

Semi-annual environmental monitoring report

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July-December 2023

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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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
GoKRG	-	Government of Kyrgyzstan
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 (GoKRG) entered into supplemental loan and grant agreements with Asian Development Bank (ADB) for identification, design, implementation, and construction-supervision of CAREC Corridors 1 and 3 Connectivity Improvement Project Phase 2 (The Project). The Project is part of North-South Alternate Corridor which is a priority project in Sustainable Development Strategy of GoKRG.
2. 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.
3. 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.



Figure 1. Project Location.

4. Project is classified as environmental “Category B” based on ADB Safeguard Policy Statement 2009 (SPS 2009). Accordingly, an Initial Environmental Examination (IEE) report¹ that include an Environmental Management Plan (EMP) was prepared separately for the two road sections by Ministry of Transport and Communication (MOTC) through an international consulting team. Each IEE contains the recommended environmental management measures and monitoring programs. These aim to ensure that the identified negative environmental and social impacts associated with Project implementation will be avoided or at least minimized to acceptable levels. As recommended in the IEE-EMP, the civil works Contractor prepared a Site-Specific Environmental Management Plan (SSEMP) for each road lot. SSEMP specified how Contractor would

¹ https://www.adb.org/sites/default/files/linked-documents/41444-024-ieeab_1.pdf

ensure compliance with SPS 2009, the IEE-EMP, and applicable laws and regulations of GoKRG. 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 uploading into ADB website for public disclosure, in line with SPS 2009.

5. This is **eighth** "semi-annual" environmental monitoring report covering the period July to December 2023, 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».

6. Report contains information on conducted works from Contractor and Construction Supervision Consultant. Based on monitoring, inspections from July to December 2023 by CSC's National Environmental Specialist and information received from the Contractor.

1.2 Key Information.

7. All contract's major construction works have been completed. Since 1st December the Defects Notification Period (DNP) the period during which the Contractor is responsible to remedy any defective work which become apparent. Period on this project is 36 months period has started.

8. Planting. Trees are present on both sides of project road. According to IEE preliminary number of trees to be removed was determined as 68 (of which 30 on the site Lot 1 and 38 on Lot 2), but their exact number was determined after surveying and setting out the design coordinates onto project section.

9. In 2020, when pegging and setting out design coordinates onsite, identified 1,909 pieces for "forced" cutting, of which: 160 pcs. in Lot 1 and 1749 pcs. in Lot 2. To minimize impacts on green vegetation, a joint control point analysis was conducted by Consultant and Contractor. 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. Total number of cut trees - 1,704; 122 trees along Lot 1 and 1,582 trees along Lot 2 Contractor needs to plant new saplings at a ratio of 1:2 (two saplings for each tree cut down).

10. During reporting period, stocktaking of planted seedlings in autumn 2022 was made: on Lot 2 in amount of 450 pieces ((poplar - 200 pieces, willow - 50 pieces, vinegar tree - 70 pieces, almond -30 pieces, common pine - 100 pieces) and in spring 2023 in amount of 1150 pieces, of which:

for Lot 1 - 240 pieces of weeping willow saplings.

for Lot 2 - 910 pieces of saplings, including: birch - 250 pieces, weeping willow - 200 pieces, poplar - 450 pieces, Tien Shan spruce - 10 pcs.

In reporting period, an inventory of planted seedlings is:

- Lot 1, elm (weeping willow) seedlings took root at 9 per cent, there was a short-term decrease in temperature: 2 days (in May, after seedlings' planting, snow had fallen) and abnormal heat in July.

However, the main reason for weeping willow seedlings loss is untimely and insufficient watering, which was established in the process of visual monitoring.

– Lot 2 number of adopted seedlings by type is as follows:

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

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

The highest percentage of birch - 87%, almond - 80%, turpan tal - 80%.

Rooting process of pine seedlings was difficult (Photos 5-10). In spite of sumacs' low survival rate, it can be considered that this tree was most resilient: 53% of the seedlings took root, given their untimely and insufficient watering (Photos 11-14).

The cause of seedling death is untimely and insufficient watering, which was determined during visual monitoring of the planted seedlings. In accordance with Engineer's Instruction KGZ4267/02/01/TM/255 dated 14 August 2023, the Contractor shall rehabilitate dead saplings during spring tree planting period in 2024.



Photo 1. Lot 2. Cholpon village. Condition of pines in January 2023.



Photo 2. Lot 2, Cholpon village. Condition of pines in March 2023



Photo 3. Lot 2, Cholpon village. Condition of pines in May 2023



Photo 4. Cholpon village. Condition of pine seedlings in August 2023



Photo 5. Lot 2, Cholpon village. Condition of sumac seedlings in June 2023.



Photo 6. Cholpon village. Status of sumac seedlings in August 2023.

11. As explained 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
- acquisition of permits or approval from the 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
- entering into agreement with relevant agencies for solid waste collection, wastewater collection, and hazardous waste collection
- acquisition of temporary permit for use of the quarry sites from the State Agency for Geology of Subsoil Use №03-5/682
- construction and/or development of the campsites, field offices, asphalt plants, crushing plants, fabrication areas, machinery areas, quarries, scarified asphalt and spoils disposal sites, and auxiliary installations,
- entering into agreement with Laboratory of Chui-Bishkek Territorial Department of State Agency for Environmental Protection and Forestry under GoKRG 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.

12. No major social or environmental issues arose during reporting period. Most of non-compliances observed by CSC's Ecologists during project site visits were immediately rectified by Contractor with few non-compliances currently being rectified.

13. In reporting period, timely instrumental environmental monitoring of environmental quality components: water, air, noise and vibration level was ensured.

14. In reporting period, the construction of project road was completed. Contractor started demobilization works on Lot 1: Asphalt Concrete and Crusher plant were dismantled.

2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES.

2.1 Project Description.

2.1.1 Project Rationale and Project Area.

15. 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.

16. CAREC Corridors Interconnecting Road Projects 1 and 3 (Phase 2) 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.

17. 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.

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



18. 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.

19. 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 Rayon. Kochkor is center of Kochkor Rayon of Naryn Region.

20. Areas surrounding the roadway are vast agricultural lands used for crop and livestock production. Kochkor has rolling and mountainous terrain which is covered with highly palatable 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.



Figure3. Topographical map of Areas Traversed by Lot 2

2.1.2 Basic Project Information.

21. 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 Transportation and Communication (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. • Jungalsuukurulush Open Joint Stock Company In 2021 Shera Trans was replaced by Kyrgyzgidrospestroy LLC as a consortium partner with Zhagalmai
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.

22. 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 3 while the technical specifications are summarized in Table 4.

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			
• Overhead line -10kV	poles	8	22
• Overhead line - 0.4 kV	poles	-	7
• Communication line	poles	14	-
	pcs	193	337
• Lighting poles	l.m.	848	820
• PVC pipes			
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 <ul style="list-style-type: none"> • Top pavement (SMA) layer • Coarse-grained asphalt at junctions • Leveling layer • Base course • Sub-base course • Asphalt concrete mixture on sidewalks 	6 cm thickness; vol. 42,505 m ³ 5 cm thickness vol. 682 m ³ 9 cm thickness; vol. 63,633 m ³ 20cm thickness; vol. 152,829 m ³ 25cm thickness; vol. 345,850 m ³ 4cm thickness; vol. 434 m ³	

2.1.4 Summary of Identified Negative Impacts of Project Implementation.

23. Based on IEE 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.

24. 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

25. Identified 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.

26. 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.

27. The Borrower and Project 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 of works 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).

28. 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 (DDPSES).

29. 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;
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 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.

30. ADB has designated a Country Environmental Focal Person and a team of resident social and environmental specialists to monitor Project compliance with ADB’s social and environmental safeguards. ADB team conducts site visit missions from regularly during Project implementation to check social and environmental conditions. They also provide trainings to staffs of EA, IA, and CSC on environmental, health and safety aspects.

31. MOTC has designated an officer to take charge of matters relating to social and environment aspects of Project.

32. CSC has in its team an International Social Development and Resettlement Specialist (SDRS), National Environmental Protective 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 the 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.

33. Table 5 lists names and contact information responsible of project’s social and environmental management.

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

No	Organization	Designation	Name	Contact information
1	ADB	Country Environment Focal	Ninette R. Pajarillaga	npajarillaga@adb.org
2	ADB Resident Mission in Kyrgyz Republic	National Environmental Consultant	Sultan Bakirov	Sbakirov.consultant@adb.org
3	PUI under MOTC	Implementing Agency Representative	Abdygulov Asylbek	asylbeka@piumotc.kg
4	Roughton International Ltd., and sub-consultant RAM Engineering Associates LLC.	Local Environmental Protection Specialist	Akmatova Nasiba	nasibamn@hotmail.com
5	Sinohydro-Powerchina Roadbridge JV.	Contractor’s Local Environmental Specialist	Beisheev Isake	isake.beysheev@bk.ru

2.2.3 Construction-Supervision Consultant’s Team.

34. 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. CSC’s organizational structure is shown in Figure 4. List of staff as of 30th December 2023 is shown in Table 6.

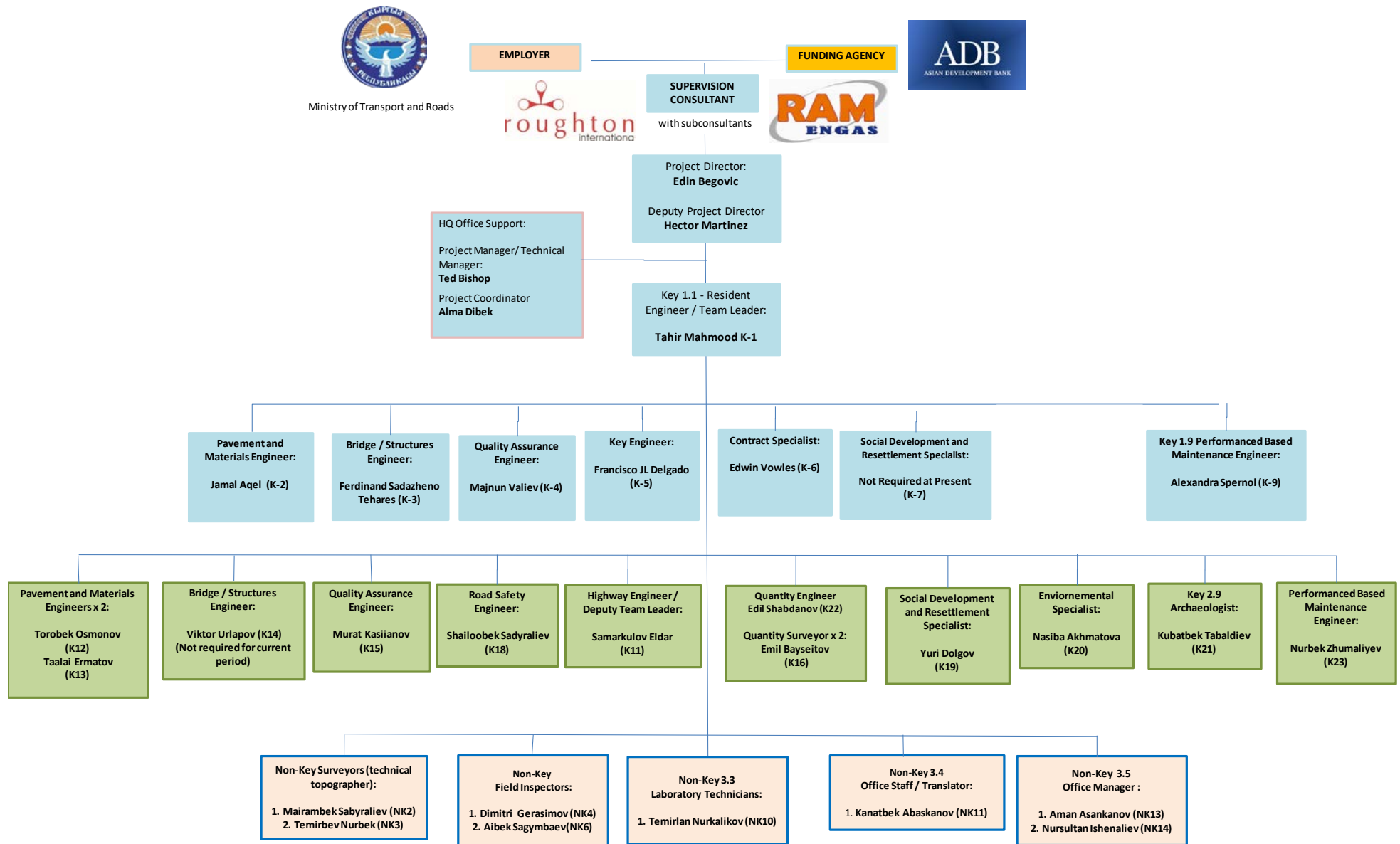


Figure 4. Organizational Structure of the Construction Supervision Consultant.

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 Spernol
Road Safety Engineer	Francisco Javier Lopez Delgado
Local staff	
DTL	Eldar Samarkulov
Pavement and Materials Engineer – 1	Torobek Osmonov*
Pavement and Materials Engineer – 2	Taalai Ermatov
Quality Engineer	Murat Kasianov
Road Safety Engineer	Shailoobek Sadyraliev
Quantity Engineer	Edil Shabdanov
Quantity Surveyor	Emil Bayseitov
Translator	Kanat Abaskanov
Office manager – 1	Aman Asankanov
Office manager – 2	Nursultan Ishenaliev
PBM Engineer	Nurbek Zhumaliyev
Archaeologist	Kubatbek Tabaldiev
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.

35. During reporting period following works were completed on Lot 1: planning, backfilling and rolling of subgrade, asphalt paving. Parapets and culverts installation works, construction of exits was continued (Photos 7-32):

- **Clearing and grubbing.** Works cover 37 ha under initial project. The volume of completed works for reporting period was - 13.01 %, since beginning of project implementation - 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.** At beginning of reporting period, asphalt removal from 43 km site of the project road was 100% complete.
- **Backfill and earthen embankment:** Amount of completed works for the reporting period was 54,008 m³, from the beginning of the Project implementation to December 2023, the implementation of works was - 124%.

- **Subgrade.** Excavation works of total road length 42.92 km include paving and compaction of 399,940 m³ excavation material. During reporting period, 4.75 per cent was completed. Overall work implementation from project's start to December 2023 is 100%.
- **Subbase:** Sub-base works are being undertaken on total road length of 42.92 km and include paving and compaction of 260,095 m³ sub-base material, 39,245 m³ on shoulders and 220,850 m³ on the main road. Completion for this reporting period was 7.17 per cent. Overall works implementation from project's start to December 2023 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. Completion rate for this reporting period was 9.3 % and overall completion rate from project's start to December was 100 %.
- **Binder:** Project involves paving and compaction of binder course on 42.92 km with a total volume of 38,390 m³. Completion for this reporting period was 11.77% and total completion rate from project's start to December 2023 was 100%.
- **SMA Asphalt Pavement:** Project involves paving and compaction of asphalt on 42.9 km of road with total volume of 25,339 m³. Completion for this reporting period was 73%, and total completion from project's start to December 2023 was 100%.
- **Culverts:** Project involves construction of 63 culverts. At beginning of the reporting period culverts' construction was 100% completed.
- **Bridge.** Project includes construction of one bridge at km 12+063, which was 100 per cent complete at the beginning of reporting period.



Photo 7. Lot 1: Sub-base backfilling of at the south coast exit 0+020-0+180 RHS. July



Photo 8. Lot 1. Exit's construction at km.2+680 LHS. July.



Photo 9. Lot 1. Assembling installed parapets from km 14+000-15+000. February



Photo 10. Lot 1. Earth works on km. 42+000-43+000. July



Photo 11. Lot 1. SMA-20 paving at 31+000-31+120 LHS (car park). July



Photo 10. SMA paving at chainage 27-824--25+005 RHS. July



Photo 11. Lot 1. Stop shelter's construction at 9+070 km RHS. August



Photo 12. SMA paving at km 15+100 LHS. August.



Photo 13: Culvert concrete reinforcement of inlet and outlet at 13+763 km. August



Photo 14. Parapets' reinforcements welding at km 13+240-13+480 RHS. September.



Photo 15. SMA pavement on km 39+424-40+545 LHS. September.



Photo 16. SMA pavement, Tash-Saray village. September.



Photo 17: Parapets installation at km.42+000-43+000 September



Photo 18. Slope cut at km.38+700. September.



Photo 19. Earthworks on the arrangement of a bus stop in Tash-Saray village. September.



Photo 20. Sidewalk arrangement. September.



Photo 21. Chekildek village. Road marking. September



Photo 22. Sidewalk arrangement. September.



Photo 23. Tash-Saray village. Road marking. October



Photo 24. Parapets installation at km 11+200. October.



Photo 25. SMA paving on km 9+700-10+600 LHS. October.



Photo 26. Slopes levelling at km 29+900-30+300 RHS. October



Photo 27. Culvert's inlet&outlet concrete reinforcement at km 18+326BS. October.



Photo 28. SMA pavement at km 0+600+0+840 RHS. November



Photo 29. Parapets installation at km 40+700-40+870 RHS. November



Photo 30. Asphalt paving preparation for on km 2+680 LHS exit. November



Photo 31: Road marking on km. 18+000-20+000. November



Photo 32. Parapets installation on km. 32+000-34+000. December

36. Following works were carried out on Lot 2 (photos 33-44):

- **Clearing and grubbing.** Original project covers 35 ha of works. In reporting period, the scope of works totaled 0.78 ha. Clearing and grubbing works are 100% complete as of December 2023.
- **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 for current reporting period totals 25,587 m³. Overall work implementation from start to December 2023 was 124 %.

- **Removal of Existing Asphalt.** At the beginning of current reporting period, old asphalt had been removed from entire 27.1 km project site.
- **Fill and embankment:** Project involves work amount of 93,725 m³. Completed work amount for reporting period was 44,676 m³. Project works have been completed. Total works volume completed from start until December 2023 was 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. Completion rate for this reporting period was 2.51%. In this reporting period, 100% of subgrade paving works have been completed.
- **Subbase:** Sub-base works are carried out on a total road length of 27 km and include paving and compaction of 152,626 m³ sub-base material; 26,220 m³ for shoulders and 126,516 m³ for main road. Completion for this reporting period was 3%. Overall work implementation is completed and has been 100 % from start to December 2023.
- **Base.** Base course requirement according to original project is 62,300 m³. Fulfilment for this reporting period is 5.35 %. Base course paving works are 100% complete.
- **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. Fulfilment of works for this reporting period was 5.83 %. Binder course paving works are 100% complete.
- **Reinforced Concrete Pipes.** Project involves the construction of 45 culverts. Construction of 45 culverts was completed in previous reporting period.
- **Bridge:** Project involves construction of bridges at km 65+410, km 68+044, km 86+261 and km 88+795. By beginning of the current reporting period, bridges' construction at km. 86+261 and km 88+795 were 100% complete. In reporting period, bridges' construction at km 65+410 and km. 68+044 were completed.



Photo 33. Bridge installation at km 65+410. July



Photo 34. Installation of chutes at km 87-459-87+650 RHS. July



Photo 35. Sub-base pavement (roundabout). July.



Photo 36. Sidewalk parapets installation at km 86+500-87+000 RHS. August.



Photo 37. SMA pavement on km 67+945-68+915 RHS. August.



Photo 38. Sub-base pavement at km 85+900-86+500 RHS. August.



Photo 39. SMA pavement at km 85+500-87+000 RHS. September



Photo 40. Sidewalk arrangement. September



Photo 41. Chekildek village. Road marking. September.



Photo 42. Road markings arrangement roundabout.
November



Photo 43. Parapets installation at bus stop on km 89+161.
November.



Photo 44. culvert inlet slopes reinforcement at km 71+800
LHS. November.

2.3.2 Other Works.

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

- Provision of houses for Contractor's personnel, offices, production sites, equipment maintenance workshops, fuel depots, crushing plants, material warehouses, asphalt plants, concrete mix plants, etc. This includes provision of necessary equipment, stationery, first aid supplies, and daily accommodation for staff and workers (Photos 37-58).
- The contractor obtained permits from local authorities and state environmental protection agencies to locate the camp and production base:
- For Lot 1 from the aiyl okmotu of Kok-Moinok aiyl aimag for the allocation of plot No. 368 dated 09/04/2020.
- Permission from the Issyk-Kul Territorial Department of Environmental Protection No. 45-1/2020 dated 09/04/2020
- For Lot 2 from the aiyl okmotu of Cholpon aiyl aimag for the allocation of plot No. 310 dated May 27, 2020.
- Resolution of the session of deputies of the VI convocation of the Cholpon ayilny Kenesh No. 35/4 dated 06/12/2020 on the allocation of a site for temporary use for a camp and a production base.
- Permission from the Naryn Territorial Department for Environmental Protection No. 45 dated 08/17/2020 Letter No. 02-4/553 dated 08/17/2020. Refer to Figure 5 for the location maps of the contractor's camps and auxiliary installations for Lot 1, and to Figure 6 for Lot 2.
- Maintenance of project information sign boards, safety sign boards, and other safety warning

devices for traffic, worker safety, and public safety (Photos 51-52)

- Continued compliance with measures related to the COVID-19 pandemic.
- Compliance with the ADB safeguard policies; the relevant laws and regulations of the Kyrgyz Republic on health, safety, and environmental protection; the IEE-EMP; and the Contractor's SSEMP (see Section 3 and Section 4).
- Monitoring of air quality (noise, vibration, air pollutants), water quality and soil quality (See Section 4.3)
- Operation and maintenance of soil and aggregate quarries (See Section 4.4)
- Operation and maintenance of spoils disposal sites (See Section 4.5)
- Keep record of complaints and grievance

Contractor's Campsite and Facility Area for Lot 1.

38. Contractor's camp is located alongside of Balykchy project section km0 – km43 at km16+100 RHS in 50 m distance, acreage 4,5 ha (photo 37). All necessary documents / approval from local authorities, and coordination with government environment agencies have been obtained (Letter ayil okmotu Kok-Moinoksky aimak on allocation of sites № 368 of 09/04/2020, permission of Issyk-Kul territorial administration of Environment Protection № 45-1/2020 of 09/04/2020).

39. Camp area includes: office and living accommodations, medical unit with doctor and first aid facilities, a prayer room (namazkana), a canteen with a kitchen block, separate toilets and showers for men and women, and an open space for recreation and gatherings in center of camp. Living accommodations for national staff and workers who do not live in neighborhood have a capacity of 60 people.

40. 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 (Photos 45-54)

Figure 5. Location of Lot 1 Contractor's Campsite and Facility Areas.





Photo 45. Lot 1. Camp's general view on Lot 1 km 16 + 100 (RS).



Photo 46. Lot 1. Accommodation camp and Subcontractor's office



Photo 47. Lot 1. Subcontractor's accommodation camp



Photo 48. Lot 1. Medical centre



Photo 49. Bathroom



Photo 50. Contractor's office



Photo 51. Kitchen



Photo 52. Lot 1 canteen in the camp.



Photo 53 and 54: Information boards for first aid, emergency response (earthquakes, floods, landslides, road safety, etc.).

Contractor's Campsite and Facility Area for Lot 2.

41. Contractor's camp Lot 2 is located km 81 stretch of Project Section 2A "Kochkor-Epkin", 250 meters away from project site, 4.5 ha in area (Figure 7). All necessary documents/approvals from local authorities and approvals from government environmental protection agencies have been received (Letter to Aiyl Okmotu of Cholpon Aiyl Aimak on allocation of land plot No. 310 dated 27.05.2020 Decision of Cholpon Aiyl Kenesh Session VI Parliament No. 35/4 dated 12.06.2020 on allocation of land 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).

42. Camp is fenced and landscaped with planting of trees. Within camp are located: office, medical unit with a doctor and first aid facilities, living facilities for Contractor's personnel, parking area for construction equipment, canteen with kitchen unit. Living accommodations for international and national staff and workers not living locally have a capacity of 45 people. Each living room has a bathroom and a shower room. During reporting period sanitary condition of camp site, accommodation and workplaces were in good condition (photos 55-60).

43. Emergency and firefighting measures are available. Fire extinguishers and fire boards are strategically placed outside and inside the buildings. Various informational materials about COVID-19, safety management organization, fire safety measures, organizational structure for emergency response, etc. are placed around the buildings.



Lot 2 crusher section in front and Contractor's camp in background.

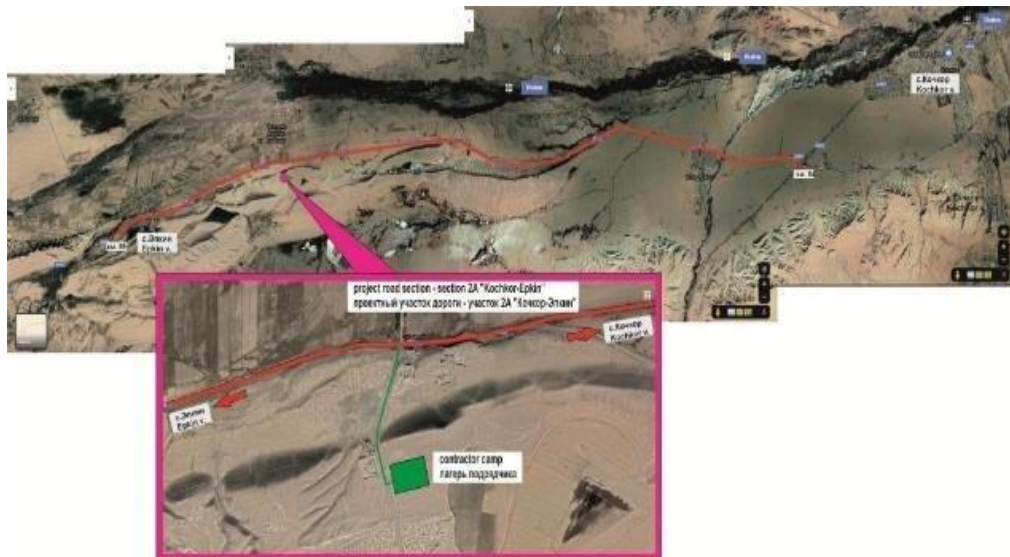


Figure 6. Map of Contractor's Camp and Production Site Lot 2.



Photo 55. Contractor's accommodation camp



Photo 56. Bathrooms in living rooms



Photos 57 and 58. Women's and men's toilets.



Photos 59 and 60. Dining room with kitchen block

Personnel information.

44. During reporting period, total number of Main Contractor and Subcontractor personnel averaged 332, mostly locals. Main Contractor signed contracts with following subcontractors approved by Engineer:

- Arek Construction 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
- Zhungal Suu Kurulush OOO (Contractor's letter dated 5 July 2021) completed their cooperation with main Contractor on July 2022

45. During reporting period, one subcontractor, Arek Stroy LLC, worked

46. No restrictions were placed on COVID-19 during reporting period. Table 7 provides a summary of Contractor's personnel information.

Table 7. Contractor's Personnel.

Personnel	Contractor SINOHYDRO		Subcontractor (Arek Stroy)
	Local (Lot 2)	Foreign	Lot 1
Administrative/ Engineer/ Technician	68	20	23
Operators and drivers	60		18
Skilled workers	75		19
Unskilled labor	20		23
Others	6		
<i>Subtotal</i>			83
TOTAL	249		83

2.4 Description of Changes in Project Design.

47. No design changes in this reporting period.

2.5 Description of changes in agreed methods of construction.

48. No changes have been made to construction methods.

3. ENVIRONMENTAL SAFEGUARD MEASURES.

3.1 General Description of Environmental Safeguard Activities.

49. 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 safeguard activities of the Contractor include: (i) securing all needed environmental permits for the temporary use of some land, and for the installation and operation of the Contractor's facilities; (ii) consultations and dialogues with local communities to explain about the project activities and to resolve public grievances. The Contractor's environmentalist routinely conducts dialogues with local communities during site inspections to clarify project activities and resolve public complaints. Officially, during the reporting period, public hearings were held in May, organized by the Consultant with the participation of the Contractor; (iii) carrying out monitoring by the contractor's and consultant's environmental specialist, of the construction sites and facilities to ensure that the 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 the 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.

50. CSC NEPS monitors Contractor's compliance with IEE-EMP and SSEMP during construction stage through ocular site visits and audits of the 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.

51. Within reporting period, 1150 seedlings were planted, of which: on Lot 1 - 240 pieces of weeping willow; on Lot 2 - 910 pieces, of which birch - 250 pieces, weeping willow - 200 pieces, poplar - 450 pieces, Tien Shan spruce - 10 pieces.

Site inspections by NEPS were conducted jointly with Contractor's ES. When environmental problems are observed, Consultant notifies Contractor verbally or in writing to correct the violations within a specified period. Meetings and/or orientations for staff who commits violations and those responsible for EMP and SSEMP are conducted to explain the violations and suggestions for improvement.

3.2. Site Audits.

52. Between July and December 2023, NEPS visited project sites 28 times. CSC NEPS and Contractor jointly conducted visual and environmental quality monitoring. The scope of work and results of on-site inspections are summarized in Table 8. Selected photos of activities and results are shown in photos (61-109).

Table 8. Dates of project site inspections.

	Date	Auditor's names	Purpose of audit	Brief information on any important audit remarks.
July				
1	03.07.2023	Akhmatova N. Beisheev I.	Contractor's fulfilment of SSEMP monitoring for Lot 2. Visual monitoring of all construction sites, unsuitable soil dumps, quarries and monitoring of the Contractor's environmental documentation.	Visual monitoring of construction sites, production bases, unusable soil dumps and quarries. It was recommended to complete construction of a watertight septic tank to collect water after washing of concrete mixing plant and concrete mixer at production base. Ensure reclamation of lands allocated for the construction of bypass roads at km.86+261 and km.88+795.
2	04.07.2023	Akhmatova N. Beisheev I.	Monitoring of planted seedlings on Lot 2.	Timely watering of seedlings should be done to prevent drying out.
3	05.07.2023	Akhmatova N. Beisheev I.	Site inspection on Lot 1.	Visual monitoring of construction sites, production bases, unsuitable soil dumps and quarries. No comments were made.
4	06.07.2023	Akhmatova N. Beisheev I.	Monitoring of planted seedlings on Lot 1.	Timely watering of seedlings should be done to prevent drying out.
5	17.07.2023	Akhmatova N. Beisheev I.	Monitoring of planted seedlings on Lot 1.	It is recommended to increase frequency of watering during hot weather.
6	19.07.2023	Akhmatova N. Beisheev I.	Site inspection on Lot 1.	Visual monitoring of construction sites, production bases, unsuitable soil dumps and quarries. No comments were made
7	20.07.2023	Akhmatova N. Beisheev I.	Monitoring of planted seedlings on Lot 2.	It is necessary to increase the frequency of watering during hot weather.
8	21.07.2023	Akhmatova N. Beisheev I.	Site inspection on Lot 2.	Visual monitoring of construction sites, production bases, unusable soil dumps and quarries. There was contamination of territory in the area of waste oil storage.
August				
9	01.08.2023	Akhmatova N. Beisheev I.	Monitoring of SSEMP execution on Lots 1 and 2	Visual monitoring of all construction sites, unsuitable soil dumps, quarries. No comments were made

10	02.08.2023	Akhmatova N. Beisheev I.	Monitoring of planted seedlings on Lot 2.	Timely watering of seedlings was recommended.
11	03.08.2023	Akhmatova N. Beisheev I.	Monitoring of planted seedlings on Lot 2.	Timely watering of seedlings was recommended.
12	04.08.2023	Akhmatova N. Beisheev I.	Monitoring of planted seedlings on Lot 1.	Timely watering of seedlings is recommended.
13	11.08.2023	Akhmatova N. Beisheev I.	Monitoring of planted saplings on Lot 1.	Increased frequency of watering in hot weather is required
14	15.08.2023	Akhmatova N. Beisheev I.	Counting of grafted trees on Lot 2.	Average percentage of rooting was 73%.
15	16.08.2023	Akhmatova N. Beisheev I.	Site inspection on Lot 1.	No comments.
16	17.08.2023	Akhmatova N. Beisheev I.	Counting of established trees on Lot 1.	21 of 240 planted seedlings took root, i.e. 9%.
17	22.08.2023	Akhmatova N. Beisheev I.	Site inspection on Lot 2.	Visual monitoring of all construction sites, waste dumps, quarries.
September				
18	04.09.2023	Akhmatova N. Beisheev I.	Monitoring of planted seedlings on Lot 2.	Planted seedlings condition inspection.
19	18.09.2023	Akhmatova N. Beisheev I.	Monitoring of the Contractor's performance of the SSEMP on Lot 2	Visual monitoring of all construction sites, unsuitable soil dumps, quarries.
20	20.09.2023	Akhmatova N. Beisheev I.	Monitoring of the Contractor's implementation of the SSEMP for Lot 1.	Visual monitoring of all construction sites, unsuitable soil dumps, quarries.
21	21.09.2023	Akhmatova N. Beisheev I.	Monitoring of planted seedlings on Lot 2.	Inspection of the condition of planted seedlings.

October				
22	03.10.2023	Akhmatova N. Beisheev I.	Monitoring of Contractor's performance on SSEMP for Lot 2 with the Contractor's environmentalist	planted seedlings condition inspection.
23	04.10.2023	Akhmatova N. Beisheev I.	Monitoring of Contractor's performance on SSEMP for Lot 2 with the Contractor's environmentalist	Visual monitoring of all construction sites, dump sites, quarries
November				
24	13.11.2023	Akhmatova N. Beisheev I.	Monitoring of Contractor's performance on SSEMP for Lot 1 with the Contractor's environmentalist	Visual monitoring of all construction sites, dump sites, quarries
25	27.11.2023	Akhmatova N. Beisheev I.	Sites' inspection	Monitoring of Contractor's SSEMP non-compliances' elimination
December				
26	18.12.2023	Akhmatova N. Beisheev I.	Monitoring of Contractor's performance on SSEMP for Lot 1 with the Contractor's environmentalist	Visual inspection of all construction sites, as well as inspection of sites for removal of old asphalt. There were no violations or non-compliances with the ESMP.
27	19.12.2023	Akhmatova N. Beisheev I.	Monitoring of Contractor's performance on SSEMP for Lot 1 with the Contractor's environmentalist	Visual monitoring of all construction sites, dump sites, quarries
28	20.12.2023	Akhmatova N. Beisheev I.	Monitoring of Contractor's performance on SSEMP for Lot 2 with the Contractor's environmentalist	Visual monitoring of all construction sites, dump sites, quarries

Photos Lot 1 monitoring during the reporting period



Photo 61. Sanitary condition of the construction equipment parking area is satisfactory. July



Photo 62. AC plant's production base. Sanitary condition of the territory is satisfactory. July.



Photo 61. Sanitary condition of the construction equipment parking area is satisfactory. November.



Photo 61. Sanitary condition of the construction equipment parking area is satisfactory. December.



Photo 65. AC plant's production base. Sanitary condition of the territory is satisfactory. December



Photo 66. Quarry's technical levelling at km 34+240 and stabilizing quarry's slopes a safe condition. December



Photo 67. Old asphalt dump at km.7+000. November



Photo 68. Old asphalt dump at km.7+000. December. After technical planning



Photo 69. December. Sanitary condition of production base territory is satisfactory. No oil product pollution was observed.
December



Photo 70. Production base. repair and mechanical block's dismantling



Photo 71. Unsuitable soil dump levelling at km 36+400.
September



Photo 72. Levelling of the old asphalt spoil dump km. 38+600.
September



Photo 73. Levelling of the old asphalt spoil dump km. 40+200. September



Photo 74. Watering of the road km 66+200. September



Photo 75. Watering of the road km. 12+700. October



Photo 76. Condition of seedlings. July



a) 13th June

b) 6th July



20th July

Photo 77. Seedling condition: as a result of proper watering the seedlings started to grow (6th July), after untimely/continued watering the seedling lost its foliage and stopped growing.



Photo 78. Condition of planted seedlings. July.



Photo 79. Bypass road km.18+300 RHS



Photo 80. Bypass road km.21+430 RHS



Photo 81. Bypass road km.24+430 RHS



Photo 82. Bypass road km.37+700 RHS

Monitoring photos for Lot 2



Photo 83. Crusher plant's production base. Sanitary condition of the territory is satisfactory



Photo 84. Production base. Sanitary condition of the repair site is satisfactory



Photo 85. Production base, site adjacent to oil storage warehouse contaminated with oil products



Photo 86. Lot 2. Production base, site adjacent to the oil storage warehouse after cleaning



Photo 87. September. Sanitary condition of the construction equipment parking area is satisfactory.



Photo 88 Unsuitable soil dump at km. 80+800 on left after reclamation



Photo 89. Levelling of the quarry km.89+093. October



Photo 90. Quarry km. 75+400. Bringing the sides to a stable position



Photo 91. Quarry levelling at km. 75+400



Photo 92. Old asphalt dump at km. 70+180 LHS before reclamation. September



Photo 93. Old asphalt dump at km. 70+180 LHS after reclamation. October



Photo 94. Spoil dump at km. 62+520 LHS before reclamation



Photo 95. Spoil dump at km. 62+520 LHS after reclamation



Photo 96. Spoil dump at km. 62+520 LHS after reclamation



Photo 97. Temporary bridge of the bypass road dismantling at km 62+500



Photo 98. Dismantled parts removal of the temporary bridge of bypass road at km 62+500



Photo 99. Spoil dump at km. 65+520 RHS before reclamation



Photo 100. Spoil dump at km. 65+520 RHS after reclamation



Photo 101. Planted seedlings in the village Kok-Zhar, sports centre. September



Photo 102. Cholpon village. Condition of pines. September



Photo 103. Cholpon village. Condition of sumai seedlings in June 2023.



Photo 104. Cholpon village. Status of sumai seedlings in August 2023: started to grow as a result of proper watering.



Photo 105. Cholpon village. Condition of sumai seedlings.



Photo 106. Cholpon village. The planted seedlings have started to grow as a result of proper watering



Photo 107. Overgrown grass in the area of planted seedlings near stadium in Kok-Jar village



Photo 108. Area of planted seedlings in Kok-Jar village after grass cutting.



Photo 109 Watering at km 65+550. July



Photo 110. Watering of road at km. 66+200. September



Photo 111. Bypass road of bridge at km 86+261. r. Sazdyn-Suusuu, Construction of bridge is completed, bridge access is open. The bypass road is subject to reclamation.



Photo 112. Bypass road of the bridge at km 86+261. r. Sazdyn-Suusuu, after reclamation



Photo 113. Bridge bypass road at km 86+261. r. Sazdyn-Suusuu River, requires reclamation and drainage of the adjacent site flooded due to bypass road construction



Photo 114. Site of the bypass road, after reclamation and drainage of the adjacent flooded site.

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

53. If non-compliance is identified during site visit, the CSC shall initially give a verbal instruction to the Contractor, clearly stating suggestions for immediate correction. For issues that are not immediately corrected, the CSC shall send a follow-up letter to formalize the instruction with a deadline date for correction. If Contractor is unable to correct the noncompliance by deadline, the issue is carried forward to next notice of noncompliance. A new deadline date is assigned by the 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 the status of Notices of Non-Compliance issued by CSC and include status in the monthly reports submitted to the CSC.

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

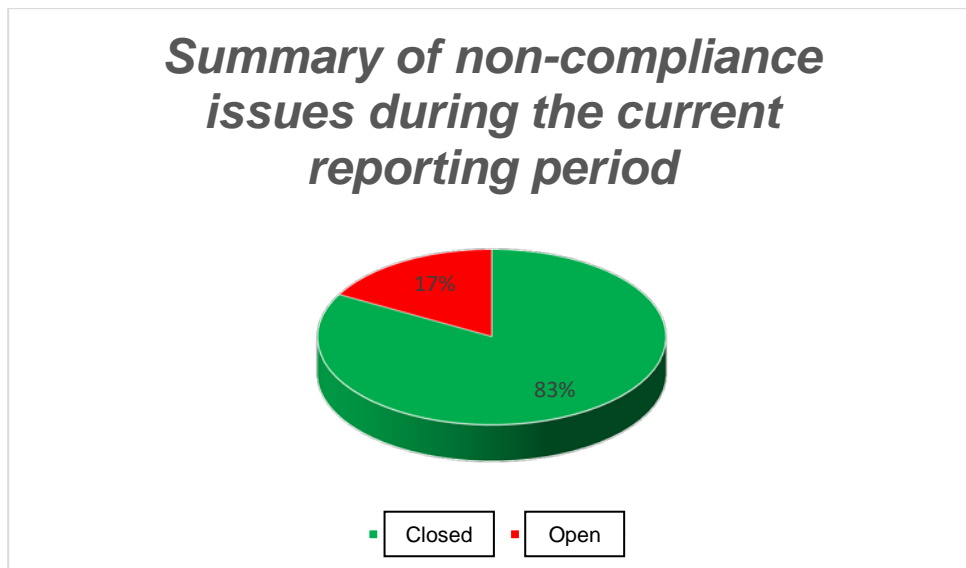
54. Table 9 lists the status of non-compliances/violations/recommendations identified during site visits from July to December 2023. During reporting period, the implementation of mitigating environmental measures can be assessed as satisfactory: non-compliances occurred in terms of contamination of production base's territory with oil wastes, as well as untimely dust suppression on unpaved sites of the road during passage of vehicles, which were eliminated in the field. There were recommendations on the need to reclaim land allocated for bypass roads and to increase the frequency of watering in hot weather. The information is reflected in Table 9.

Table 9. Contractor's activities to correct SSEMP non-compliances.

No п/п	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	No reclamation of lands allocated for bypass roads on Lot 1 has been provided.	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 (Photos 79-82).	Deadline February 2024.	In the process.
Lot - 2				
2	Production base. Pollution of territory near the fuel and lubricants storage warehouse (Photo 85)	Ensure cleaning of the territory from oil product pollution	Immediately	Done (photo 86)
3	Sites of planted seedlings on territory of sport complex and in stadium area in Kok-Zhar village are overgrown with grass (photo 107).	Ensure grass cutting	Deadline 15 th August 2023.	Done (photo 108)
4	Wastewater after washing the concrete mixing plant is discharged into a permeable pit.	Ensure construction of a waterproof tank to collect wastewater from concrete mixing plant.	Until 15 th March 2023 Until 22 th June 2023 Extended until 10 th July 2023.	Done
5	Construction of bridges at km. 86+261 and 88+795 have been completed. Usage of the bypass road has been stopped (Photo 111, 113).	Ensure reclamation of land allocated for the bypass road	Until 1 st July 2023.	Done (photo 112, 114)

Summary of non-compliances based on current period notifications.

Total number of non-conformities	5
Number of closed non-conformities	4
Inconsistencies, in the process of elimination	1
Percentage of closed items	83 %
Non-conformities discovered during reporting period	5
Non-conformities closed during the reporting period	4
Percentage of closed items	100 %



Summary of non-compliances for the previous reporting period.

Number of open non-conformities	-
Number of closed non-conformities	7
Inconsistencies, in the process of elimination	1
Percentage of non-conformities closed	100 %

3.4 Trends.

55. During previous reporting period 7 non-compliances were noted. 6 of them were corrected during previous period, and 1 non-conformance is in process as it should have been corrected in this reporting period. Non-compliance is related to the wastewater disposal from the concrete mixing plant (Lot 2) to the terrain (pit). Contractor started work on septic tank installation and completed in current reporting period. According to the Contractor's information, this is caused by lack of time.

56. In reporting period, the number of identified nonconformities is 5, 4 of them have been eliminated, one is in process.

57. Based on data of the current and previous monitoring periods, there is a tendency for Contractor to be more responsible in environmental protection issues, there is a decrease in the number of previously identified non-compliances by Contractor. In general, the number of identified non-compliances in reporting period decreased two times compared to the previous period. The only non-compliance that is in the process of elimination is the started works on reclamation of sites allocated for bypass roads were not completed in reporting period due to lack of time and onset of the winter period and were postponed to the next year with deadline for completion until 20 March 2024.

3.5 Unanticipated Environmental Impacts or Risks.

58. 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.

59. Instrumental monitoring was carried out in accordance with Monitoring Plan for Quality of Environmental Components (water, air, noise, vibration), reflected in SSEMP. Socially sensitive receptors and objects of increased environmental sensitivity are listed in Table 10.

Table 10. Sensitive receptors at Project Sites.

Lot 1	Lot 2
<ul style="list-style-type: none"> • Balykchy town. High road, beginning of the section km 0 + 000 - 0 + 300 • Tash-Sarai village, km. 11+000 • Chu river, Tash –Sarai village (bridge), km 11+500 • Irrigation ditch, km 12+055 • Chu river, gauging station, bridge, km 42+600 • Production base km 16+600 	<ul style="list-style-type: none"> • Kok-Jar village at km 65+985 • Chekildek village 70+003L • Epkin village, next to mosque km 86+540 • Production base at km 81+500 • Joon-Aryk River km 65+410 • Sazdyn Suusu river km 86+261 • Mukandyn suusu river km 68+044 • Kok-Jar River cemetery km 68+000 • Cemetery Chekildek village km 69+800 • Cemetery Cholpon village km 82+800

60. Instrumental monitoring of noise and vibration levels is being carried out by a specialized laboratory "ProfiLab".

61. Sampling and laboratory analyses of air and water quality are conducted by the Department of Environmental Monitoring (DEM) under the Ministry of Natural Resources, Environment and Technical Supervision of KR was completed.

62. In the reporting period, the following was carried out: instrumental noise and vibration measurements and laboratory tests of water and air quality in July, October and December 2023.

63. Instrumental monitoring of air, water, vibration and noise quality has been conducted in areas of high environmental sensitivity and socially sensitive receptors along the Project Road and at the quarries (Photos 115-128)



Photo 115. Lot 1. Balykchy, roundabout. Noise and vibration measurements. July



Photo 116. Lot 1. Production base of AC plant. km. 16+600. Air quality measurements. July



Photo 117. Lot 1. Air quality measurements at production base, km 16+600 July



Photo 118. Lot 1. Air quality measurements at quarry, km 16+600. July



Photo 119. Lot 1. Tash-Saray village. Measurements of noise and vibration levels. July



Photo 120. Lot 2. Manufacturing base. July



Photo 121. Lot 2. Km. 86+261. Water sampling in Sazdyn-Susu River. July



Photo 122. Lot 2. Km 88+795.Zhar-Korundu River. July



Photo 123. Lot 1: Water sampling from Chu River, km 11+500. October



Photo 124. Lot 2. Kok-Jar village km. 65+985 Air quality measurements. October



Photo 125. Lot 1. Tash-Saray village. Measurements of noise and vibration levels. October



Photo 126. Lot 2. Water sampling from the Kok-Jar River. December



Photo 127. Lot 2. Epkin village Noise and vibration measurements. December



Photo 128. Lot 2. Epkin village, mosque, km 86+540. Air quality measurements. December.

64. The noise and vibration levels during operation of Contractor's vehicles and equipment in quarries and production bases and during construction works were within maximum permissible levels (MPL). Vibration levels of operating construction equipment were also within the MPL. (see annex 1)

65. According to the results of instrumental measurements and laboratory tests, air (see annex 1) and water (see annex 2) quality components are within the MPC normative values.

4.2. Trends.

66. Based on data from current and previous monitoring periods, there is a trend towards increased responsibility on behalf of the Contractor in environmental protection issues, there is a decrease in the recurrence of previously identified non-compliances on behalf of Contractor.
67. In reporting period Contractor ensured instrumental quality monitoring in accordance with EMP.

4.3. Summary of Monitoring Outcomes.

68. During reporting period Contractor's performance is evaluated as satisfactory. Contractor eliminated non-compliances and implemented SSEMP recommendations in a timely manner. Only one non-compliance could not be completed by deadline. CSC will work closely with Contractor and subcontractors to support Project compliance with environmental safeguards.
69. In reporting period, instrumental measurements of noise and vibration levels of environmental components (atmospheric air, water) were carried out in July, October and December. In accordance with Instrumental Monitoring Plan, water and air quality tests, as well as noise and vibration measurements were carried out 3 times in reporting period.
70. According to instrumental surveys of air quality and noise and vibration levels, there is no impact of construction on environment. Concentrations of substances for determined components in water and air are within specified MPCs and MPLs.

4.4 Material Resources Utilization.

4.4.1 Current period.

Water Resources

71. Contractor's requirements for drinking water in camps, offices, and worksites are brought from local suppliers by containers of five (5) gallons. For water requirements for domestic water supply, batching plants, equipment maintenance areas, and fabrication areas, Contractor developed spring sources near campsites. Water is pumped from spring to water tanks and distributed by a pipeline to faucets.

72. To provide water for dust suppression, Contractor obtained permission from local authorities to intake water from following sources listed in Table 11.

- 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 11. 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
<i>For Lot 2</i>		
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.

73. 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.

74. As of end December 2023, Contractor holds 21 quarries for construction material, the main contract is expiring in July 15th, quarries' recultivation will be finished and transferred to commission until October 2024. Table 12 shows characteristics of these quarries.

During reporting period, quarries at km.5+500, km.16+600, and km.34+240 on Lot 1 and quarries at km.75+400 and km.81+300 on Lot 2 were being developed. 75+400 and km.81+300 on Lot 2. During quarry development requirements on mitigation of negative environmental impact were fulfilled: watering of rock mass, access roads.

At the beginning of December, road construction on both Lots was completed. Contract completion date - July 2024. In December the Contractor started works on technical levelling and bringing the quarry sides to a stable safe condition (Photos 66, 89-91). Reclamation of the quarries and their handover to the Commission will be completed by October 2024.

Table 12. Characteristics of Quarries.

№	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	No
№3	km. 7+200		195 200	4,88	122 m	
№4	km. 9+000	Boz-Barmak	380 000	7,6	25 m	Depleted
№5	km. 16+600		1 744 000	43,6	42 m	Yes
№6	km. 16+600		51 000	12,84	42 m	Yes
№7	km. 16+600		113 000	2,83	42 m	Yes
№8	km. 19+360		66 500	22,16		No
№9	km. 20+600		65 600	1,64	120 m	No
№10	km. 22+700		380 000	9,5	37 m	No
№11	km. 26+800		488 000	12,2	80 m	Depleted
№ 12	km. 34+240		245 600	6.14	325 m	Yes
№ 13	km. 39+450		164 000	4.1	520 m	No
№ 14	km 43+400		124 000	3.1	40 m	No
Lot 2						
№15	km. 71+500		-	5,2	5 m.	Depleted
№16	km. 75+400		108 000	2,7	30 m.	Yes
№ 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	Epink	85 000	2,0	20 m	Depleted
№ 21	km. 89+093		105 145	0.77		Depleted

Concrete, Asphalt, and Reinforcing Steel Bars.

75. The cement, asphalt and reinforcing steel bars needed for fabrication or construction of culverts, concrete pipes, bridges retaining walls and other concrete structures are obtained from approved commercial sources.

Fuel, Lubricants, Acetylene. Fuel requirements for the heavy equipment, machineries and vehicles are supplied by gasoline stations near the project sites, either pumped into the Contractor's cylindrical tank installed near the 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.

76. From project start until end of June 2023 Contractor removed from quarries 459 507 m³ of fill/rock/cumulative material for Lot 1 and 487 444 m³ of these materials for Lot 2. As of this report period, Contractor do not have a record or breakdown of actual utilization of water (drinking, domestic supply, batching plants, watering of sites and production areas, equipment washing areas, etc.). For worksite watering, the Contractor currently has 7 water trucks being used throughout Lot 1 and Lot 2. When hot weather starts, regular water spraying of unpaved road sections is organized. Because of heat weather there is still dusting on road. In reporting period, 2322 m³ of water from surface water bodies were used for dust suppression. Water is also used for technological purposes: for preparation of concrete mixes and for production needs: rinsing of Concrete Mix Plant after preparation of concrete mixes and rinsing of concrete mixer tanks.

4.5 Waste management.

77. 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**

78. The spoils and scarified asphalt are disposed in Project's disposal sites. Contractor has all necessary permits from relevant state agencies (aiyl okmotu, 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 13 shows utilization of soil disposal sites while Table 14 - scarified asphalt disposal sites.

79. In reporting quarter, technical levelling of spoil dumps on Lot 1, located at km. 36+400, km.38+600, km. 40+200 (Photos 71-73)

80. Technical levelling of old asphalt dumps on Lot 1 located at km. 7+00 (Photos 67-68) and Lot 2 spoil dumps at km. 70+180 (photos 92-93) and km. 62+520 BS (Photos 94-96, 99-100).

Lot 1. Km. 12 + 000 (letter of consent of Kok-Moynok village administration No. 465 of 10.16.2020. Permit of the Issyk-Kul territorial administration of the 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).

Table 13. Characteristics of unusable soil dump sites.

№	Location		Distance from the road (m)	Spoil capacity			Spoil quantities m ³	As of December 30 2023,	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 is completed	Satisfactory. Leveled
2	km 40+360	-	30 (LS)	10645	2,1	22 015	4489	Not yet used	Satisfactory. Leveling required
Lot 2									
3	km 71+640		410 (LS)				918		Satisfactory. Leveled.
4	km 71+860		1(RS)				2632		Satisfactory. Leveled.
5	km 80+900		29(LS)				2207		Satisfactory. Leveled.
6	km 89+090		RS				3049		Satisfactory. Leveled.
7	70+180		400(LS)				11704		Satisfactory. Leveled soil.
8	km 71+640	-	12 (LS)	3850	4	5 401	14691	Active	Satisfactory. Soil is spread and levelled.
9	km 71+860	-	12 (LS)	2069	4	8 278	8758	Active	Satisfactory. Soil is spread and levelled.
10	km 80+900	-	70 (LS)	4200	3	12 600	12000	Active	Satisfactory. Leveled
11	km 89+090	-	60m (RS)	12000	1,8	21 800	18000	Active	Satisfactory. Soil is spread and levelled

Table 14. Characteristics of old scarified asphalt dump sites

№	Location		Distance from the road (m)	Spoil capacity			Disposed Quantity m ³	As of December 30 2023,	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	Active	Technical reclamation performed
	km 20+100	50 (RS)	48 700		33 902	9000	9000	Activity completed	Technical reclamation performed
	km 21+260	-	50 (RS)	48 700		80 374	10500	Activity completed	Technical reclamation performed
	km 32+720	-	150 (LS)	4 100	3,0	16 000	11500	Activity completed	Satisfactory. Old asphalt spread and leveled. Spoil has been reclaimed.
	km 38+660	-	545 (LS)	26 100	3,0	78 535	3500	Active	Technical reclamation has been carried out
	km 40+200	-	141 (LS)	9 000	1,4	12 461	4500	Active	Technical levelling has been carried out
	Km 40+360		106400			4500		Active	Old asphalt distributed and levelled.
Lot 2	km 70+180	-	400 (RS)	18 800	4,4	82 784	11000	Active	Technical reclamation carried out
	km 89+090	-	80 (RS)	12 000	1,8	21 800	22000	Still active	Satisfactory. Old asphalt is spread and leveled.

81. Solid domestic waste is removed (photos 118-122) and placed in municipal landfill in Balykchy and v. Cholpon. Wastewater is transported to treatment facilities of Balykchy in accordance with contract with municipal enterprise Balykchy - "Gorvodokanal".



Photo 129. Lot 1. Removal of solid waste from Contractor's camp. October



Photo 130. Lot 2. Removal of solid waste from Contractor's camp. December

4.5.1 Current period.

82. For current reporting period, total unsuitable soil from excavations is 63,076 m³ of which 37,489 m³ is from Lot 1 and 25,587 m³ is from Lot 2. By December 2023 total unsuitable soil was 166,068m³; 66552m³ from Lot 1 and 99546m³ from Lot 2. All materials were delivered to the soil stockpile sites as shown in Table 13.

83. By December 2023, total volume of cleared asphalt from Lot 1 was 388,732 m³. Materials are disposed of at approved landfills as shown in Table 14. The total volume of scarified materials from Lot 2 was 12,583 m³.

84. Solid waste generated by workers living in camps is collected by Balykchy municipal department and disposed at Balykchy municipal landfill. Municipal solid waste under Lot 2 is transported from construction camp to Cholpon aiyl okmotu municipal landfill. Amount of solid domestic waste for 2023 for Lot 1 was 13,500 kg, for Lot 2 - 3,700 kg.

85. The volume of disposed wastewater from Lot 1 was 890 m³, from Lot 2 - 322.5 m³. Wastewater is transported to treatment facilities of Balykchy in accordance with Balykchy municipal enterprise "Gorvodokanal".

Cumulative Waste Generation.

86. Major part of waste generated is soil and cut asphalt, as mentioned above. Total amount of waste from project start until end of December 2023 is 401 315 m³. The cumulative domestic solid waste generated by Project is 60,3 tons.

4.6 Health and safety.

4.6.1 Public health and safety.

87. 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 the work sites.

4.6.2 Health and safety of workers.

88. During this reporting period, there were no accidents or other diseases among Contractor's working personnel. The Contractor's workers' accommodation camps on Lots 1 and 2 are maintained in good condition and comply with hygienic and sanitary standards (Photos 41-54). 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.

89. In the camp on Lot 1 and Lot 2 there are conditions for personal hygiene: there is a bathroom with a shower bathroom with a shower, personal hygiene products in each room. Provided "entry" and daily temperature control with registration in the Logbook. Hospitals in Balykchy and Kochkor villages. Kochkor concluded agreements for the provision of medical services. Contractor complies with the "Plan of response, prevention and prevention of spread of COVID-19". In September 2021, vaccination of 99% of employees on Lot 2 was carried out.

90. 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

91. No trainings were conducted during the reporting period. For the whole period of the project implementation to date 7 trainings on environmental protection and 4 trainings on safety have been conducted



Photo 124. Lot 1. Training on environmental safeguards and SSEMP implementation and photo 125 on Lot 2.



Photo 126. ADB workshop

5. FUNCTIONING OF THE SEMP.

5.1 SEMP Review.

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

93. A plan to prevent the spread of COVID-19 was developed additionally considering the current epidemiological situation.

94. During construction works, the Contractor has ensured implementation of mitigation measures for the environmental impacts of construction works in accordance with the SSEMP 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

Noise management plan

Water quality management plan

Air quality 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.

Lot-2:

Emergency Management Plan

Grievance redress mechanism

Occupational safety, health and hygiene plan

Noise management plan

Water quality management plan

Air quality management plan

Dust control plan

Land Protection Management Plan

Plan of environmental protection during the construction and reconstruction of bridges. Following Plans are in the process of implementation. The following Plans will be implemented after completion of the Contract, namely:

Quarry Management Plan: In December, the Contractor commenced works on technical levelling and bringing quarry sides to a sustainable safe condition on both Lots. Quarries' reclamation and handover to the Commission will be completed by October 2024.

Construction Camp Management Plan: During reporting period, production base and Subcontractor's Camp dismantling and reclamation was completed on Lot 1. Reclaimed sites handover to the Commission will take place by March 2024.

Contractor's Camp and production bases dismantling, reclamation handover on Lot 2 to the Commission shall be accomplished by October 2024.

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 - implementation of the Construction Waste Plan is in process and will be completed by October 2024.

Tree Management Plan (TMP):

Following reporting year, 220 compensatory planting of trees to replace dead trees on Lot 1 will be carried out in spring time.

On Lot 2 it is planned to plant 1,808 seedlings according to the TMP and compensatory planting to replace dead seedlings.

6. GOOD PRACTICES AND OPPORTUNITY FOR IMPROVEMENT.

6.1 Good Practices.

95. 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 dumping site is discovered during construction works, in the previous reporting period.

96. Road construction was completed in reporting period. A good example is the promptness of Contractor's preparation for demobilization: meetings with landowners were held in a timely manner to agree on issues of reclamation of lands used for quarries, dumps, production bases, Contractors' accommodation camps and their acceptance and transfer (Photo 131). The Contractor ensured technical leveling of worked-out quarries' territory and stabilizing quarry's sides to a stable position, technical leveling of dumps of unsuitable soil and old asphalt. Upon receipt of Quarry Reclamation Project, reclamation of quarries will be completed in full in accordance with the design documentation.



Photo 131. Lot 1. Meeting in Tash-Moinok village administration to discuss issue of lands reclamation used for Contractor's production base and accommodation camp, and establishment of a committee for acceptance-transfer of reclaimed lands.

6.2 Opportunities for Improvement.

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

- Complete reclamation of lands allocated for: bypass roads, quarries, dumps, production bases and transfer them to the owners of the land with preparation of Acceptance Act in accordance with the requirements of legal regulations of KR until March 2024.
- Restore dead saplings by planting new ones to replace the dead ones on Lot 1 and Lot 2 in the spring of 2024.
- The number of saplings to be restored on Lot 1 is 220, on Lot 2 will be determined by inventory results in spring 2024.

7. SUMMARY AND RECOMMENDATIONS.

7.1 Summary.

98. 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 the identified violations and non-compliances were eliminated by Contractor within established deadlines.

99. There is a positive dynamic: Contractor has ensured technical leveling of worked-out quarries' territory and stabilizing quarry's sides to a stable position. Upon receipt of the Quarry Recultivation Project, quarries' reclamation will be fully completed in accordance with project documentation and reclaimed quarries and spoil sites will be handed over to the landowners. Contractor is carrying out organizational work to establish a commission for acceptance and transfer of land used for quarries, production bases, accommodation camps and dumps (Photo 131). Meanwhile, Contractor, due to weather conditions, has not completed reclamation of some sites allocated for bypass roads on Lot 1. and Lot 2.

7.2 Recommendations.

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

Annex 1 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	
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
	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	

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	0,12	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
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
	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	
Quarry km 7+100 Latitude 42°40'60 Longitude 76°09'32"	June 2021 (baseline)					58	90
	Aug 2021					50	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
	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
	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

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					43	75
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
	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	
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

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	0,4	0,067	0,133	0,41		
	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
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
December 2023	0,2±0,01	0,006±0,003	0,001±0,001	0,009±0,001	48	65	
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

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	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
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
	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

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					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

* No environmental vibration level standards are provided.

Annex 2. Results of laboratory tests of surface water quality.

Sampling location	Selection period	Transparency, cm	Petroleum products	BOD ₅ , mO 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	
	December 2023	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	
	December 2023	Вода отсутствовала				
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	
	December 2023	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	41	<0,005	2,19±0,65	3,70±0,54		
	under the bridge	39	<0,005	2,19±0,65	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		
	December 2023 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. Sazdyn-Suusu 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					The background concentration of suspended solids was increased by 2 mg/l, with the permissible 0.75
	over the bridge	30	<0,005	0,68±0,177	2,8	
	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	
	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	
	December 2023					
	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-Suusuu 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	
	December 2023					
	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					The background concentration of suspended solids was increased by 3.2 mg/l, with an allowable 0.75
over the bridge	31	<0,005	0,68±0,177	2,8	
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	
December 2023					
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	