existing practice, insufficient and timely fulfillment of specified requirements by Contractor is noted. In previous reporting periods (project's beginning), recurring non-conformities were noted, as well as their untimely elimination. However, each non-conformance should be considered separately. As some of the identified non-conformities are due to the Contractor's management misunderstanding and some are due to staff misunderstanding. It may be noted that after Consultant's training on this issue, Contractor shall take necessary corrective measures to improve situation and prevent recurrence in future.

87. A preliminary report on construction activity completion audit has been prepared by NEPS CSC, which is attached to this report and reflects in more detail Contractor's implementation of SSEMP (Annex 2).

6. GOOD PRACTICES AND OPPORTUNITY FOR IMPROVEMENT.

6.1 Good Practices.

88. An example of "Good Practice" is high level and promptness of interaction between ADB, PIU, Consultant and Contractor in implementing ADBs Safeguards Policy Statement and the requirements of SSEMP when burial site was discovered during construction works, in the previous reporting period.

89. The planting of saplings to replace the deceased ones was ensured.

90. Contractor ensured technical leveling of all worked-out quarries site and bringing quarries sides to a stable position, technical leveling of unsuitable soil and old asphalt dumps. Upon receipt of Quarry Reclamation Project, quarries reclamation will be completed in full in accordance with design documentation

91. Unused quarries were transferred under Statement of Transfer to Owners (Annex 1)

92. Contractor ensured technical layout of territory of all spoil dumps and their transfer under Statement to owners (Annex 1).

93. Ensured environmental audit upon completion of construction activities (Annex 2)

7. SUMMARY AND RECOMMENDATIONS.

7.1 Summary.

94. In general, based on results of monthly inspections and monitoring of construction sites, the Contractor has satisfactory performance in mitigating and preventing negative environmental impact of works. Most of identified violations and non-compliances were eliminated by Contractor within established deadlines.

95. There is a positive dynamic: Contractor has ensured technical layout of territory of all exhausted quarries and putting quarry sides in a stable position. Upon receipt of Quarry Recultivation Project, reclamation of quarries will be completed in full in accordance with project documentation and reclaimed quarries and spoil areas will be handed over to landowners. The Contractor made a commission transfer of lands used:

- under production facilities of AC plant, Crusher plant, Contractor's camp on Lot 1;
- under quarries at km. 7+500, 36+560, 33+000, 11+300, 19+360, 20+600, 31+240 (Annex 1):
- under spoil pits at km.7+100, 12+100, 19+960, 21+260, 32+720, 34+240, 36+760, 38+660, 40+200 on Lot 1 and under spoil pits at km. 65+180, 65+300, 65+520 on Lot 2 (Annex 1)

7.2 Recommendations for improvement

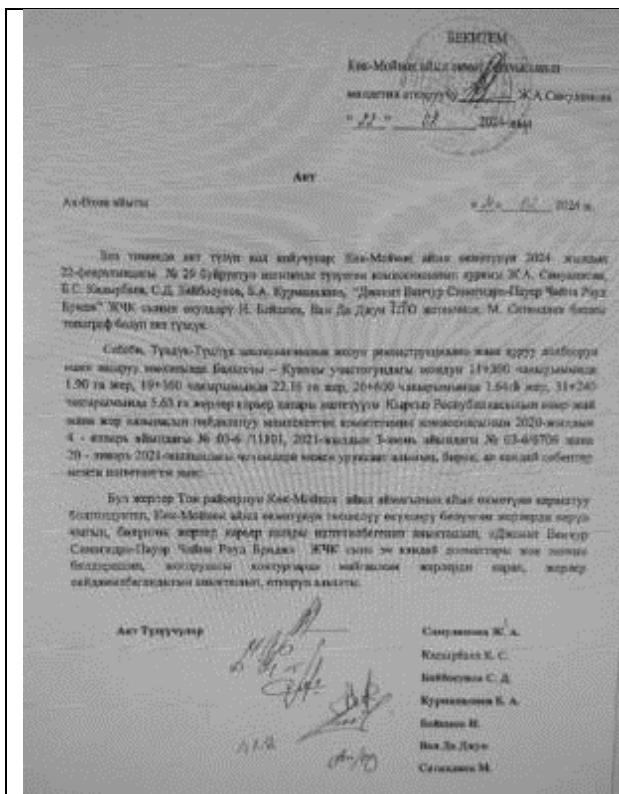
96. The CSC recommends proceeding with suggestions for improvement listed in Section 6.2.

97. The CSC recommends inclusion of the following activities to improve the current practices:

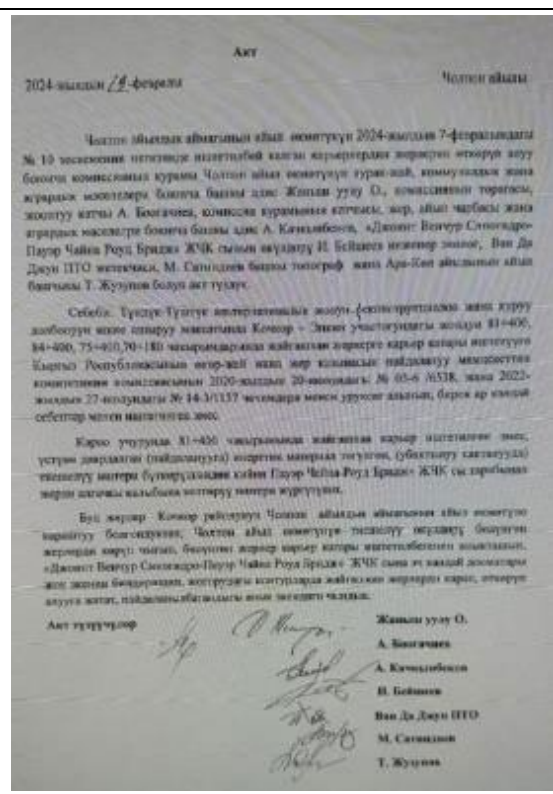
- To complete reclamation of lands allocated for: quarries, production bases and transfer them to the land owners with signing of Acceptance Statement in accordance with requirements of regulatory legal documents of Kyrgyz Republic in period till June 2025.

98. Ensure inventory of planted seedlings in the next reporting period.

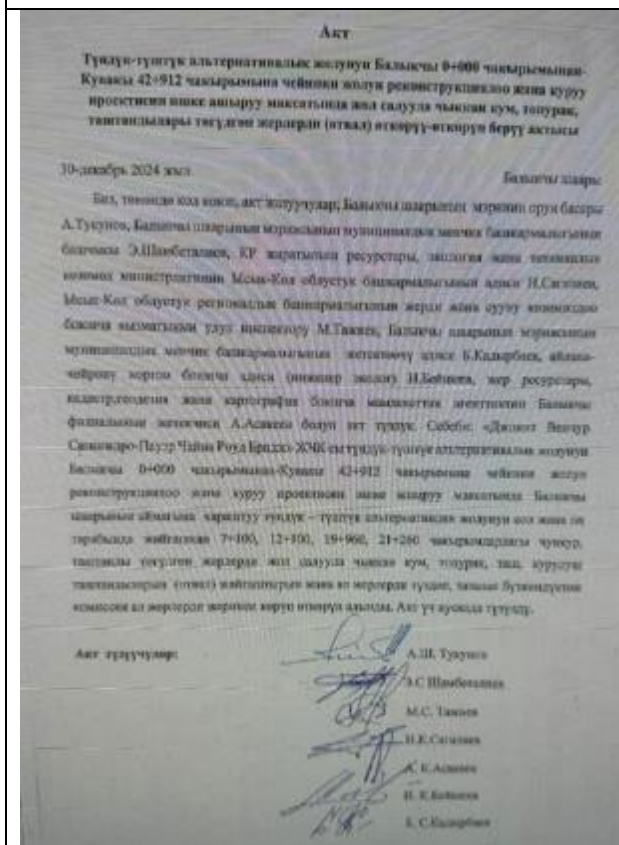
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Quarry area transfer statement km. 11+300, 19+360, 20+600, 31+240.



Quarry area transfer statement km 81+400, 84+400, 75+400, 70+180.



Landfill sites transfer statements at km.7+100, 12+100, 19+960, 21+260.



Landfill sites transfer statements at km.65+180, 65+300, 65+520, 34+240.

Annex 2.

Post-Construction Environmental Audit Report

Project number: TA-8887 KGZ

Loan number: ADB Loan 3432-KGZ (SF)

Grant number: 0496-KGZ (SF)

Kyrgyz Republic:

Cooperation Corridors 1 and 3 Connector Road
Project (Phase 2) - Additional Financing Section 1 (Lot 1)
"Balykchy - Kochkor km. 0-km. 43", Section 2A (Lot 2)
"Kochkor-Epkin (km 62+400-km 89+500)".

Prepared by:

« Roughton International Ltd. and sub-consultant RAM Engineering Associates LLC »

Prepared for:

Ministry of Transport and Communications of Kyrgyz Republic

Approved by: *[Name and signature of Executive Agency staff]*

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Abbreviations

| | | |
|-----------------|---|--|
| ACP | - | Asphalt Concrete Plant |
| ADB | - | Asian Development Bank |
| CAREC | - | Central Asian Regional Economic Cooperation |
| CBT | - | Concrete Batching Plant |
| CO | - | Carbon Monoxide |
| CSC | - | Construction Supervision Consultant |
| DDPSSSES | - | Department of Disease Prevention and State Sanitary and Epidemiological Surveillance of the Ministry of Health |
| dia. | - | diameter |
| EA | - | Executing Agency |
| EMP | - | Environmental Management Plan |
| ES | - | Environment Specialist |
| NEPS | - | National Environmental Protection Specialist |
| IA | - | Implementing Agency |
| IBAT | - | Integrated Biodiversity Assessment Tool |
| IEE | - | Initial Environmental Examination |
| IES | - | International Environment Specialist |
| GC | - | General Contractor |
| GoKR | - | Government of Kyrgyz Republic |
| KGZ | - | Kyrgyzstan |
| km | - | kilometer |
| KR | - | Kyrgyz Republic |
| LARP | - | Land Acquisition and Resettlement Plan |
| LS | - | Left side |
| lm | - | Linear meter |
| m | - | Meter |
| m ² | - | Square meter |
| m ³ | - | Cubic meter |
| masl | - | Meter above sea level |
| MPC | - | Maximum Permissible Concentration |
| MPL | - | Maximum Permissible Level |
| MTOC | - | Ministry of Transport and Communication of KR |
| MEoC KR | - | Ministry of Economy and Commerce of the Kyrgyz Republic |
| MNRETS | - | Ministry of Natural Resources, Environment and Technical Supervision |
| MoCIT KR | - | Ministry of Culture, Information and Tourism of Kyrgyz Republic |
| MoF KR | - | Ministry of Finance of the Kyrgyz Republic |
| NRS | - | National Resettlement Specialist |
| NO ₂ | - | Nitrite |
| pcs | - | pieces |
| PIU | - | Project Implementation Unit |
| RS | - | Right side |
| SCEC | - | State Committee on Ecology and Climate |
| SCP | - | Stone Crushing Plant |
| SF | - | Supplemental Financing |
| SAEMR | - | Semi-annual Environmental Monitoring Report |
| SDRS | - | Social Development and Resettlement Specialist |
| SAEPF | - | State Agency on Environmental Protection and Forestry Agency |
| SSEMP | - | Site Specific Environment Management Plan |
| TA | - | Technical Assistance |
| TOR | - | Terms of Reference |
| CHHS | - | Cultural And Historical Heritage Sites |

1. INTRODUCTION

1.1 Preamble.

1. All of Contractor's environmental protection activities, as required by ADB policy, have been based on an approved SSEMP. The SSEMP describes measures developed under the Project to avoid, minimize, or compensate for adverse environmental impacts that occur as a result of the Project. The purpose of post-construction environmental audit is to assess environmental condition of Project area prior to commencement of construction works and after their completion, and to assess Contractor's compliance with SSEMP.
2. The audit's main objective is to determine whether all environmental safeguards have been fully implemented and whether there are any outstanding issues, and whether all commitments developed during project planning and impact assessment have been fully implemented.
3. This Post-Construction Environmental Audit Report covers project road construction period from 2020 to 2024.
4. Following methods were used during environmental audit: method of photo-fixation of environmental situation at construction sites of project road, waste disposal facilities, quarries, AC production bases, crusher and reinforced concrete products; method of documentation verification (environmental and permit documentation, waste logs) and instrumental environmental quality monitoring results analysis. The results are based on numerous site visits from 2020 to 2024.
5. Environmental audit results confirm that there is no negative environmental impact of project construction works and compliance of the works with SSEMP is satisfactory. The main unresolved issue is quarry reclamation due to Reclamation Project delay in development. The Contractor ensured technical layout of territory of all worked-out quarries and bringing the quarries sides stable position, technical layout of dumps of unsuitable soil and old asphalt. Upon receipt of Quarries Recultivation Project, reclamation will be completed in full in accordance with the design documentation.

1.2 Key Information.

6. The Project is part of North-South Alternate Corridor which is a priority project in Sustainable Development Strategy of Government of Kyrgyz Republic.
7. Project involves rehabilitation of two road sections: Balykchy section from km 0 to km 43 and Kochkor – Epkin section from km 62+400 to km 89+500. For bidding and construction purposes, Balykchy section is referred to as Lot 1 and Kochkor-Epkin section is referred to as Lot 2. A location map of Project is shown in Figure 1
8. Project is aimed at improving the socio-economic conditions of Kyrgyz Republic regions through: (i) shortened travel time for movement of people and goods between southern districts of Osh, Batken and Jalalabad and northern districts of Naryn, Issyk-Kul, Chui and Talas; (ii) reduced transport costs due to reduced route and better road conditions; (iii) increased local and international traffic and trade particularly between Kyrgyzstan and Tajikistan; (iv) increased income-generating opportunities for local people; (v) creation of new jobs; (vi) good condition of vehicles; and (vii) reduced transportation costs.
9. The bidding process selected General Contractor “JV Sinohydro Corporation Ltd - Power China Road Bridge Group Co. Ltd” for civil works and Construction Supervision Consultancy

“Roughton International in association with RAM Engineering Associates LLC” for construction works

10. On February 14, 2020, a contract was signed between MoTC and JV Sinohydro Corporation Ltd - Power China Road Bridge Group Co. Ltd for construction works on Lot 1 and Lot 2. Total contract amount is \$40,209,854.83. Notice to Proceed was issued to the CSC on May 20, 2020 and to Contractor on June 20, 2020.

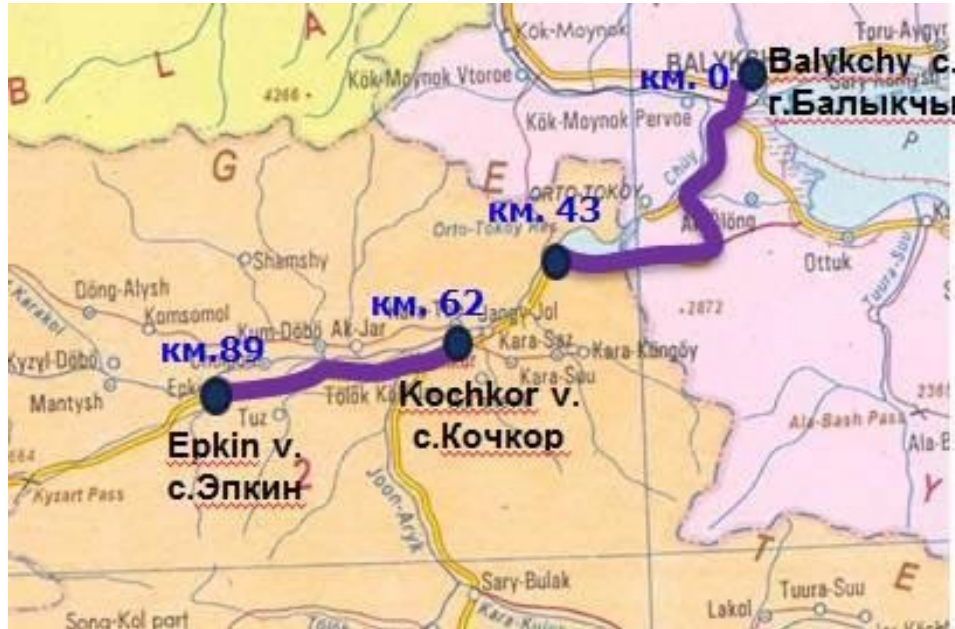
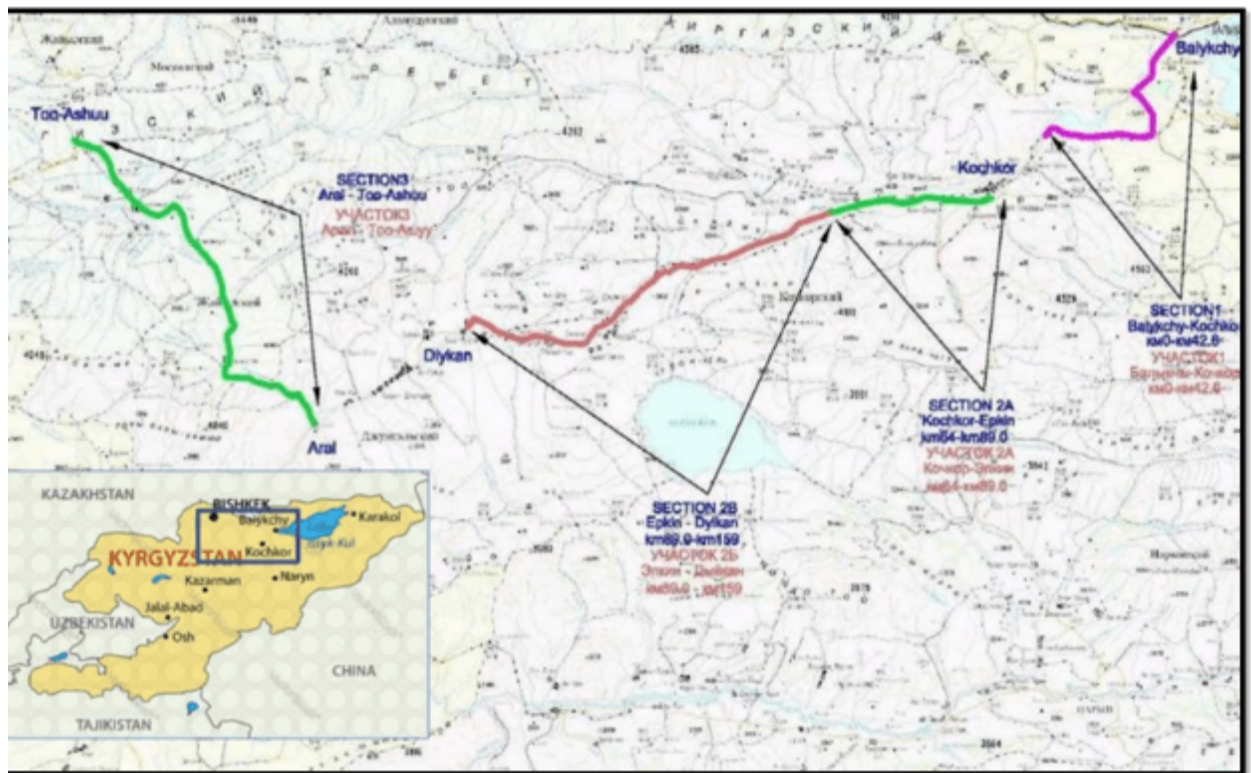


Figure 1: Project Road Sections: Section 1 (Lot 1) "Balykchy - Kochkor km. 0-km. 43“, Section 2A (Lot 2)“ Kochkor - Epkin (km 62+400-km 89+500).



2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES.

2.1 Project Description.

2.1.1 Project Justification and Project Area.

11. Central Asia Regional Economic Cooperation Corridors 1 and 3 Connector Road Project (Phase 2) - Additional Financing Section 1 (Lot 1) "Balykchy - Kochkor km. 0-km. 43", Section 2A (Lot 2) "Kochkor-Epkin (km 62+400-km 89+500)" will connect two major CAREC regional corridors by rehabilitating an existing but narrow connector road. It is part of the North-South Alternative Corridor, a priority project in the National Sustainable Development Strategy.

12. Terrain throughout the site can be classified as a foothill plain with an elevation of 750-800 m above sea level and steadily gaining elevation to the south towards Tien Shan mountain range.

13. Section 1 (Lot 1), the Balykchy Project section, is 43 km long and runs from east to south-west. It begins at a traffic circle located at the entrance to Balykchy City. Five roads converge at this point, one of which is a section of CAREC road heading south. Lot 1 follows the existing highway up to km 43. The first 29 km of the road is within Tonsky Rayon (District) of Issyk-Kul Region (Province) while the remaining 14 km is within Kochkor Rayon of Naryn Region. The road elevation at km 0 is 1,632masl while the elevation at km 43 is 1,756 masl. Throughout the road section, the elevation ranges from 1,610masl to 1,820masl. Figure 2 shows the general topography of areas traversed by Lot 1.

14. Kochkor-Epkin road section (Lot 2) is 25 km long and runs from east to west. It begins at junction of three roads (km62+400) in Kochkor town where Bishkek-Naryn-Torugart Highway serves as a detour for Kochkor town and this road section. Road follows existing highway and ends at km89+500 in Epkin. Entire road section is within Naryn oblast and crosses only Kochkor Rayon. Kochkor is center of Kochkor Rayon of Naryn oblast.

15. Areas surrounding the roadway are vast agricultural lands used for crop and livestock production. Kochkor has rolling and mountainous terrain which is covered with grasses suitable for grazing. Kochkor Valley is bounded by Kyzart mountain ridges on north and Karagatty Kyzart on south. Mountainous region has a very dissected relief with high slopes. Elevation in valley ranges from 1,700masl to 2,400masl. Road elevation at km 62+400 (beginning of ot 2) is 1,845masl while the elevation at km 89+500 (end of Lot 2) is 2,080masl. Elevation along entire road section ranges from 2,400masl to 4,502masl. Figure 3 shows general topography of areas traversed by Lot 2.

16. Project was designed in accordance with Kyrgyz Highway Standard (SNIP 32-01:2004), with geometrical and structural requirements up to Technical Category II (main streets of city importance). Lane width 3.5m – 3.75m; width of carriageway 7.00m – 7.50 m; width of shoulder 3.25m – 3.75m (of which 0.50m - 0.75m will be paved). Average total road width is 15m.

17. Road rehabilitation works included reconstruction/construction of bridges, culvert replacement, construction of bus stops and one underpass, removal of old asphalt, construction of sidewalks, culvert installation, tree planting, as well as quarrying, operation of asphalt and concrete plant, stone crushing plant for recycling aggregates, establishment of contractor's work camps and warehouses, etc.

18. According to ADB's SPS, the project is categorized as Category B. Environmental impacts from road rehabilitation are short-term and localized as most of the construction activities are taking place along existing RoW and include:

- noise and vibration
- generation of dust and air emissions from earthworks and from the operation of vehicles, construction equipment, concrete batching plants, asphalt batching plants and rock crushing plants
- impacts on water courses (siltation, deterioration of water quality)
- impacts of quarrying (removal of vegetation, changes in landscape, soil erosion/landslide, degradation of soil quality)
- impacts on soil due to removal of trees and vegetation
- Impacts resulting from rehabilitation of bridges and drainage structures,
- Impacts from operation of campsites, and
- Impacts on historical and archaeological sites

19. Satisfactory management of noise, air pollutant emissions and vibration are particularly important for populations near road and sensitive receptor locations such as schools, hospitals, mosques, etc.

2.2 Project Contracts and Management.

2.2.1 Scope of work under the Contract.

20. The Works involve rehabilitation and improvement up to Technical Category II, including construction of new a pavement, in accordance with the state standards of Kyrgyz Republic for geometric and design requirements with estimated speed of 120 km/h 95 km/h beyond populated areas and 60 km/h within populated areas

- Number of lanes: 2
- Width of lanes – 3,5 - 3,75m;
- Roadway width: – 2x7,5;
- Width of shoulder – 3.25-3.75 m (of which 0.50-0.75 m with surfacing)
- rated axle load - 11.5 tons.
- road right-of-way width is 30-60 meters.

In populated areas, the road is widened to 4 lanes with pedestrian sidewalks.

21. A two-layer asphalt concrete pavement with a thickness of 15 cm, the top layer is 6 cm and the bottom layer is 9 cm has been laid throughout the project area. Volume of asphalt:

| | |
|---|------------------------------------|
| Road pavement | |
| • Upper SMA layer | Thickness 6 cm; |
| • Coarse-grained asphalt at intersections | Volume 42,505 m ³ |
| • Leveling layer | |
| • Base layer | 5 cm thick; volume 682 m3 |
| • Lower base layer | |
| • Asphalt concrete mix on sidewalks | 9 cm thickness; volume 63 633 m3 |
| | 20 cm thickness; volume 152 829 m3 |
| | 25 cm thickness; volume 345 850 m3 |
| | 4 cm thickness; volume 434 m3 |

22. Project provides construction and repair of following engineering structures and communications, also parameters of works volumes are given in table 1.

Table 1. Scope of Construction Works.

| Work Item | Unit | Quantity (Original Plan) | |
|--|--|---|---|
| | | Lot 1 | Lot 2 |
| Tree cutting | pcs | 30 | 38 |
| Clearing and Grubbing | ha | 37 | 35 |
| Excavation | m3 | 116 485 | 42 823 |
| Existing Asphalt Break Up | km | 38 597 | 10 833 |
| Fill and Embankment | m3 | 205 306 | 93 725 |
| Culverts | set | 63 | 51 |
| Subgrade | m3 | 154 700 | 90 010 |
| Subbase | m3 | 220 850 | 125 000 |
| Base | m3 | 91 079 | 61 750 |
| Binder | m3 | 37 883 | 25 750 |
| Bridges | set | 4 | 1 |
| Gabions | pcs | 696 | - |
| Drainage | m | 1 569 | 139 |
| Parking near markets | Pcs | 4 | 2 |
| Automobile pavilion | pcs | 8 | 11 |
| Parapet fence | pcs | 1 339 | 946 |
| Reconstruction of communication lines <ul style="list-style-type: none"> • Overhead line -10kV • Overhead line - 0.4 kV • Communication line • Lighting poles • PVC pipes | poles poles poles pcs l.m. | 8 - 14 193 848 | 22 7 - 337 820 |
| Others | | Tree planting Archaeological survey and monitoring Removal of bus stops Environmental monitoring Auxiliary facilities | Tree planting Archaeological survey and monitoring Removal of bus stops Environmental monitoring Auxiliary facilities |

Vegetation

23. Almost entire length of project road was planted with trees on both sides, many of which were cut down during road rehabilitation. Tree cutting was a “forced” measure. Trees in the areas of road widening, construction of sidewalks and drainage channels were “forced” to be felled. Total number of trees felled under forced felling amounted to 1,704 pcs. As compensatory measures, planting of new tree seedlings at a ratio of 1:2 is designed to restore vegetation. By May 2024, total number of planted trees amounted to 3,404.

Land Acquisition and Resettlement Plan.

24. Project site is in close proximity to settlements, and at site 2 a new road section is planned to be constructed, which is to pass through land used for agriculture, Project has included demolition of fences, which are affected by project, at road widening sites and construction of new sidewalks.

A Resettlement Plan has been developed, based on which compensation has been paid to 189 affected persons, including land owners and users.

2.2.2 Main organizations involved in project and related to environmental protection.

Table 2. Contact Information of Persons responsible of Social and Environmental Management.

| No | Organization | Designation | Name | Contact information |
|----|---|--|--------------------|--|
| 1 | ADB | Country Environment Focal | Lizandro C. Racoma | lracoma@adb.org |
| 2 | ADB Resident Mission in Kyrgyz Republic | National Environmental Consultant | Sultan Bakirov | Sbakirov.consultant@adb.org |
| 3 | PIU under MOTC | PIU Environmental Officer | Abdygulov Asylbek | asylbeka@piumotc.kg |
| 4 | Roughton International Ltd., and sub-consultant RAM Engineering Associates LLC. | National Environmental Protection Specialist | Akmatova Nasiba | ahmatovanm@gmail.com |
| 5 | Sinohydro-Powerchina Roadbridge JV. | Contractor's National Environmental Specialist | Beisheev Isake | isake.beysheev@bk.ru |

2.3 Project activities during reporting period.

2.3.1 Road construction works.

25. Construction activities on project road were carried out mainly within RoW of existing road, thus minimizing the environmental impact. The project included a number of related activities such as quarry development, operation of AC and a Crushing plant, establishment of Contractor's work camps and warehouses, etc.

26. Regular monitoring of environmental compliance during construction works at project sites was started in August 2020.

Project road segments on Lot 1 and Lot 2 completed and open for public use-November 30, 2023. The completion date for entire Project after PBM phase is June 21, 2028.

27. During reporting period, the following construction works were carried out on project road sections:

- - tree felling and uprooting;
- - clearing and grubbing;
- - excavation of soil into the dump;
- - excavation and removal of unsuitable material from existing earthwork;
- - embankment, common material from quarries;

- - removal of existing asphalt;
- - paving of pavement, laying of subgrade, laying of asphalt;
- - installation of parapets (small concrete barrier/separation barriers);
- - bridge construction;
- - underpass construction;
- - construction of culverts;
- - construction of sidewalks;
- - construction of toilets;
- - installation of reinforced concrete culverts;
- - installation of stopping pavilions and asphaltting of stopping areas;
- - works on exits to adjacent streets;
- - construction of ditches and crossings over them;
- - construction of shoulders;
- - installation of poles for lighting;
- - installation of traffic lights, road signs;
- - application of road markings;
- - planting, maintenance and watering of seedlings.

2.4 SSEMP review of environmental issues.

28. All of Contractor's environmental protection activities are based on approved SSEMP (for Lot 1 approved in October 2020, for Lot 2 approved in November 2020). Site Specific Environmental Management Plan (SSEMP) is a form prepared by Contractor based on EMP and intended to be obligatory by him. The SSEMP describes measures developed as part of this Project to avoid, minimize, or compensate for adverse environmental impacts that occur as a result of the Project. The mitigation measures provided in SSEMP are sufficient, effective and acceptable. Contractor has prepared 14 Appendices to SSEMP, which address all major specific potential environmental impacts.

3. RESULTS OF MONITORING OF CONDUCTING CONDITIONAL REQUIREMENTS OF THE ENVIRONMENTAL LAW IN CONSTRUCTION WORKS ON THE “BALYKCHY km.0-km.43” and “KOCHKOR-EPKIN (km.62+400 - km.89+500)” Road Sections

3.1 Cutting and grubbing of trees.

29. There are green spaces (trees) on both sides of project road sections. According to IEE, the preliminary number of trees to be felled is 68 (including 38 trees on Lot 1 and 30 trees on Lot 2), however, based on practice, the exact number of trees may be determined after completion of road construction works, i.e. completion of topographic works on project site, planting of detailed design by coordinate points. Trees located in areas of road widening, construction of sidewalks and drainage channels are subject to “forced” felling.

30. In 2020, during road markers' installation, 1,909 trees were identified for “forced” cutting, of which: 160 on Lot 1 and 1,749 on Lot 2. In order to minimize the impact on green areas, Consultant and Contractor conducted a joint analysis of control points and it was decided, in agreement with ADB, to shift the sidewalk on the left side of the road from the edge of the road to deep between the trees, which avoided the cutting of trees along the road on Lot 1 at km 2+050-2+414 LHS (Photo

1,2). This reduced the planned number of forced trees felling to 122 trees on Lot 1, and 1580 trees on Lot 2.

31. Contractor together with topographers marked trees, prepared a List of trees to be cut down and agreed with Consultant. Then trees, falling under the demolition, were coordinated with environmental services and necessary permits for cutting were obtained from Environmental Protection's agencies (Permit for tree removal No. 000 461 dated November 3, 2020 from the Naryn Territorial Department of the State Agency for Environmental Protection and Forestry under the GoKR. Green areas statement under GoKR of Balykchy city No. 006603 dated November 16, 2020, Permit for tree removal from Issyk-Kul territorial department of State Agency for Environmental Protection and Forestry under GoKR).



Lot 1. Photos 1 and 2. Relocated sidewalk at km 2+050-2+414 LHS.



Photo 3. Lot 1. Balykchy (km.0 - km. 43) km. 1+813. left before tree cutting and Photo 4. right - after cutting.



Lot 2. Section km 79+300. Photo 5 before tree cutting



Lot 2. Section km 79+300. Photo 6 after tree cutting and road widening.



Lot 2. Photo 7. Uprooted roots of fallen trees at km.75+00.



Lot 2. Photo 8. Area after clearing of stump and uprooted stumps.

32. Total number of trees felled was - 1,704; 122 along Lot 1 and 1,582 along Lot 2. and 3,408 trees (1:2 ratio) were planted to replace the felled trees, including 450 in the fall of 2022, 1,150 in the spring of 2023, and 1,808 in the spring of 2024

33. Removed tree limbs were taken to the sites provided to village administration and transferred to the balance of local administrations understatement. Root residues were also removed to specially designated sites., located on Lot-2 km 79+500 -80+000,



Lot 1. Photos 8-12. Cutting down trees and their removal to designated areas

3.2 Excavation of soil into the cavalier.

34. From all areas to be widened, used for quarries, construction of camps, production bases, the soil and vegetation layer was removed, which was taken to storage sites provided by local authorities.

35. As necessary, the work area was watered with a watering vehicle.



Photo 13. Lot 2. Removal of soil and vegetation layer from roadside on section km. 83+600 - km. 85+000.



Photo 14. Lot 2. Removal of soil and vegetation layer from quarry site



Photo 15. Lot 1. Soil and vegetation layer removed from the site under the quarry km.



Photo 16. Lot 2. Removal of soil and vegetation layer from sidewalk area



Photo 17. Lot 1. Soil and vegetation layer removed from site for industrial base and stockpiled around base perimeter



Photo 18. Lot 1. Road widening at km. 17+500-18+500: after clearing and grubbing



Photos 19 and 20. Road shoulders with removed soil layer

36. Topsoil was stored in temporary storage areas in vicinity of areas from which it was removed. Soil and vegetation layer was used for reclamation of unsuitable soil dumps, quarries and road shoulder stabilization upon completion of road construction.



3.3 Quarry operations.

37. The aggregate material reserves required for Project needs have been explored and calculated during the preparatory works at project sites, in accordance with which permits for subsoil development rights were obtained from Ministry of Natural Resources, Environment and Technical Supervision of Kyrgyz Republic. Initially 10 quarries were identified, the information is provided in Table 3. In Project implementation process due to insufficiency of available quarries of construction materials, Permits were obtained from MNRETS KR for development of additional 14 quarries, information is provided in Table 4.

Table 3: Characteristics of quarries.

| Quarries' No | Stocks (m ³) | Area (Ha) | Distance from road |
|----------------|--------------------------|-----------|--------------------|
| №1 km. 7+100 | 164 000 | 4,1 | 122 m. |
| №2 km. 7+500 | 450 000 | 18 | 20 m. |
| №3 km. 9+000 | 380 000 | 7,6 | 25 m. |
| №4 km. 11+300 | 76 000 | 1,9 | 50 m |
| №5 km. 16+600 | 1 744 000 | 43,6 | 42 m |
| №6 km. 20+600 | 65 600 | 1,64 | 120 m |
| №7 km. 33+000 | 609 000 | 20,3 | 25 m. |
| №8 km. 22+700 | 380 000 | 9,5 | 37 m |
| №9 km. 26+800 | 488 000 | 12,2 | 80 m |
| Lot-2 | | | |
| №10 km. 75+400 | 225 000 | 4,5 | 30 m. |

38. A Quarry Management Plan was developed and submitted to PIU and ADB for approval prior to the commencement of quarry development.
39. The MoTC KR, generally under Project, has obtained from the Ministry of Natural Resources, Environment and Technical Supervision (MNRETS) a temporary permit for development of 24 quarries on Lot 1 and Lot 2. The Contractor has received all necessary documents/approval from local authorities, Ministry of Natural Resources, Environment and Technical Supervision (MNRETS) and State Agency on Environmental Protection and Forestry Agency (SAEPF) to develop these quarries.
40. Based on the initial archaeological survey reports prepared in 2018, taking into account the presence of CHHS in Project area in order to preserve CHHS, the Consultant's archaeologist conducted additional surveys of areas identified for quarries. As a result, it was possible to fully preserve the areas where there were archaeological monuments in the form of ancient cemeteries (burial grounds with burial mounds).
41. On quarry sections of km.81+400 and km.84+400 ancient cemeteries (Ak-Bel burial grounds), which are archaeological monuments, have been discovered, taking into account that usage of these sections was prohibited.
42. Ten burial mounds were excavated at planned quarry site km.81+200 (Ak-Bel II burial ground). Skeleton and scattered human bones, sheep bones, clay vessels and their fragments were found in the burials (photo 21, 22). All findings were recorded, inventoried and sent to the Laboratories of Archaeology and Ethnography of the Kyrgyz-Turkish State University "Manas" to determine the age of the excavated burials and restoration of pottery.

| | |
|--|---|
|  |  |
| <p>Photo 21. Ak-Bel II burial ground. Human bones.</p> | <p>Photo 22. Ak-Bel II burial ground. Clay vessels.</p> |

43. In fact, 15 quarries were utilized under implementation of the Project. The Contractor has obtained all necessary documents/approval from local authorities and the State Agency on Environmental Protection and Forestry Agency (SAEPF) to develop these quarries. Table 4 summarizes the main characteristics of the quarries.
44. By the time of report preparation, the Quarry Reclamation Project is at the stage of completion. Upon receipt of the Reclamation project, with a positive conclusion of the state expertise on environmental and industrial safety, the quarries should be reclaimed in accordance with this project and handed over to the Reclamation Commission. As of December 2024, all used quarries have been technically planned: quarries' sides have been brought to a technically safe condition (photo 23 -28).

Table 4. Characteristics of quarries at report preparation time.

| Quarries' No | Chainage location | Volumes (m ³) | Area (Ha) | Distance from road | Remark |
|--------------|-------------------|------------------------------|-----------|--------------------|--|
| Lot 1 | | | | | |
| №1 | km. 5+500 | 600 000 | 5,09 | 430 m | Technical planning has been carried out |
| №2 | km. 7+100 | 164 000 | 4,1 | 122 m | Technical planning has been carried out |
| №3 | km. 7+500 | 195 200 | 4,88 | 122 m | Not Developed. Submitted under a Certificate of No Land Disturbance dated February 6, 2024. |
| №4 | km. 9+000 | 380 000 | 7,6 | 25 m | Technical planning has been carried out |
| №5 | km. 16+600 | 1 744 000 | 43,6 | 42 m | Technical planning has been carried out |
| №6 | km. 16+600 | 51 000 | 12,84 | 42 m | Technical planning has been carried out |
| №7 | km. 16+600 | 113 000 | 2,83 | 42 m | Technical planning has been carried out |
| №8 | km. 19+360 | 66 500 | 22,16 | | Not Developed. Submitted under a Certificate of No Land Disturbance dated February 22, 2024. |
| №9 | km. 20+600 | 65 600 | 1,64 | 120 m | Not Developed. Submitted under a Certificate of No Land Disturbance dated February 22, 2024. |
| №10 | km. 22+700 | 380 000 | 9,5 | 37 m | Technical planning has been carried out |
| №11 | km. 26+800 | 488 000 | 12,2 | 80 m | Technical planning has been carried out |
| № 12 | Km. 31+240 | 225 200 | 5,63 | | Not Developed. Submitted under a Certificate of No Land Disturbance dated February 22, 2024 |
| № 13 | Km. 33+000 | In the territory of Forestry | 20,3 | | Not Developed. Submitted under a Certificate of No Land Disturbance dated January 15, 2024. |
| № 14 | km. 34+240 | 245 600 | 6.14 | 325 m | Technical planning has been carried out |
| № 15 | Km. 36+560 | In the territory of Forestry | 4,0 | | Not Developed. Submitted under a Certificate of No Land Disturbance dated January 15, 2024. |
| № 16 | km. 39+450 | 164 000 | 4.1 | 520 m | Technical planning has been carried out |
| № 17 | km 43+400 | 124 000 | 3.1 | 40 m | Technical planning has been carried out |
| Lot 2 | | | | | |
| № 18 | km. 71+500 | - | 5,2 | 5 m. | Technical planning has been carried out |
| № 19 | km. 75+400 | 108 000 | 2,7 | 30 m. | Not Developed. Submitted under a Certificate of No |

| | | | | | |
|------|------------|---------|------|------|---|
| | | | | | Land Disturbance dated February 19, 2024 |
| № 20 | km.81+200 | - | 5,6 | 50 м | |
| № 21 | km 81+400 | 375 000 | 7,5 | | Not Developed. Submitted under a Certificate of No Land Disturbance dated February 19, 2024 |
| № 22 | km 84+400 | 305 000 | 6,1 | | Not Developed. Submitted under a Certificate of No Land Disturbance dated February 19, 2024 |
| № 23 | km. 86+000 | 85 000 | 2,0 | 20 м | Technical planning has been carried out |
| № 24 | km. 89+093 | 105 145 | 0.77 | | Technical planning has been carried out |

45. During quarry development, the implementation of Quarry Management Plan was satisfactory. Mitigating measures on impact of the quarry development works, namely: marking of quarry boundaries, removal of topsoil before quarry development, hydro-irrigation of quarry material and access roads to quarry were implemented (Photos 29-36). In the process of quarry development there were observed facts of non-compliance with industrial safety in terms of stability of the quarry sides (Photos 37,38). After written warnings, the Contractor eliminated the violations and further ensured safe quarry development.



Photo 25. Quarry at km. 71+500 during development and Photo 26 after technical layout.

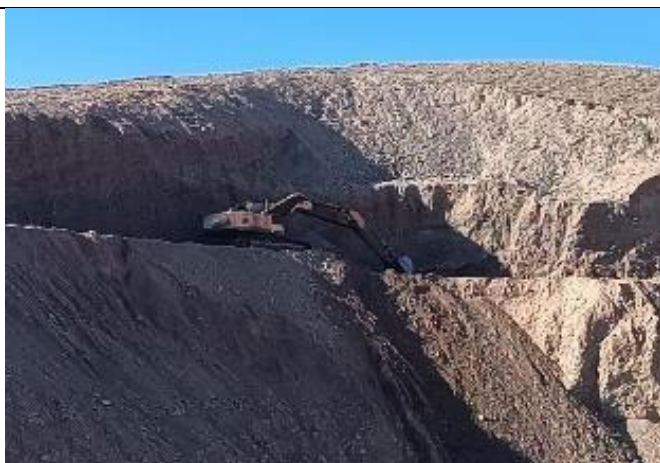


Photo 27. Quarry km. 75+400. Setting sides to a stable position.

Photo 28. Quarry layout km.89+093.



Photo 29. Quarry technical leveling at km 34+240 and bringing quarry slopes to a safe condition.

Photo 30. Loading of material at the quarry at km. 75+400.



Photo 31: Quarry at km 7+100 on RHS, the quarry boundaries are marked by installing white posts.



Photo 32. Lot 1. The topsoil was removed from quarry site at km.9+000, the quarry boundaries were marked by installing white posts with flags



Photo 33. Quarry at km.75+400. The material is being mined, after it has been moistened.



Photo 34. Quarry at km. 81+200, loading of moistened material.



Photo 35. Watering of access roads to the quarry and Photo 36 to the Crushing plant production base on Lot 2.

| | |
|--|--|
|  |  |
| <p>Photo 37. Quarry km 16+600. There is no stability of quarry sides: slope angle of quarry side is 90°, it should be 40-45°</p> | <p>Photo 38. Quarry km 16+600. Ensuring stability of quarry sides.</p> |

3.4 Construction wastes.

46. The following wastes are generated during main and auxiliary economic activities of road reconstruction:

- unsuitable soil
- removed old asphalt pavement and demolished concrete slabs
- municipal solid waste (biodegradable and non-biodegradable) from kitchens, canteens, offices and campsites
- wastewater and municipal solid waste from staff activities in the construction camp

Old asphalt

47. The Contractor has obtained all necessary permitting documents from relevant state authorities (village administrations, territorial environmental protection authorities) to place the old asphalt in environment.

48. For Lot 1, removed old asphalt concrete in amount of 64,500 m³ were placed at old quarries located at km. 7+100, 20+100 and at spoil sites at km. 21+260, 32+720, 38+660, 40+200, 40+360 (Photos 39-47), and some of it was used to cover unpaved bypass roads

49. Disposal of old asphalt in quarries was carried out in accordance with the Old Asphalt Disposal Plan developed by Contractor and agreed with the Issyk-Kul Regional Department of Environmental Protection of MNRETS KR. Information on the dumps is presented in Table 5.

50. In accordance with the Disposal Plan, a waterproof screen was placed on the foundation of old quarries and spoil areas to bury old asphalt concrete.

51. The old asphalt concrete spoils were all reclaimed in 2022 upon completion of removal of the old asphalt concrete pavement from the project road (Photos 42, 45-47, 50,52), but they were turned over to the Commission by Certificate in 2024.

52. On Lot 2 removed old asphalt concrete in the amount of 33,000 m³ was used for backfilling of rural streets proposed by local authorities, for construction of unpaved technological roads, and remaining part was removed to dumps (Photos 50-60) agreed with local authorities and state environmental authorities. Information on dumps is reflected in Table 5.

| | |
|---|--|
|  |  |
| <p>Photo 39. Lot 1. Scarifying and removal of old asphalt concrete at km.7+560 to the old quarry at km 7+100.</p> | <p>Photo 40. Lot 1. Scarifying and removal of asphalt from temporary bypass roads.</p> |
|  |  |
| <p>Photo 41. Scarifying of old asphalt at km. 17+500.</p> | <p>Photo 42. Scarifying and removal of old asphalt at km. 28+200-28+700.</p> |



Photo 43. Old quarry at km. 7+100 before old asphalt waste disposal. April 2021 and Photo 44 after reclamation of the disposal site. October 2024.



Photo 45. Placement of old asphalt concrete at km. 7+100. June 2021.

Photo 46. After completion of old asphalt placement (August 2021).



Photo 47. Recultivated old asphalt dump located at km. 19+960 LHS. November 2022.

Photo 48. Recultivated old asphalt dump located at km. 20+100 RHS.



Photo 49. Recultivated old asphalt dump at km. 33+000. November 2022.



Photo 50. Scarifying of asphalt concrete pavement at km 74+550.



Photo 51. Old asphalt dump at km. 70+180 LHS before reclamation and Photo 52 after. October 2023.



Photo 54. Layout of old asphalt dump located on RHS at km. 89+093.



Photo 55. Lot 2. Old asphalt, to prevent dust formation, laid on the technological ground road to Crushing plant.



Photos 56, 57. Improvement of peripheral street with old asphalt (laying and leveling) in Cholpon village.



Photo 58, 59. Improvement of peripheral street with old asphalt (laying and leveling) in Cholpon village.



Photo 60. Improvement of internal roads in Epkin village.

Table 5: Characteristics of dumping sites for scraped old asphalt.

| № | Location | Distance from road | Wastes' volume | | | Wastes' amount | Assessment of conditions and compliance with environmental protection measures |
|-------|-----------|--------------------|----------------|--------|--------------------------|----------------|--|
| | Chainage | (LS/RS) | Area (Ha) | Height | Volume (m ³) | | |
| Lot 1 | Km 7+000 | 50 (RS) | 10 400 | | 62 862 | 21000 | Reclamation of the old quarry was carried out |
| | km 20+100 | 50 (RS) | 48 700 | | 33 902 | 9000 | Reclamation of the old quarry was carried out |
| | km 21+260 | 130 (LS) | 183 000 | | 80 374 | 10500 | Reclamation of waste disposal site was carried out |
| | km 32+720 | 150 (LS) | 4 100 | 3,0 | 16 000 | 11500 | Reclamation of the old quarry was carried out |
| | km 38+660 | 545 (LS) | 26 100 | 3,0 | 78 535 | 3500 | Reclamation of waste disposal site was carried out |
| | km 40+200 | 141 (LS) | 9 000 | 1,4 | 12 461 | 4500 | Reclamation of waste disposal site was carried out |
| | Km 40+360 | | 106400 | | | 4500 | Reclamation of waste disposal site was carried out |
| Lot 2 | km 70+180 | 400 (RS) | 18 800 | 4,4 | 82 784 | 11000 | Reclamation of waste disposal site was carried out |
| | km 89+090 | 80 (RS) | 12 000 | 1,8 | 21 800 | 22000 | Reclamation of waste disposal site was carried out |

Table 5: Characteristics of dumping sites for scraped old asphalt

Unsuitable soil.

53. During construction period the total amount of unsuitable soil amounted to 166,068 m³; 66552 m³ - from Lot 1 and 99546 m³ - from Lot 2. The Contractor has obtained all necessary permitting documents from relevant state authorities (village administration, territorial environmental protection authorities) to place unsuitable soil in the environment. All materials were delivered to disposal sites as indicated in Table 6. On Lot 1, old quarries were allocated for disposal of unsuitable soil, for purposes of reclamation, at km. 12+00 and km. 40+360, as well as land areas requiring surface leveling and old quarries on Lot 2.

54. It should be noted that during reclamation of unsuitable soil dumps the Contractor has brought land's terrain to a better condition than it was before soil storage (photos 61, 62) or to the original condition (photos 63-69)

Table 6: Characteristics of unsuitable soil disposal sites.

| № | Locatio n, km | Distanc e from road | Waste volumes | | | Quantity of wastes m3 | Assessment of conditions and compliance with environmental protection measures |
|-------|------------------|---------------------------|---------------|-------------|----------------|-----------------------------|---|
| | | (LS/RS) | S, Hectare | Height m | Volume (m³) | | |
| Lot-1 | | | | | | | |
| 1 | 12+100 | 100 (LS) | 12500 | 4 | 50 000 | 24544 | Reclamation was performed and submitted to Commission by Certificate dated December 30, 2024. |
| 2 | 40+360 | 30 (LS) | 10645 | 2,1 | 22 015 | 4489 | Reclamation was performed and handed over to the commission |
| Lot-2 | | | | | | | |
| 3 | 65+180 | 410 (LS) | | | | 918 | Reclamation was performed and submitted to Commission by Certificate dated December 30, 2024. |
| 4 | 65+300 | 1(RS) | | | | 2632 | Reclamation was performed and submitted to Commission by Certificate dated December 30, 2024. |
| 5 | 65+520 | 29(LS) | | | | 2207 | Reclamation was performed and submitted to Commission by Certificate dated December 30, 2024. |
| 6 | 65+520 | RS | | | | 3049 | Reclamation was performed and submitted to Commission by Certificate dated December 30, 2024. |
| 7 | 70+180 | 400(LS | | | | 11704 | Reclamation was performed and submitted to Commission by Certificate dated December 30, 2024. |
| 8 | 71+640 | 12 (LS) | 3850 | 4 | 5 401 | 14691 | Reclamation was performed and handed over to the commission |
| 9 | 71+860 | 12 (LS) | 2069 | 4 | 8 278 | 8758 | Reclamation was performed and handed over to the commission |
| 10 | 80+900 | 70 (LS) | 4200 | 3 | 12 600 | 12000 | Reclamation was performed and handed over to the commission |
| 11 | 89+090 | 60m (RS) | 12000 | 1,8 | 21 800 | 18000 | Reclamation was performed and handed over to the commission |



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| <p>Photo 61. Lot 1. Site allocated for dumping of unsuitable soil at km.12+00.</p>  | <p>Photo 62. Lot 1: Unsuitable soil dump at km.12+00 after reclamation</p>  |
| <p>Photo 63. Lot 2. Site allocated for disposal of unsuitable soil at km.65+520 LHS, its condition prior to disposal.</p>  | <p>Photo 64. Lot 2. Site allocated for disposal of unsuitable soil at km.65+520 LHS, its condition prior to soil disposal</p>  |
| <p>Photo 65. Spoil dump at km. 62+520 LHS, during disposal of unsuitable soil.</p>  | <p>Photo 66. Spoil dump at km. 62+520 LHS, after reclamation. June 2024.</p>  |
| <p>Photo 66. Spoil dump at km. 65+520 RHS before reclamation.</p>  | <p>Photo 67. Spoil dump at km. 65+520 RHS after reclamation.</p>  |

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| <p>Photo 68. Layout of unsuitable soil dump at km.36+400. September 2023.</p> | <p>Photo 69. Dump of unsuitable soil at km. 80+800 left after reclamation.</p> |

Construction reinforced concrete wastes.

55. Construction reinforced concrete waste was generated during dismantling of bridges and culverts.
56. Dismantled reinforced concrete products were timely removed to the sites allocated by the road maintenance organization for storage of old reinforced concrete products.

Domestic waste.

57. Domestic waste is mainly generated in worker camps. Both solid and liquid domestic waste is generated.
58. Solid and liquid household waste consists of packaging materials, paper and cardboard, dry waste, plastic and glass, and food waste, which is pre-collected in plastic bags. Liquid domestic waste is wastewater from living rooms and kitchens.
59. Municipal solid waste was collected in containers installed at Contractor's Camp and production bases and transported in a timely manner (Photos 70, 72) and disposed at municipal landfill in Balykchy on Lot 1 and Cholpon on Lot 2. Cholpon on Lot 2. Wastewater was transported (Photos 71, 73) to the treatment facilities of Balykchy in accordance with the contract with the municipal enterprise of Balykchy. Balykchy municipal enterprise - "Gorvodokanal".



Photo 70. Lot 1. Solid Waste removal from the Contractor's camp.



Photo 71. Lot 1. Removal of liquid wastewater from Contractor's camp.



Photo 72. Lot 2. Removal of solid waste from the Contractor's camp.



Photo 73. Lot 2. Removal of liquid wastewater from the Contractor's camp.

3.5 Pavement.

60. Asphalt paving work on project road segments on Lot 1 and Lot 2 was completed in 2023 (Photos 74-83), paving of sidewalks and exits was continued and completed in 2024 (Photos 84-85).

61. During asphalt paving construction works, the Contractor ensured implementation of measures to mitigate the impact of these works on the environmental and social environment in accordance with SSEPM the following Plans: Noise and Vibration Instrumental Monitoring Plan, Noise Management Plan, Water Quality Management Plan, Air Quality Management Plan, Construction Waste Management Plan, Land Protection Management Plan, Safety Plan. Implementation of measures was satisfactory, no adverse environmental and social impacts occurred, as confirmed by instrumental and laboratory studies of noise, vibration, air and water quality, as well as by results of visual monitoring conducted by the Consultant.



Photo 74. Lot 2. Binder course paving km 87+100.



Photo 75. Lot 2. SMA arrangement km 81+675-82+000 RHS.



Photo 76. Lot 1. Binder course paving on km 17+230 - km 17+500.









Photo 77. Lot 1. SMA paving with 3+140 LHS.



Photo 78. Lot 1: Road with new asphalt pavement.



Photo 79. Lot 1. Road with new asphalt pavement.

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| <p>Photo 80. Lot 2. Road with new asphalt pavement.</p> | <p>Photo 81. Lot 2. Road with new asphalt pavement.</p> |
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| <p>Photo 82. Lot 2. Roundabout at km 62+00.</p> | <p>Photo 83. Lot 2. Km. 71-73.</p> |
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| <p>Photo 84. Sidewalk paving on km 2+050-2+414 LHS. September 2024.</p> | <p>Photo 85. Lot 2. Sidewalk paving at km 70+100-70+740 LHS.</p> |

3.6 Bridges construction.

62. Project for Lot 1 included construction of 1 bridge over the irrigation canal at km.12+063 (Photos 86-87).

63. Construction works were carried out outside the irrigation season. Dismantled reinforced concrete slabs were handed over to Road maintenance department. No littering of bridge construction area with construction waste was observed.

64. For Lot 2. in accordance with Project provides for construction of 4 bridges at km. 65+410 over Joon-Aryk River, km 68+044 over Mukandyn-Suusu River, km 86+261 over Sazdyn-Suusu River and km 88+795 over Zhar-Korundu River. The Contractor provided water diversion and bypass roads for construction of bridges at the following sections of km. 86+261, km 88+795 and km 68+044. Construction works on bridge at km. 65+410 were carried out during period when there was no water in the river. Dismantled reinforced concrete slabs of old bridges, bypass bridges and culverts on bypass roads were removed from sections in a timely manner (Photos 88-93).



Photo 86. Lot 1: Steel girder strapping of bridge bank abutment at km 12+063.



Photo 87. Lot 1. Bridge construction completed.



Photo 88. Bridge construction at km 65+410. Installation of the foundation for the bridge piers.



Photo 89. Concrete pouring of transition slab 1 km 68+044.



Photo 90. Dismantling of temporary bridge for bypass road at km 62+500 over Joon-Aryk River.



Photo 91. Removal of dismantled parts of temporary bridge for bypass road at km 62+500.



Photo 92. Lot 2. Removal of dismantled bridge slabs at km. 62+400.



Photo 93. Lot 2. Photo 6. Construction of a bridge over the Joon-Aryk River at km. 65+410, installation of slabs.

65. During bridge construction, instrumental monitoring of water quality impacts of works was carried out. There was an exceedance of suspended solids in the water quality study according to results of water analysis carried out in June 2023. The causes of the exceedance were identified and eliminated: crumbling and spillage of soil into river from the temporary bypass road section.

66. In general, there was no negative impact of bridge construction on environmental and social environment.



Photo 94. Lot 2. Mukandyn-Suus River bridge, km. 68+040. There are no protective measures to prevent soil from entering the river during construction works.



Photo 95. Lot 2. Mukandyn-Suus river bridge, km. 68+040 Water diversion is provided to prevent soil from entering the river during construction works.



Photo 96. Lot 2. Bridge km 86+261. r. Sazdyn-Suus, bypass road.

3.7 Culvert construction. Installation of parapets.

67. 63 culverts were installed on Lot 1 and 51 culverts on Lot 2. Parapet barriers on Lot 1 - 1339 pcs, on Lot 2 - 946 pcs. During installation of culverts the Contractor ensured implementation of mitigating measures on the impact of works on environment



Photo 97. Lot 1. Completed installation and waterproofing of culvert at 37+161.



Photo 98. Lot 1. Compaction of soil backfill of culvert at km 20+670.



Photo 99. Lot 1. Concrete reinforcement of culvert inlet and outlet at 13+763 BS.



Photo 100. Lot 2. Installation of headwalls km 78+772.



Photo 101. Lot 1. Concrete reinforcement of culvert inlet and outlet at 18+326BS.



Photo 102. Lot 2. Slope reinforcement at culvert inlet km 71+800 LHS.



Photo 103. Lot 1, km 22+575, culvert cleaning.



Photo 104. Lot 1: Culvert cleaning, km 33+869.



Photo 105. Lot 2. Construction of reinforcement at culvert inlet, km.88+692



Photo 106. Lot 2. Pouring of concrete for slope reinforcement at km 64+860.



Photo 107. Lot 1. Assembly of installed parapets from km 14+000-15+000. February



Photo 108. Lot 1. Installation of parapets, km.41



Photo 109. Installation of parapets on 40+700-40+870 RHS.



Photo 110. Installation of parapets at km.11+200.

3.8 Contractor's Production Base and Camp.

68. The asphalt-concrete plant, concrete mixing unit and crushing plant on Lot 1 (Photo 111) are located on a section of the Balykchy project section km 0 - km 43 at km 16+200, RHS at a distance of 50 meters. (Figure 6). All necessary permits/approvals from local authorities and approval of the State Committee on Ecology and Climate (SCEC) have been obtained.



Photo 111. Production base on Lot 1.

69. The following buildings and structures are located on site's territory a control room building, a stone crushing plant, an asphalt-bitumen plant, a fuel oil storage facility, a concrete mixing unit, a tank for primary treatment of wastewater from the (photo 112-118).



Photo 112. Lot 1. Production Facility. The AC plant and photo 113 fuel oil storage facility.



Photo 114. Lot 1. Production base. Concrete mixing plant.

Photo 115. Lot 1. 3-chamber primary wastewater treatment tank. Concrete mixing plant.



Photo 116. Lot 1. Reinforced concrete production site.

Photo 117. Lot 1. Parking lot for construction equipment.



Photo 118. Lot 1. Sanitary condition of filling station territory.

70. The Subcontractor's camp was located on the section of the Balykchy project section km.0 - km.43 at km.16+100, RHS at a distance of 50 meters. The camp site included: office and living quarters, a medical station with a doctor and first aid facilities, a prayer room (namazkana), a dining room with a kitchen block, separate toilet and shower facilities for men and women, and an open space for recreation and meetings in the middle of the buildings. Living quarters for national staff and workers who do not live in the area have a capacity for 60 people (Photos 119-126).

71. Fire prevention and emergency measures are ensured. Fire extinguishers and fire shields are strategically distributed outside buildings, rooms inside buildings are equipped with automatic fire extinguishing system. Various informational materials on COVID-19 and fire safety, emergency response was placed around the buildings. During the entire construction period, the sanitary condition of the camp territory, living and working places were in good condition.



Photo 119. Lot 1. General camp view Lot 1 km 16 + 100.



Photo 120. Lot 1. Accommodation Camp and Subcontractor's Office.



Photo 121 Lot 1. Subcontractor's accommodation camp.



Photo 122. Lot 1. Medical station.



Photo 123. Bathroom.



Photo 124. Contractor's office.



Photo 125. Kitchen.



Photo 126. Lot 1 camp canteen.

72. Dismantling of the Contractor's Production Base and Camp, which started in December 2023, was completed in January 2024 (Photos 127-130). Reclamation of the land used for the Production

Base and Residential Camp was completed in January and handed over to the landowner in February (Attachment 1. Photo Acceptance Certificate dated February 16, 2024).



Lot 1. Photo 127. Production base area after reclamation.



Lot 1. Photo 128. Machinery parking lot at the base of Lot 1, after reclamation.



Photo 129. Lot 1. Camp in the process of completing dismantling. January.



Photo 130. Camp area on Lot 1 in the process of dismantling facilities as of 01/29/24.

73. The Contractor's camp on Lot 2 and production base are located on Kochkor-Epkin section 2A at 81 km, 250 meters from the project site, with an area of 4.5 hectares. All necessary documents/approval from local authorities and approval from state environmental authorities have been obtained.



Photo 131. Location of the stone crushing plant production base and Contractor's camp.

74. Camp territory is fenced and landscaped with tree planting. On camp territory there are: office, medical station with a doctor and first aid facilities, living quarters for the Contractor's personnel, construction equipment parking area, canteen with a kitchen block. The living quarters for international and national staff and workers who do not reside in the area have a capacity of 45 persons. Each living room has a bathroom and a shower room. During the construction period, the sanitary condition of the camp, accommodation and work areas was in good condition (Photos 132-136).



Photo 132. Contractor's camp.
Accommodation rooms.



Photo 133. Contractor's Camp.
Kitchen.





Photo 134. Living room.

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| Photo 135. Dining room. | Photo 136. Bathroom in the living room. | Photo 137. Material storage |

75. The following buildings and structures are located on the site as of December 2024: two stone crushing plants, a concrete mixing unit, a site for the production of reinforced concrete, a garage, a parking lot for construction equipment and vehicles, and a repair and mechanical section.

76. Problems with dust on stone crushing plant territory. Dust occurred at the plant, which led to contamination of adjacent territory, causing harm to health and environment. Several letters of non-compliance were sent to Contractor, which were eliminated/reduced by installing a hydro-irrigation system at the plant and covering the access technological roads to base with old asphalt removed from project road.

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| Photo 133. Lot 2. Crushing plant. | Photo 134. Reinforced concrete production area. | Photo 132. Parking for vehicles. |
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| Photo 134. Lot 2. Territory of the production base, reinforced concrete products manufacturing area. | Photo 135. Lack/insufficient hydro-irrigation of dirt access roads. | Photo 136. Lot 2. Operation crushing plant without watering the processed material. |

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| <p>Photo 137. Laying old asphalt on unpaved access roads.</p> | <p>Photo 138. Lot 2. Operation of crushing plant after installation of water irrigation system: no dust emission.</p> | <p>Photo 139. Lot 2. Material storage at the production base.</p> |

3.9 Tree management.

77. In 2020, during the work to secure the design marks on project site, 1909 trees were identified that were subject to "forced" felling, of which: 160 on Lot 1 and 1749 on Lot 2. To minimize the impact on green spaces, Consultant and Contractor conducted a joint analysis of control points. This made possible to reduce number of felled trees, preserving 83 trees.

78. Total number of trees that were subject to forced felling was 1,704 pcs; 122 trees on Lot 1 and 1,582 trees on Lot-2. The Contractor was required to plant new saplings in a ratio of 1:2 (two saplings for each tree felled), i.e. 3,408 saplings.

79. Starting from 2022, the Contractor began phased planting of tree seedlings, in accordance with Tree Planting Plan, in separate areas on Lot 1 and Lot 2; during this period, the planting of 1,600 seedlings out of planned 3,408 seedlings was ensured, namely:

Lot 1 – 240 pieces of weeping willow seedlings,

Lot 2 - 1360 seedlings, including: birch - 250 pieces, weeping willow - 250 pieces, poplar - 650 pieces, vinegar tree - 70 pieces, almond -30 pieces, Scots pine - 100 pieces, Tien Shan spruce - 10 pieces.

80. In fall of 2023, the Contractor, together with Consultant, conducted an inventory of survived/dead seedlings planted during period 2022-2023. Based on results, it was established:

in Lot 1 the number of elm (weeping willow) seedlings that took root was 9%,

for Lot 2 the number of rooted seedlings by seedling types is as follows:

Autumn planting 2022: poplar - 45%, elm (turpan tal) - 80%, downy sumac (vinegar tree) - 53%, almond - 80%, pine - 73%.

Spring planting 2023: poplar – 68%, elm (weeping willow) – 71%, birch – 87%, spruce – 100%.

In terms of survival rate, the highest percentage is for birch – 87%, almond – 80%, and turpan tal – 80%.

A difficult process of survival of pine seedlings was observed (photo 140, 141). Despite the indicated low survival rate of sumacs, it can be considered that this tree turned out to be the most tenacious:

since those same 53% of seedlings took root, taking into account their untimely and insufficient watering (photo 142-143).

The reason for the death of the seedlings is their untimely and insufficient watering, which was established during the visual monitoring of the planted seedlings. In accordance with Engineer's Instruction KGZ4267/02/01/TM/255 dated August 14, 2023, the Contractor must restore the dead seedlings during the spring tree planting in 2024.

In 2024, the survival rate of planted seedlings was monitored. The monitoring results showed that the number of seedlings that did not survive/died was 658 out of 1,600 planted seedlings.

81. In 2024, tree planting was completed. The contractor provided the remaining compensatory planting of seedlings in full in the amount of 1,808 pieces, as well as restoration planting for the lost seedlings in the amount of 417 out of 658 pieces. The total number of seedlings planted in 2024 was 2,225 pieces.

82. According to the terms of the current contract between the Ministry of Transport and Communications of the Kyrgyz Republic and SinoHydro-PowerChina Roadbridge JV, the contractor must plant new seedlings to replace the cut down trees, as well as carry out maintenance (watering, replacing dried seedlings with new ones) until the end of the defective period.



Photo 140, Cholpon village. Condition of pine trees in May 2023, photo 141 in August 2023, photo 142 in September 2023.



Photo 143 s.Cholpon. Samui condition in June 2023, Photo 144 in August 2023, Photo 145 in September 2023.



Photo: Planted fir trees to replace dead pines.

83. Considering that there are practically no places for planting new seedlings on the project road to Lot 2, local village administration proposed sites located at a distance of 1-3 km from the project road for planting seedlings. Also, requests were received from village administration to provide them with seedlings for planting in the organized park areas located on their territory, while they will carry out further work on planting and caring for the seedlings themselves. Considering the lack of places for planting seedlings on the project road, these proposals were approved by ADB.

84. Control and monitoring of planting and watering of seedlings, as well as monitoring of seedling survival are carried out on an ongoing basis by environmental protection specialists of the Consultant, the contracting company and representatives of the Ministry of Transport and Communications of the Kyrgyz Republic.

85. During the monitoring of the survival of seedlings on Lot 1, along the project road, it was found that the seedlings were in a critical condition. A large number of goats and sheep were grazing in the places where the seedlings were planted. As a result, the young shoots on the seedlings were eaten by animals. A large number were broken by them. In this area, in accordance with the Tree Planting Plan, the stadium should have been fenced off before the seedlings were planted, which was done much later, as a result of which the trees died.

86. During defective period, the Contractor must ensure proper care for planted seedlings along the project road to ensure their good survival and safety from livestock.

4. INFORMATION ON THE PROCESSES THAT WENT WELL, AS WELL AS ASPECTS THAT WERE WORSE DURING CONSTRUCTION.

87. At present, all necessary actions to complete the project activities have been completed. With the exception of the quarry reclamation, which must be carried out upon completion of the development and approval of the Quarry Reclamation Project by the Ministry of Natural Resources and Technical Requirements.

88. During the construction period, dusting was periodically observed at the stone crushing plant. The main reason for dusting during the crusher operation was clogging of spray nozzles or failure of water pipes.

89. A positive example during the construction of the project road was the quality of the reclamation of the waste dumps and old asphalt dumps in accordance with the Burial Plan. Reclamation of the waste dumps and old asphalt dumps was carried out immediately after the waste dumps were no longer in use.

90. A positive example is the planting of seedlings in park areas, school grounds, and a stadium located 1-3 km from the project road, at the request of local village administration, with the approval of ADB, since there were practically no places for planting new seedlings on the project road. At the same time, local village administration was obliged to carry out further work on planting and caring for the seedlings themselves. The total number of seedlings planted was 3,825 pieces.

91. A negative example is the frequent recurring contamination of the production base area with petroleum waste on Lot 2. These violations were eliminated in a timely manner according to the written and oral Instructions of the Engineer, although this could have been prevented.

92. In 2023, the construction of the road was completed. A good example is the efficiency of the Contractor's preparation for demobilization: timely meetings were held with land owners to agree on the issues of reclamation of lands used for quarries, dumps, production bases, Contractors' accommodation camps and their acceptance and transfer to Lot 1. Before receiving the Quarry Development Project, the Contractor ensured the technical planning of the territory of the exhausted quarries and bringing the quarry sides to a stable position. Upon receipt of the Quarry Reclamation Project, the quarry reclamation will be completed in full in accordance with the design documentation.

5. CONCLUSIONS AND RECOMMENDATIONS.

93. Contractor has been implementing environmental protection measures stipulated in ESMP, but not always in a timely manner despite regular trainings conducted by Consultant's national environmental specialist. Having analyzed identified non-compliances, it can be concluded that in future, in order to avoid such facts, Contractor organizations involved in similar projects should build a clear vertical management and compliance with the requirements stipulated in the SSEMP in order to avoid such facts.

94. According to contract's terms, an identified discrepancies and demands for elimination of identified violations were sent from Consultant to Contractor on a regular basis in written and oral form.

95. Considering that Contractor did not always eliminate identified non-conformities within specified timeframes during construction work, the Consultant had no opportunity to apply any measures other than suspending the work. It is necessary to take this experience into account and "include" additional mechanisms of influence when preparing contracts in future projects in order to have more effective "levers" of influencing the Contractor to carry out the necessary environmental protection measures without repeated warnings and to prevent negative consequences in advance. One of such effective mechanisms may be clauses in the contractor's contract concerning the application of penalties, which will increase the contractor's responsibility for compliance with environmental protection requirements.

96. The Contractor must carry out the reclamation of quarries upon receipt of Development Project and hand them over to commission. Dismantle the equipment at production site of the plant and at Contractor's camp site on Lot 2.

97. Contractor to provide proper care of planted saplings, along project road, during defective period, for their good rooting and safety from livestock

98. Contractor to ensure monitoring of rooting of all planted seedlings under the Project in May-June 2025

Annex 3 Results of air instrumental monitoring.

| Location of the monitoring site | Monitoring period | CO mg/m ³ | NO ₂ mg/m ³ | SO ₂ mg/m ³ | Dust concentration, mg/m ³ | Noise level, dB | Vibration level |
|--|-----------------------|-------------------------|--------------------------------------|--------------------------------------|--|--------------------|-----------------|
| Regulatory maximum permissible concentration of pollutants | | 5 | 0.085 | 0.5 | 0.5 | 80 | 112 |
| LOT 1 | | | | | | | |
| 70. Balykchy town 0+000 km Latitude 42°27'09 Longitude 76°09'37'' | Dec 2015 (baseline) | | 0,022±0,004 | 0,05±0,006 | 0,29±0,07 | 43,1 | 92,4 |
| | June 2021 (baseline) | 0,4±0,08 | 0,082±0,021 | 0,008±0,002 | 0,073±0,015 | 68 | 96 |
| | Aug 2021 (baseline) | | | | | 65 | 97 |
| | Oct 2021 (baseline) | | 0,135±0,24 | 0,085±0,01 | <0,2 | 79 | 91 |
| | Dec 2021 (baseline) | | 0,164±0,03 | 0,05 | 0,228±0,057 | 70 | 95 |
| | April 2020 (baseline) | | | | | 66 | 98 |
| | June 2020 (baseline) | <0,05 | 0,15±0,03 | 0,325±0,057 | | 66 | 96 |
| | August 2022 | | | | | 70 | 91 |
| | September 2022 | 0,7±0,14 | 0,081 | 0,138 | 0,164 | | |
| | October 2022 | | | | | 73 | 94 |
| | April 2023 | | | | | 69 | 97 |
| | June 2023 | 0,9±0,18 | 0,079±0,14 | 0,078±0,009 | 0.159±0,040 | | |
| | July 2023 | 1,0±0,2 | 0.043±0,008 | 0,012±0,001 | 0.163±0,041 | 67 | 89 |
| | October 2023 | 1,4±0,28 | 0.070±0,013 | 0,018±0,002 | 0.157±0,039 | 69 | 80 |
| | December 2023 | 1,67±0,25 | 0,062±0,004 | 0,205±0,006 | 0,29±0,07 | 71 | 78 |
| | June 2024 | 0,2±0,31 | 0.069±0,013 | 0,017±0,002 | 0.142±0,031 | 74 | 93 |
| 71. Tash-Sarai village 11+000 km Latitude 42°22'14 Longitude 76°04'53'' | Dec 2015 (baseline) | | 0,027±0,005 | <0,05 | <0,26 | 40,2 | 91,7 |
| | June 2021 (baseline) | 0,2±0,08 | 0,025±0,0063 | 0,004±0,001 | 0,4±0,08 | 57 | 87 |
| | Aug 2021 (baseline) | | | | | 65 | 88 |
| | Oct 2021 (baseline) | | 0,09±0,016 | <0,05 | <0,2 | 70 | 92 |

| Location of the monitoring site | Monitoring period | CO mg/m ³ | NO ₂ mg/m ³ | SO ₂ mg/m ³ | Dust concentration, mg/m ³ | Noise level, dB | Vibration level |
|--|----------------------|-------------------------|--------------------------------------|--------------------------------------|--|--------------------|-----------------|
| Regulatory maximum permissible concentration of pollutants | | 5 | 0.085 | 0.5 | 0.5 | 80 | 112 |
| | Dec 2021 (baseline) | | 0,053 | <0,05 | 0,228±0,05 | 68 | 92 |
| | Apr 2022 | | | | | | 62 |
| | Jun 2022 | | 0,04±0,01 | <0,05 | 0,2±0,05 | | 66 |
| | August 2022 | | | | | 70 | 88 |
| | September 2022 | 0,12 | 0,06 | 0,149 | 0,246 | | |
| | October 2022 | | | | | 64 | 85 |
| | April 2023 | | | | | 55 | 101 |
| | June 2023 | 1.1±0,22 | 0,078±0,014 | 0,088±0,011 | 0,246±0,062 | | |
| | July 2023 | 2.1±0,42 | 0,050±0,009 | 0,008±0,001 | 0,245±0,061 | 65 | 93 |
| | October 2023 | 0,3±0,22 | 0,070±0,013 | 0,018±0,002 | 0,157±0,039 | 61 | 84 |
| | December 2023 | 1,67±0,25 | 0,062±0,004 | 0,205±0,006 | 0,29±0,07 | 50 | 88 |
| | June 2024 | 1,4±0,28 | 0,051±0,011 | 0,010±0,001 | 0,127±0,082 | 58 | 95 |
| 72. Production base (Asphalt plant, crushing plant) Quarry km 16+600 Latitude 42°22'14 Longitude 76°04'53" Asphalt Plant Rock Crusher | June 2021 (baseline) | 0,7±0,14 | 0,033±0,0083 | 0,006±0,0015 | 0,012±0,0024 | 62 | 93 |
| | Aug 2021 | | | | | | 90 |
| | Oct 2021 | | 0,05 | <0,05 | 0,25 | 65 | 94 |
| | Dec 2021 | | 0,087 | <0,05 | 0,19 | 58 | 87 |
| | Apr 2022 | | 0,07±0,01 | <0,05 | 0,25 | 61 | 93 |
| | Jun 2022 | | 0,04 | <0,05 | 0,35 | 58 | 84 |
| | June 2022 | 0,07±0,01 | <0,05 | 0,25 | 58 | 84 | |
| | June 2022 | 0,04 | <0,05 | 0,35 | | | |
| | August 2022 | | | | | 61 | 91 |

| Location of the monitoring site | Monitoring period | CO mg/m ³ | NO ₂ mg/m ³ | SO ₂ mg/m ³ | Dust concentration, mg/m ³ | Noise level, dB | Vibration level |
|---|----------------------|--------------------------|--------------------------------------|--------------------------------------|--|--------------------|-----------------|
| Regulatory maximum permissible concentration of pollutants | | 5 | 0.085 | 0.5 | 0.5 | 80 | 112 |
| | September 2022 | 0,5 | 0,07 | 0,27 | 0,49 | | |
| | October 2022 | | | | | 57 | 89 |
| | April 2023 | | | | | 61 | 92 |
| | June 2023 | 2.1±0,42 | 0,076±0,014 | 0,067±0,008 | 0,246±0,062 | | |
| | July 2023 | 1,4±0,28 | 0,062±0,011 | 0,010±0,001 | 0.327±0,082 | 59 | 96 |
| | October 2023 | 0,4±0,38 | 0,059±0,011 | 0,033±0,004 | 0,314±0,079 | 60 | 95 |
| | December 2023 | 0,1±0,07 | 0,017±0,001 | 0,02±0,004 | 0,106±0,079 | 35 | 63 |
| | June 2024 | The quarry is not active | | | | | |
| Quarry km 7+100 Latitude 42°40'60 Longitude 76°09'32'' | June 2021 (baseline) | | | | | 58 | 90 |
| | Aug 2021 | | | | | 50 | 91 |
| | Oct 2021 | | | | | 47 | 77 |
| | Dec 2021 | | | | | 70 | 90 |
| | Apr 2021 | | Quarry not active | | | | |
| | June 2021 | | Quarry not active | | | | |
| Quarry 9+000 Latitude 42°38'89 Longitude 76°09'86'' | June 2021 (baseline) | | | | | 46 | 90 |
| | Aug | | | | | 49 | 90 |
| | Oct 2021 | | | | | 47 | 77 |
| | Dec 2021 | | | | | 62 | 94 |
| | Jun 2022 | | | | | 53 | 66 |
| | August 2022 | | | | | 68 | 90 |
| | October 2022 | | | | | 51 | 84 |

| Location of the monitoring site | Monitoring period | CO mg/m³ | NO ₂ mg/m³ | SO ₂ mg/m³ | Dust concentration, mg/m³ | Noise level, dB | Vibration level |
|--|---------------------------|-------------------|--------------------------|--------------------------|------------------------------|--------------------|-----------------|
| Regulatory maximum permissible concentration of pollutants | | 5 | 0.085 | 0.5 | 0.5 | 80 | 112 |
| | April 2023 | | | | | 66 | 69 |
| | June 2023 | 1.1±0,42 | 0,053±0,014 | 0,036±0,008 | 0,16±0,062 | | |
| | July 2023 - December 2023 | Quarry not active | | | | | |
| Quarry km 26+800 Latitude 42°29'36 Longitude 76°09'94'' | June 2021 (baseline) | | | | | 51 | 85 |
| | Oct | | | | | 54 | 87 |
| | Dec 2021 | | 0,02 | 0,05 | 0,2 | 52 | 91 |
| Quarry km34+240 | April 2022 | | | | | 58 | 86 |
| | June 2022 | | | | | 64 | 87 |
| | August 2022 | | | | | 63 | 89 |
| | October 2022 | | | | | 61 | 88 |
| | April 2023 | | | | | 53 | 90 |
| | June 2023 | 2,0±0,3 | 0,06±0,014 | 0,04±0,008 | 0,15±0,06 | | |
| | July 2023 | 1,1±0,22 | 0.050±0,009 | 0.015±0,002 | 0,18±0,021 | 76 | 90 |
| | October 2023 | | | | | 75 | 89 |
| | December 2023 | | | | | 43 | 75 |
| | June 2024 | Quarry not active | | | | | |
| LOT 2 | | | | | | | |
| 73. Kok-Jar village km 65+985 Latitude 42°19'17 Longitude 75°65'33'' | December 2015 (baseline) | | <0,02 | <0,05 | <0,26 | 57 | 90 |
| | June 2021 (baseline) | 0,3±0,06 | 0,018±0,0045 | 0,003±0,0008 | 0,012±0,0024 | 51 | 88 |
| | Aug (baseline) | | | | | 49 | 83 |
| | Oct (baseline) | | 0,042 | <0,05 | <0,2 | 63 | 90 |

| Location of the monitoring site | Monitoring period | CO mg/m ³ | NO ₂ mg/m ³ | SO ₂ mg/m ³ | Dust concentration, mg/m ³ | Noise level, dB | Vibration level |
|---|---------------------------------|-------------------------|--------------------------------------|--------------------------------------|--|--------------------|-----------------|
| Regulatory maximum permissible concentration of pollutants | | 5 | 0.085 | 0.5 | 0.5 | 80 | 112 |
| | Dec (baseline) | | 0,167 | 005 | 0,347 | 53 | 94 |
| | Apr 2022 | | | | | | 64 |
| | Jun 2022 | | 0,069±0,013 | <0,05 | 0,2 | | 64 |
| | August 2022 | | | | | 66 | 90 |
| | September 2022 | 0,5 | 0,053 | 0,122 | 0,164 | 57 | 92 |
| | October 2022 | | | | | | |
| | April 2023 | | | | | 68 | 94 |
| | June 2023 | 2,1±0,42 | 0,074±0,013 | 0,092±0,011 | 0.159±0,040 | | |
| | July 2023 | 1,2±0,24 | 0,052±0,009 | 0,209±0,025 | 0.163±0,041 | 64 | 91 |
| | October 2023 | 0,4±0,4 | 0,061±0,011 | 0,023±0,003 | 0.157±0,039 | 66 | 89 |
| | December 2023 | 1,3±0,06 | 0,078±0,0045 | 0,04±0,0008 | 0,012±0,0024 | 43 | 82 |
| | June 2024. | 1,5±0,3 | 0.040±0,007 | 0.006±0,001 | 0.163±0,041 | 64 | 94 |
| 74. Chekildek village km 70+003 Latitude 42°19'44 Longitude 75°60'80'' | December 2015 (baseline) | | 0,023±0,004 | <0,05 | 0,028±0,07 | 68,1 | 91,1 |
| | June 2021 (baseline indicators) | 0,3±0,06 | 0,018±0,0045 | 0,003±0,0008 | 0,103±0,021 | 56 | 85 |
| | Aug (baseline) | | | | | 59 | 94 |
| | Oct (baseline) | | <0,02 | <0,05 | <0,2 | 62 | 91 |
| | Dec (baseline) | | 0,072 | <0,05 | 0.27 | 60 | 96 |
| | April 2022 | | | | | | 70 |
| | Jun 2022 | | 0,025 | 0,03 | 0,18 | | 68 |
| | August 2022 | | | | | 65 | 88 |
| | September 2022 | 0,4 | 0,067 | 0,133 | 0,41 | | |

| Location of the monitoring site | Monitoring period | CO mg/m ³ | NO ₂ mg/m ³ | SO ₂ mg/m ³ | Dust concentration, mg/m ³ | Noise level, dB | Vibration level |
|---|--------------------------|-------------------------|--------------------------------------|--------------------------------------|--|--------------------|-----------------|
| Regulatory maximum permissible concentration of pollutants | | 5 | 0.085 | 0.5 | 0.5 | 80 | 112 |
| | October 2022 | | | | | 69 | 92 |
| | April 2023 | | | | | 60 | 96 |
| | June 2023 | 0,1 | 0,074 | 0,058 | 0,159 | | |
| | July 2023 | 1,5±0,3 | 0.040±0,007 | 0.006±0,001 | 0.163±0,041 | 67 | 95 |
| | October 2023 | 0,4±0,42 | 0.050±0,009 | 0,011±0,001 | 0,236±0,059 | 69 | 83 |
| | December 2023 | 2,7±0,68 | 0,072 | 0,23 | 0,17 | 48 | 81 |
| | June 2024 | 0,85 | 0,03 | 0,06 | <0,2 | 61 | 90 |
| 76. Production base Quarry 81+200 Latitude 42°18'50 Longitude 75°47'84'' | December 2015 (baseline) | | | | | | |
| | June 2021 (baseline) | 0,5±0,1 | 0,016±0,004 | 0,004±0,001 | 0,109±0,022 | 83 | 98 |
| | Aug 2021 | 0,4 | | | | 72 | 84 |
| | Oct 2021 | 0,6 | 0,078 | 0,155 | 3,24±0,81 | 74 | 84 |
| | Dec 2021 | 0,85 | 0,02 | 0,05 | <0,2 | 65 | 93 |
| | April 2022 | | | | | | 80 |
| | Jun 2022 | | 0,03±0,004 | <0,05 | 0,4 | | 45 |
| | August 2022 | | | | | 69 | 90 |
| | September 2022 | 0,18 | 0,05 | 0,142 | 0,246 | | |
| | October 2022 | | | | | 70 | 88 |
| | April 2023 | | | | | 66 | 97 |
| | June 2023 | 2,11 | 0,076 | 0,067 | 0,238 | | |
| | July 2023 | 1,5±0,3 | 0.051±0,009 | 0.083±0,009 | 0.245±0,061 | 72 | 85 |
| | October 2023 | 0,3±0,44 | 0,055±0,010 | 0.015±0,003 | 0.236±0,059 | 70 | 83 |

| Location of the monitoring site | Monitoring period | CO mg/m ³ | NO ₂ mg/m ³ | SO ₂ mg/m ³ | Dust concentration, mg/m ³ | Noise level, dB | Vibration level |
|---|----------------------|-------------------------|--------------------------------------|--------------------------------------|--|--------------------|-----------------|
| Regulatory maximum permissible concentration of pollutants | | 5 | 0.085 | 0.5 | 0.5 | 80 | 112 |
| | December 2023 | 0,2±0,01 | 0,006±0,003 | 0,001±0,001 | 0,009±0,001 | 48 | 65 |
| | June 2024 | | | | | 67 | 93 |
| Epkin village km 86+000 east side of the road Latitude 42°10'24 Longitude 75°25'21'' | June 2021 (baseline) | | | | | 46 | 88 |
| | Aug 2021 | | | | | 53 | 88 |
| | Oct 2021 | 0,88 | 0,028 | <0,5 | 0,02 | 61 | 83 |
| | Dec 2021 | 0,92 | 0,056 | <0,05 | 0,308 | 65 | 89 |
| | April 2022 | | | | | | 62 |
| | June 2022 | | 0,04±0,01 | <0,05 | 0,25 | | 56 |
| | August 2022 | | | | | | |
| | September 2022 | 1,3 | 0,062 | 0,163 | 0,164 | | |
| | October 2022 | | | | | | |
| | April 2023 | | | | | 63 | 90 |
| | June 2023 | 2,1 | 0,077 | 0,076 | 0,189 | | |
| | July 2023 | 2.0±0.4 | 0.043±0.008 | 0.018±0.002 | 0.163±0.041 | 63 | 93 |
| | October 2023 | 0,3±0,44 | 0.063±0,011 | 0,005±0,001 | 0.157±0.039 | 49 | 78 |
| | December 2023 | 1,4±0,52 | 0,075±0,005 | 0,023±0,002 | 0,043±0,026 | 46 | 73 |
| | June 2024 | 0,2±0,31 | 0,042±0,010 | 0.015±0,003 | 0.236±0,059 | 56 | 92 |
| Quarry km. 71+500 north side of the road Latitude 42°18'83 Longitude 75°58'95'' | Aug 2021 | | | | | | 52 |
| | Oct 2021 | | | | | | 67 |
| | Dec 2021 | | 0,012 | 0,05 | 0,347 | | 69 |
| | April 2022 | | | | | | 66 |

| Location of the monitoring site | Monitoring period | CO mg/m ³ | NO ₂ mg/m ³ | SO ₂ mg/m ³ | Dust concentration, mg/m ³ | Noise level, dB | Vibration level |
|---|--------------------|-------------------------|--------------------------------------|--------------------------------------|--|--------------------|-----------------|
| Regulatory maximum permissible concentration of pollutants | | 5 | 0.085 | 0.5 | 0.5 | 80 | 112 |
| | June 2022 | | | | | | 70 |
| | August 2022 | | | | | | |
| | October 2022 | | | | | | |
| | April 2023 | | | | | 60 | 89 |
| | June 2023 | 0,1 | 0,06 | 0,04 | 0,19 | | |
| | July-December 2023 | Quarry not active | | | | | |
| Quarry 75 + 400 near the house st. Orkoshov M, 30 Latitude 42°19'27 Longitude 75°54'45'' | Aug 2021 | | | | | 52 | 98 |
| | Oct 2021 | | | | | 67 | 83 |
| | Dec 2021 | | 0,012 | 0,05 | 0,347 | 69 | 90 |
| | April 2022 | | | | | 67 | 83 |
| | June 2022 | | | | | 53 | 88 |
| | August 2022 | | | | | 64 | 90 |
| | October 2022 | | | | | 59 | 87 |
| | April 2023 | | | | | 56 | 80 |
| | June 2023 | 1,1 | 0,078 | 0,088 | 0,4 | | |
| | July 2023 | 1,5 | 0,06 | 0,09 | 0,31 | 61 | 90 |
| | October 2023 | 0,3 | 0,04 | 0,07 | 0,15 | 65 | 84 |
| | December 2023 | 0,6 | 0,07 | 0,14 | 0,03 | 46 | 79 |
| | June 2024 | Quarry is not active | | | | | |

* No environmental vibration level standards are provided.

Annex 4. Results of laboratory tests of surface water quality.

| Sampling location | Selection period | Transparency, cm | Petroleum products | BOD ₅ , mgO ₂ /dm ³ | Suspended substances, mg/l | Notes |
|---|--|--------------------|--------------------|--|----------------------------|-------------------------|
| maximum allowable concentration for water reservoirs of domestic category | | Not less than 20 | 0,05* / 0,3** | 3* / 2-4** | Increase 0,25/0,75 | |
| Lot 1 | | | | | | |
| 148. Chu river | December 2015 (background) | 41 | <0,05 | | | |
| | June 2021 (background) | 24 | 0,012 | 1,3 | 3,2 | |
| | October 2021 (construction work in progress) | 24 | 0,07 | 1,29 | 0,8 | |
| | December 2021. | 15 | 0,066 | 2,0 | 13 | |
| | June 2022 | 13 | 0,03 | 2,3 | 15 | |
| | September 2022 | 45 | 0,0155 | 0,64 | <3,0 | |
| | June 2023 | 43 | <0,005 | 0,87±0,226 | 3,20±0,96 | Background measurements |
| | July 2023 | 37 | <0,005 | 1,95±0,22 | 3,20±1,08 | |
| | October 2023 | 47 | <0,005 | 2,87±0,75 | 2,80±0,84 | |
| | June 2024 | 49 | <0,005 | 2,6±0,75 | 1,50±0,72 | |
| 149. Irrigation canal | June 2021 (background) | 26 | 0,02 | 2,5 | 3,0 | |
| | October 2021 (construction work in progress) | 25 | 0,15 | 1,23 | 0,6 | |
| | December 2021 | There was no water | | | | |

| | | | | | | |
|--|----------------------------|--------------------|--------------|------------|------------|------------------------------|
| | June 2022 | 14 | 0,02 | 2,3 | 11 | The work was carried out |
| | September 2022 | 43 | 0,0155 | 0,28 | <3,0 | |
| | June 2023 | 43 | 0,0351±0,012 | 2,66±0,692 | 4,00±1,20 | Natural background |
| | July 2023 | 39 | <0,005 | 1,87±0,486 | 3,20±0,96 | |
| | October 2023 | 49 | <0,005 | 1,87±0,49 | 2,80±0,84 | |
| | June 2024 | There was no water | | | | |
| 150. Chu River, Hydropost. Orto-Tokoi Reservoir km. 42+600 | December 2015 (background) | 37 | <0,05 | 0,3 | 3,0 | Background measurements 2015 |
| | June 2021 (background) | 23 | 0,017 | 1,1 | 3,4 | |
| | October 2021 | 22 | 0,04 | 0,3 | 0,8 | |
| | December 2021 | 20 | 0,048 | 3,2 | 18,0 | |
| | June 2022 | 24 | 0,01 | 2,8 | 16,0 | |
| | September 2022 | 45 | 0,0125 | 0,63 | <3,0 | |
| | June 2023 | 42 | 0,06 ±0,021 | 0,82±0,213 | 3,60±1,080 | Natural background |
| | July 2023 | 38 | <0,005 | 1,19±0,309 | 4,00±1,2 | |

| | | | | | | |
|-----------------------------------|--|--------------------|------------------|------------------------|------------------------|------------------------------------|
| | October 2023 | 48 | <0,005 | 2,93±0,76 | 2,40±0,72 | |
| | June 2024 | 50 | <0,005 | 2,6±0,75 | 1,50±0,72 | |
| Lot 2 | | | | | | |
| 151.Joon-Aryk River. km.65+410 | December 2015 (background) | 40 | <0,05 | | | Background measurements 2015 |
| | June 2021 (background) | >50 | 0,03 | 1,4 | 1,4 | |
| | October 2021 | 40 | 0,04 | 1,24 | 0,6 | |
| | December 2021 | 13,4 | 0,05 | 1,4 | 18,4 | |
| | June 2022 | 12 | 0,03 | 1,2 | 20 | |
| | September 2022. | 37 | 0,095 | 2,54 | <3,0 | |
| | June 2023 over the bridge under the bridge | There was no water | | | | |
| | July 2023 over the bridge under the bridge | 41 39 | <0,005 <0,005 | 2,19±0,65 2,19±0,65 | 3,70±0,54 3,70±0,54 | |
| | October 2023 over the bridge | 46 | <0,005 | 2,74±0,71 | 2,80±0,84 | |

| | | | | | | |
|--------------------------------------|---------------------------|------|--------|------------|------------|---|
| | under the bridge | 46 | <0,005 | 2,78±0,72 | 2,80 ±0,84 | |
| | June 2024 | | | | | |
| | over the bridge | 42 | <0,005 | 3,20±0,64 | 2,65±0,226 | |
| | under the bridge | 42 | <0,005 | 3,20±0,64 | 2,65±0,226 | |
| 152. Szadyn-Suusuu river. km. 86+261 | June 2021 (background) | 39 | 0,026 | 0,3 | 3,0 | |
| | October 2021. | >50 | 0,07 | 0,46 | 7,6 | |
| | December 2021. | 18 | 0,062 | 1,5 | 15,2 | |
| | December below the bridge | 17,1 | 0,045 | 1,4 | 27,2 | |
| | June 2022. | | | | | |
| | Before the bridge | 15 | 0,04 | 1,9 | 17 | |
| | After the bridge | 14,5 | 0,04 | 1,7 | 15 | |
| | September 2022. | 24 | 0,085 | 0,87 | <3,0 | |
| | June 2023 | | | | | |
| | over the bridge | 30 | <0,005 | 0,68±0,177 | 2,8 | The background concentration of suspended solids was increased by 2 mg/l, with the permissible 0.75 |
| | under the bridge | 29 | <0,005 | 1,16±0,302 | 4,80±1,44 | |
| | July 2023 | | | | | |
| | over the bridge | 37 | <0,005 | 2,54±0,66 | 4,00±1,22 | |
| | under the bridge | 41 | <0,005 | 2,98±0,25 | 3,89±0,51 | |

| | | | | | | |
|-------------------------------------|------------------------|------|--------|------------|------------|---|
| 153.Mukandyn-Suusu river. Km.68+044 | October 2023 | | | | | |
| | over the bridge | 47 | <0,005 | 1,89±0,49 | 3,20±0,96 | |
| | under the bridge | 47 | <0,005 | 1,94±0,50 | 3,20±0,96 | |
| | June 2024 | | | | | |
| | over the bridge | 49 | <0,005 | 2,89±0,31 | 2,98±0,74 | |
| | under the bridge | 49 | <0,005 | 2,89±0,31 | 2,95 ±0,74 | |
| 153.Mukandyn-Suusu river. Km.68+044 | June 2021 (background) | 10 | 0,026 | 1,1 | 20 | |
| | October 2021 | 38 | 0,06 | 2,2 | 12 | |
| | December 2021 | 1,0 | 0,064 | 1,4 | 70 | |
| | June 2022 | 12 | 0,03 | 1,8 | 25 | |
| | September 2022 | 45 | 0,0125 | 0,63 | <3,0 | |
| | June 2023 | | | | | |
| | over the bridge | 43 | <0,005 | 0,68±0,177 | 3,60±1,080 | Background concentration of suspended solids is increased by 1, 2 mg/l, with the permissible 0.75 |
| | under the bridge | 37,7 | <0,005 | 1,16±0,302 | 5,20±1,560 | |
| | July 2023 | | | | | |
| | over the bridge | 40 | <0,005 | 1,94±0,504 | 4,40±1,32 | |

| | | | | | | |
|------------------------------------|--------------------------|------|-------------|------------|------------|--|
| | under the bridge | 38 | <0,005 | 3,02±0,78 | 3,60±1,08 | |
| | October 2023 | | | | | |
| | over the bridge | 46 | 0,016±0,006 | 3,35±0,87 | 5,60±1,68 | |
| | under the bridge | 46 | 0,017±0,006 | 3,42±0,89 | 5,60±1,68 | |
| | June 2024 | | | | | |
| | over the bridge | 43 | <0,005 | 1,38±0,124 | 2,60±1,080 | |
| | under the bridge | 43 | <0,005 | 1,26±0,102 | 2,20±1,051 | |
| 154.Zhar-Korundu river. km. 88+795 | June 2021 (background) | 39 | 0,022 | 2,5 | | |
| | October 2021 | 35 | 0,04 | 3,8 | 0,4 | |
| | December 2021 above road | 14,2 | 0,05 | 4,6 | 26 | |
| | Below the road | 2,5 | 0,042 | 2,3 | 30 | |
| | June 2022. | | | | | |
| | before the bridge | 18 | 0,02 | 2,18 | 20 | |
| | after the bridge | 15 | 0,025 | 2,0 | 17 | |
| | September 2022 | 19 | 0,015 | 1,19 | <3,0 | |
| | June 2023 | | | | | |
| | over the bridge | 31 | <0,005 | 0,68±0,177 | 2,8 | The background concentration of suspended solids was increased by 3.2 mg/l, with an allowable 0.75 |
| | under the bridge | 33,5 | <0,005 | 1,16±0,302 | 6,00±1,80 | |

| | | | | | | |
|--|------------------|----|-------------|------------|-----------|--|
| | July 2023 | | | | | |
| | over the bridge | 42 | <0,005 | 1,53±0,398 | 3,6±1,08 | |
| | under the bridge | 39 | <0,005 | 2,4±0,104 | 2,80±0,75 | |
| | October 2023 | | | | | |
| | over the bridge | 48 | 0,019±0,007 | 2,83±0,74 | 2,80±0,84 | |
| | under the bridge | 48 | 0,021±0,007 | 2,90±0,75 | 2,80±0,84 | |
| | June 2024 | | | | | |
| | over the bridge | 45 | <0,005 | 2,03±0,15 | 2,71±0,09 | |
| | under the bridge | 45 | <0,005 | 2,03±0,15 | 2,83±0,04 | |