

Semi-annual Environmental Monitoring Report

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Semi-annual Environmental Monitoring Report
January to June, 2023

Kyrgyz Republic:

CAREC Corridors 1 and 3 Connector Road, Section 2B Epkin-Dyikan [Bashkugandy], Km: 89+500 – 159+200 Project

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Abbreviations

ADB	- Asian Development Bank
ACP	- Asphalt Concrete Plant
CAREC	- Central Asia Regional Economic Cooperation
CSC	- Construction Supervision Consultant
EMP	- Environmental Management Plan
SSEMP	- Site Specific Environmental Management Plan
PIU	- Projects Implementation Unit
m	- Meter
km	- Kilometer
KR	- Kyrgyz Republic
MPC	- Maximum permissible concentration
MAC	- Maximum Allowable Concentration
MoTC KR	- Ministry of Transport and Communication of KR
MF KR	- Ministry of Finance of the Kyrgyz Republic
MoCT KR	- Ministry of Culture and Tourism of the Kyrgyz Republic
MNRETS KR	- Ministry of Natural Resources, Environment and Technical Supervision of the Kyrgyz Republic
NTAETS	- Naryn Territorial Administration for Environmental and Technical Safety under MoNRE and TS KR
DPSSSED	- Disease Prevention and State Sanitary and Epidemiological Surveillance Department of the Ministry of Health of the Kyrgyz Republic
TR	- Terms of Reference
SR	- Safety Rules
FS	- Feasibility Study
CSP	- Crushing and Screening Plant
RME	- Road Maintenance Enterprise
HCHS	- Historical and Cultural Heritage Site;
EIA	- Environmental Impact Assessment
LP	- Labor Protection
HS	- Health Safety
LLC	- Limited Liability Company
HCHSPP	- Historical and Cultural Heritage Site Protection Project
PPE	- Personal Protective Equipment

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1. INTRODUCTION

1.1 Preamble

1. This Report present the Semi - Annual Environmental Monitoring Review for the CAREC Corridors 1 and 3 Connector Road Section 2B Epkin (Km: 89+500) - Dyikan (Bashkugandy) (Km: 159+200) Project.
2. This report is the 9th EMR for the project covering the six-month period of the project work conducted during January – June, 2023.

1.2 Headline Information

3. The Kyrgyz Republic is a landlocked mountainous country, and regional trade is heavily dependent on road transport, which dominates the Kyrgyz transport system and heavily relies on road transport. The government of the Kyrgyz Republic asked the Asian Development Bank (ADB) to assist in financing the implementation of the CAREC Corridors 1 and 3 Connector Road Section 2B Epkin (Km: 89+500) - Dyikan (Bashkugandy) (Km: 159+200) Project.

4. The CAREC Corridors 1 and 3 (Epkin Road Section (km 89 + 500) - Dyikan (Bashkugandy) (km 159 + 200) Project aims to improve transport communication and market access in the Kyrgyz Republic. The Project will result in efficient movement of freight and passenger traffic along the CAREC corridors 1 and 3, improving the safety of both road users and pedestrians, and minimizing the road's environmental impact in terms of noise from passing traffic by reconstructing the asphalt pavement.

5. The Project will improve the following socio-economic indicators of the regions of the Kyrgyz Republic:

- Reduction of the passenger and freight transport cost between the southern and Issyk-Kul and Naryn regions by providing direct access.
- Reduction of transport costs due to reduced route and improved road conditions.
- Increased local and international traffic.
- Additional income opportunities for local residents.
- Creation of new jobs.
- Good condition of vehicles /Reduced operating costs

6. CAREC Corridor 1 connects the Russian Federation and Europe with the PRC; it is the only north-south highway that provides access from the central part of the Kyrgyz Republic to the rest of the country and beyond. Likewise, CAREC Corridor 3 connects the Russian Federation and Europe with Central East and South Asia. This is the only direct link between the southern and northern parts of the country, linking two large economic and agricultural centers - Bishkek capital and the country's second largest Osh town. Joining of these two CAREC corridors will link the southern regions (Batken, Jalal-Abad and Osh) with the northern regions (Chui, Issyk-Kul, Naryn and Talas) via a faster and safer alternative route and facilitate further access to international markets.

7. In connection of contractual changes, the original contractor was changed to perform construction work on the project section. The current contractor is China Railway No.5 Engineering Group Co., Ltd.; the contract was signed on September 23, 2021; the contracted work was commenced on January 15, 2022.

8. During the reporting period, activities included producing of materials for construction work such as asphalt concrete mix, concrete and crushed aggregate fractions, road maintenance,

replacement of culverts, excavation of waste material from cuts, embankment; construction of subgrade, subbase and base layers; construction of binder course layer; the crushing and screening plant, the asphalt concrete plant have been installed and are operational etc.; archaeological excavations were conducted studying objects of historical and cultural heritage following the Protection Zone Plan. Instrumental monitoring rounds were conducted three times during the reporting period.

9. This Report contains information on the status of activities related to the prevention adverse impacts on the environment. The observations, corrective actions, and mitigation measures presented in this report are based on a monthly visit-inspection on the project road and living and production facilities for the reporting period conducted by the Consultant's specialists.

10. All observed non-compliances are listed in section 3.3. (Issues Tracking); the inspection reports with findings communicated to the Contractor to undertake corrective actions are presented in Annex 3 hereto.

11. Based on the findings from previous and current audits, trends have emerged indicating poor environmental and safety performance by the Contractor, primarily due to recurring non-compliances. These same findings have persisted consistently across reporting periods. The recurring non-compliances have been associated with issues such as inadequate fire safety measures (including missing critical equipment and inadequate training), lack of cleanliness in the Camp and operational areas, failure to properly dispose of domestic waste in a timely manner, failure to wear full personal protective equipment (PPE) by personnel, and other similar observations.

12. The Contractor shall understand and be consistent in meeting the environmental safeguard requirements. Preventive controls are to be applied to eliminate these non-compliances before they are occurred. Thus, it is strongly suggested that Contractor to increase focus on environmental safeguard performance.

1.3 Camp

13. The contractor's camp is located on the municipal territory of Kuyruchuk Aiyl Okmotu, not far from the contractor's production base. The new contractor received permits from Kuyruchuk Aiyl Okmotu to use this territory.

14. The new contractor's camp territory is currently completely built up. The camp is 2.0 hectares in total. The camp contains offices, a kitchen, a canteen, consultants' residential rooms, a laboratory, a dormitory for contractor's workers, a contractor's office, an equipment maintenance workshop, parking for cars and trucks; a line maintenance hangar, security room, transformer, waste bin area (domestic and food waste), decantation tank, outdoor toilet and shower.

15. Currently, the Contractor has selected a land plot at km 106+300 of the project road for the second construction camp, with an area of 1,924 hectares. The Contractor has obtained the necessary permits from the Cholpon-Aiyl Okmotu of Kochkor District and the Issyk-Kul-Naryn Regional Office of the Ministry of Natural Resources, Environmental Protection, and Technical Supervision of the Kyrgyz Republic.

16. Within the camp area, there will be dormitories for workers, parking facilities for cars and trucks, a workshop for vehicle repairs, a storage facility, garbage bins for domestic and food waste, a settling tank, a transformer, a security room, toilets, and showers.

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES.

2.1 Project Description.

2.1.1 Project Section Location and Basic Design.

17. The project road Epkin (89 + 500 km) - Dyikan (Bashkugandy) (159 + 200 km) is a 70-kilometer highway from east to west. This section follows the existing road to Bashkugandy (km 159). The section belongs to the Naryn region, crosses a small western part of the Kochkor district but most of it is located in the Jumgal district. The road is in poor condition; the surface is uneven with numerous potholes covered with frequent transverse and longitudinal cracks, often with a network of cracks. There are forage and irrigation ditches, lowlands and hills with pastures along the project road section. The road follows the Jumgal River and crosses the Tugol-Sai River. The map of the project road is shown in Figure 1. Nearby villages located along the road section are listed in Table 1.

18. The road runs through the Kochkor valley, ascends to about 2600 m, which highest point is on the Kyzart Pass, after which it descends to the Jumgal depression. The section runs west to Bashkugandy village, passes through a series of settlements interspersed with agricultural fields with a two-lane roadway configuration. These western parts of the Kochkor district represent vast sections of agricultural land intended for agriculture and livestock husbandry. The high-mountainous part is the border between the Kochkor and Jumgal districts, as well as the border of the water-parting lines of the Chui and Jumgal rivers. This high point of the road is a pass point between mountain ranges running parallel east to west of Naryn Region. The area is characterized as hilly and mountainous and covered with grasses suitable for grazing.

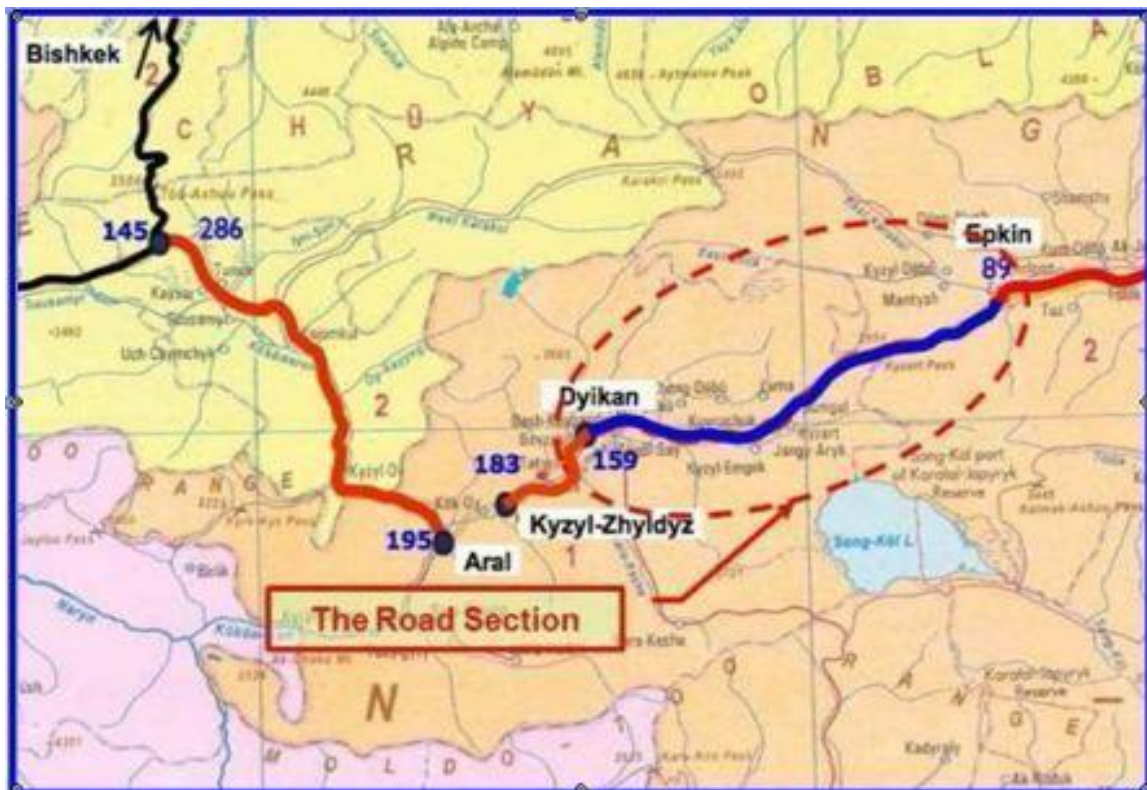


Figure 1: Map of Epkin-Dyikan (Bashkugandy) Location



Figure 2: Topographic map of the area where the road section Epkin-Dyikan (Bashkuugandy) is located.

Table 1 Names of Villages along the Project Road Section

Region	District	Village	Section/km
Naryn	Kochkor (western part)	Epkin	89+500
	Jumgal	Jumgal	127+240 – 129+500
		Kuyruchuk	141+750 – 144+800
		Tugol-Sai	149+500 – 151+100
		Bashkuugandy	159+000

19. Geotechnical conditions for subgrade construction on the road section between Epkin and Dyikan is favorable. The basic direction of the 70 km long road is laid mainly on the existing roadbed with gravel fill, in some places with asphalt pavement. The pavement is asphalt, mainly of 5–6 cm thick, rarely 9–10 cm. The pavement base is constructed of gravel, pebble and crushed stone soil with sandy loam and sandy aggregate.

20. The main works include earthworks, construction of culverts, reconstruction of the bridge in Tugol-Sai village (km 148+850) and asphalt pavement. In order to improve drainage systems, the work includes the reconstruction and replacement of most of the deteriorated irrigation culverts, as well as the new drainage structures construction.

21. Construction work is carried out mainly within the existing road's right-of-way, thus minimizing environmental impact. The Project includes a number of related activities, such as development of quarries, operation of the concrete plant and crushing and screening plant, the construction of a camp for workers and storage areas, etc.

22. In accordance with the Terms of Reference, the road pavement is designed for an initial design life of 10 years with options for structural overlay for a design life of 15 and 20 years.

2.1.2 Work Scope under Contract.

23. Details of the designed project road section:

- To restore and lay the project road to Technical Category II from Epkin (km 89) to Bashkugandy (km 159) in accordance with the Law of the Kyrgyz Republic On Motor Roads with geometric and structural requirements with an estimated speed of 90 km/h outside settlements and 60 km/h in villages.
- Reconstruction, repair and/or replacement of bridges and culverts.
- Construction of side drains and other drainage structures.
- Provision of retaining walls and riverbed protection measures, if necessary.
- Provision of proper road signs and markings.
- Provision of protective guard-rails.

24. The road was designed in accordance with the Kyrgyz geometric design standard for Category II, and, accordingly, it must be sufficient to effectively withstand the load of transport during the projected service life. In fact, it will be a two-lane road consisting of the width of the roadway (the sum of the width of the lanes) and the width of the shoulder. The design elements for the project road's cross section are as follows:

- Number of lanes: 2
- Lane width: 3.5-3.75 m
- Carriageway width: 7.00-7.50 m
- Shoulder width: 3.25–3.75 m (of which 0.50–0.75 m asphalted)
- Total road width: 15.00 m

25. Detailed engineering designs have been prepared based on topographic surveys and geotechnical studies, as well as road surface, drainage structure and bridge conditions. International standards were applied to compensate for any deficiencies in national standards. The ADB-financed road section (Epkin-Bashkugandy) is a two-lane road with a pavement width of 6-8 meters (m), and mostly asphalt pavement in poor condition. About 70% of asphalt areas are in poor condition with potholes, cracks and broken edges, and some areas are already deteriorated down to gravel. The average roughness index is 8.33 m/km.

26. Operation of heavy and noisy machines in the vicinity of settlements was conducted during the daytime. No-vibration compaction method was utilized in residential areas and in close vicinity to cultural and historical heritage sites along the road.

27. The contract for the provision of construction supervision services was concluded between Gentek International Engineering and Consulting Limited and the Ministry of Transport and Communications of the Kyrgyz Republic on August 1, 2018.

28. The project provides for the construction and repair of the following engineering structures and communications, as well as the parameters of the scope of work.

- Asphalt pavement 103 963 m³;
- Binder with 9 cm thickness – 62 225 m³;
- Wearing layer with 6 cm thickness – 41 738 m³;
- Base, with 20 cm thickness – 148 771 m³;
- Lower shoulder with 20 cm thickness – 70 648 m³;
- Upper shoulder with 15 cm thickness – 61 301 m³
- Subbase with 25 cm thickness – 361 612 m³

Table 2. Project Details

From	To		Total Road Length			
Km 89+500	Km 159+200		69.7 Km			
Excavation to dump	406 818 m ³		Unsuitable material from cuts		269 291 m ³	
			Rock material from cuts		136 860 m ³	
			Unsuitable demolition material		667 m ³	
Embankment	533 250 m ³		Common material from cuts		174 697 m ³	
			Rock embankment from cuts		9 100 m ³	
			Common material from the quarry		186 663 m ³	
			Subgrade material from borrow		157 290 m ³	
			Common material for road signs and backfill		5 500 m ³	
Subbase C grade, 0/40 fraction	364 667 m ³		Thickness on main road = 25 cm		361 612 m ³	
			Thickness on ramps = 25 cm		3 055 m ³	
Lower shoulder C4 grade, 0/70 fraction	71 063 m ³		Thickness on main road = 20 cm		70 648 m ³	
			Thickness on ramps = 15 cm		415 m ³	
Upper shoulder C10 grade, 0/40 fraction	62 131 m ³		Thickness on main road = 15 cm		61 301 m ³	
			Thickness on ramps = 5 cm		830 m ³	
Base I grade, 0/30 fraction	149 681 m ³		Thickness on main road = 20 cm		148 771 m ³	
			Thickness on ramps = 15 cm		910 m ³	
Asphalt pavement	103 963 m ³		Binder Thickness = 9 cm		62 225 m ³	
			Wearing layer Thickness = 6cm		41 738 m ³	
Drainage	Open drain		Closed PVC drain		Closed drain, non-PVC	
	Excavation for 20 258 m ³		1 363 m		3 000 m	
Sulphate-resistant culverts, B30	D = 1.0 m	D = 1.5 m	D = 2.0x1.5 m	D=2.0x2.0 m	D=3.0x2.5 m	D=2x3.0x2.5 m
	1 130 m	898 m	25 m	27 m	10 m	11 m
Reinforcement	42.91 t		Bridge		28.87 m	

2.2 Project Contracts and Management.

29. A scheme of the organizational structure and management of project activities is shown in Figure 2. Representatives of the main organizations involved in the project and related to environmental protection are listed in Table 3. List of the representatives currently involved in the organization and implementation of the project work have been updated and shown in Tables 4 and 5

Figure 3: Project Organizational Structure and Management

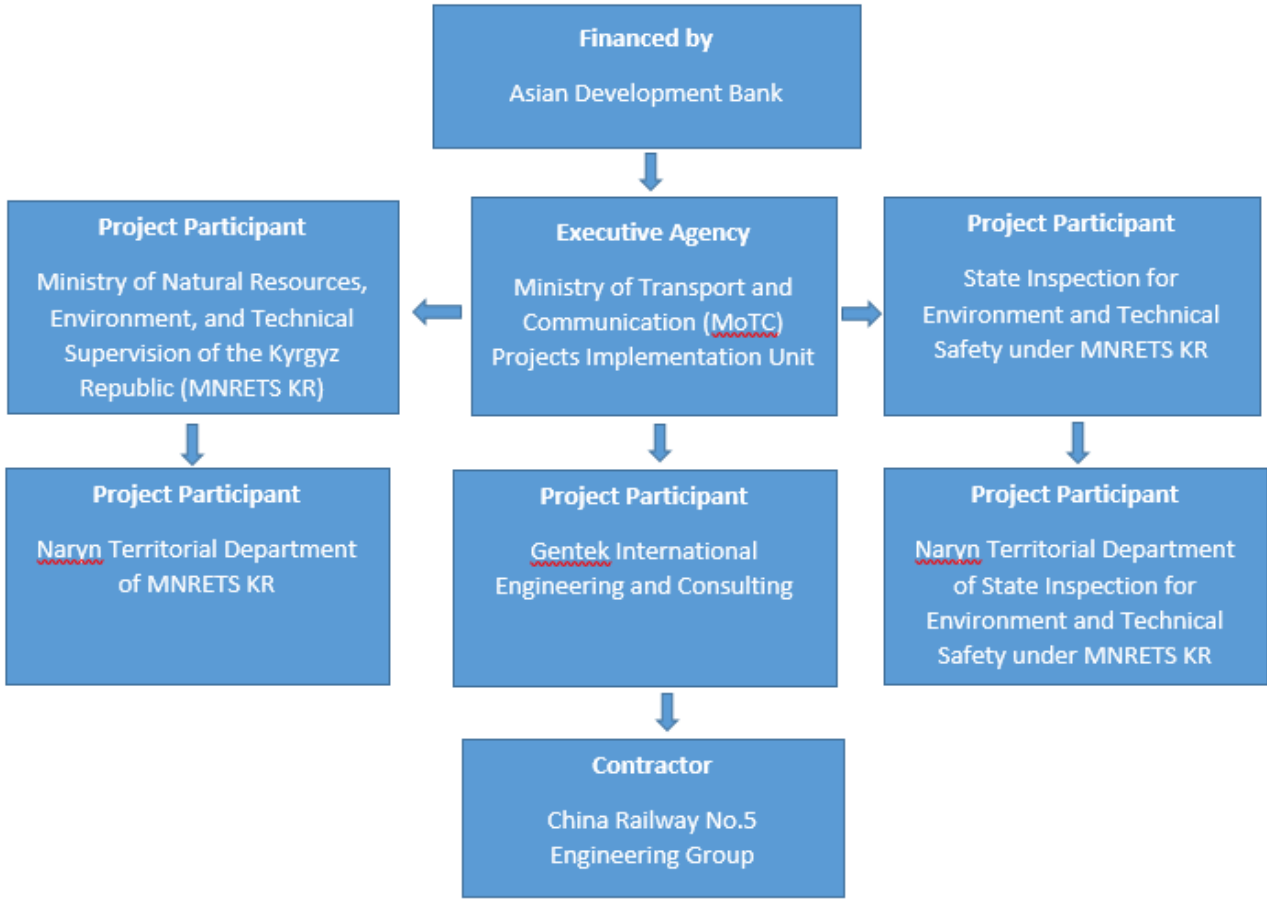


Table 3: Main organizations involved in the project

No	Name of company	Activities in the project	Responsible persons for environmental protection	Contact details
1	ADB	Country Environmental Focal	Ninette R. Pajarillaga	npajarillaga@adb.org
2	ADB	National Environmental Consultant	Sultan Bakirov	Sbakirov.consultant@adb.org
3	PIU MoTC KR	Environmental Specialist	Asylbek Abdygulov	asylbeka@piumotc.kg
4	Gentek Consulting Company	International Environmental Specialist	Olga Syzonenko	olga.syzonenko82@gmail.com
5	Gentek Consulting Company	National Environmental Specialist	Talantbek Zhumaliev	take0978@mail.ru
6	Contracting company: China Railway No. 5 Engineering Group Co., Ltd	Environmental Specialist	Nurlan Nurdinov	nnurdinov78@mail.ru

Table 4: List of Key Consultant's Employees

<i>International Employees</i>	
Senior Highway Engineer / Team Leader	Selcuk Mutlu
Pavement and Materials Engineer	Jamil Zokhrabov
Structural Engineer	Punhan Mirzaev
Road Safety Engineer	Ercan Duymaz
Social development and Resettlement Specialist	Saim Tuzlu
Contract Specialist	Rufat Mammadov
Environmental Specialist	Olga Syzonenko
<i>National Employees</i>	
Highway Engineer/Deputy Team Leader	Omurbek Shekeev
Pavement and Materials Engineer	Ulanbek Alymkulov
Structural Engineer	Nasyr Moldogaziev
Quality Assurance Engineer	Rysbek Sultangaziev
Quantity Engineer	Joodar Alymkulov
Road Safety Engineer	Suiunbek Tokobaev
Social and Resettlement Specialist	Omorbekov Azamat
Environmental Specialist	Talantbek Zhumaliev
Hydrological Drainage Specialist	Talantbek Ashymbekov

Table 5: List of Key Contractor's Employees

No	Position	Professional qualifications	Personnel
<i>International Employees</i>			
1	Project Manager	Road and Bridge Engineering	Zhang Liang
2	Executive Deputy Manager	Road and Bridge Engineering	Hu Huihui
3	Site Deputy Manager	Road and Bridge Engineering	Su Chenghong
4	Civil Engineer	Transportations and Civil Engineering	Du Moufu
5	Structural Engineer	Road and Bridge Engineering	Li Hong
6	Equipment Plant Engineer	Mechanic Engineering	Li Xiaoke
7	Engineering Department	Engineering	Zhang Zhongyi
8	Materials Engineer	Engineering	Zhai Penghui
9	Commerce Department	Engineering	Liu Linhai
10	Surveyor	Engineering	Yu Jiansong
11	Earthwork Team	Engineering	Zhao Xin
12	Pavement Team	Engineering	Yang Tongfeng
<i>Local Employees</i>			
13	Environmental Specialist	Ecology and Nature Management	Nurlan Nurdinov
14	HSE Engineer	Engineering	Uzbekov Kanatbek
15	Social Development and Public Relations Specialist	Road Engineering	Maksat Kamchybekov
16	Archaeologist	History & Archaeology	Orozbek Soltobaev
17	Traffic safety engineer	Engineering	Abylabekov Kozhomkul

30. The details of the contract of the contracting company responsible for the road construction work are shown in table 6 below.

Table 6: Project Contracts and Management

Project	Kyrgyz Republic: CAREC Corridors 1 and 3 Connector Road Project
Contractor	China Railway No.5 Engineering Group Co. Ltd.
Road Section:	89+500 km - 159+200 km, total length 70 km
Donor:	Asian Development Bank.
Contract signing date:	23.09.2021
Executive Agency	Ministry of Transport and Communications of the Kyrgyz Republic
Commencement Notification	
Completion Date	
Completion period - days	2,5-years (30 month) or (900days)
Time Extension - days	-
Warranty period - days	3 years
Contract Amount	US\$ 39,100,002.18
The intermediate payment minimum amount, USD (2%)	2 % of the Accepted Contract Amount.
The total advance payment amount	15 % Percentage of the Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable
Bank guarantee amount	The performance security will be in the form of an unconditional bank guarantee in the amount of 10 % of the Accepted Contract Price.
Third party insurance amount	1,000,000 US Dollars per occurrence with the number of occurrences unlimited
Insurance submission deadlines a) insurance certificate b) relevant policies	Periods for submission of insurance: 28 days 28 days
Penalties for late completion of work	0.05 % of the Contract Price per day, in the currencies and proportions in which the Contract Price is payable.
Maximum amount of penalties for delay	10.0 % of the Contract Price.
Reimbursement of depreciation and prepayment	30 %
Limitation on deduction of money	10 % of the accepted Contract amount
Retention rate	10 % of the amount of the Interim Payment Certificates

2.2.1 Project Contracts and Management.

31. Relevant institutions working with the project include:
- Ministry of Finance of the Kyrgyz Republic (MoF),
 - Ministry of Transport and Communication of the Kyrgyz Republic (MoTC)
 - Investment Projects Unit (PIU) under MoTC,
 - Ministry of Energy and Industry of the Kyrgyz Republic (MoEI)
 - Ministry of Natural Resources, Environment and Technical Supervision of the Kyrgyz Republic (MNRETS)
 - Department of Disease Prevention and State Sanitary and Epidemiological Surveillance of the Ministry of Health of the Kyrgyz Republic (DDPSSSES).
32. MoTC is responsible for the development of the transport sector and is the Executing Agency (EA) for the project. MoTC has overall responsibility for planning, design, implementation and monitoring of the project. PIU works under MoTC and performs tasks assigned by the MoTC.
33. MF KR is the authorized government body responsible for coordinating with ADB and other donors regarding foreign aid issues.
34. MNRETS is the leading environmental state agency responsible for state policy in this area and coordinating the actions of other government agencies in these matters. Its functions include:
- development of environmental policy and its implementation;
 - carrying out state ecological expertise;
 - issuance of environmental licenses;
 - environmental monitoring;
 - provision of environmental information services.
35. MoEI monitors compliance with:
- I. environmental legislation, established rules, limits and norms for the use of natural resources, standards for emissions and discharges of pollutants and disposal of waste in the environment;
 - II. industrial safety requirements for construction, expansion, reconstruction, technical re-equipment, operation, conservation and liquidation of hazardous production facilities;
 - III. requirements of land legislation;
 - IV. safety requirements for equipment and facilities for storing and dispensing oil products and gases, lifting cranes;
 - V. requirements for the rules of safe operation during construction, installation and adjustment of electrical networks and electrical equipment.
36. DDPSSSES supervises the sanitary and epidemiological welfare of the population, safety of goods, products, environmental objects and conditions, prevention of the harmful effects of environmental factors on human health.

2.3 Project Activities during Current Reporting Period.

2.3.1 Road Construction Works.

37. During the reporting period, the following work has been carried out throughout the project area:

- Production of asphalt concrete mix, concrete and crushed aggregate fractions;
- Maintenance of the existing road (grubbing and clearing, installation of temporary road signs, appropriate measures considering season related complications: dust suppression in dry weather, application of anti-icing substances on roadway in winter);
- Existing asphalt pavement break up and removal;
- Cut excavation;
- Embankment;
- Construction on subgrade, subbase and base layers;
- Construction of binder course layer;
- Completion of installation of previously started culverts, as well as laying of new culverts.

38. The Contractor's work plan is currently going through revision and approval process for the construction season in 2023, the plan in Table 7 below is the most recent one and subject to changes.

Table 7: Contractor's Work Plan

TASK NAME	FROM KM	TO KM	LENGTH	START	END	PERIOD
CONSTRUCTION OF THE PROJECT	89+500	159+200	69 700	15.01.22	3-07-24	900
MOBILIZATION				15.01.22	15-04-22	91
RELOCATION				1.06.22	15-11-22	168
TELEGRAPH POLE	89+500	159+200	69 700	1.06.22	15-11-22	168
UNDERGROUND CABLES	89+500	159+200	69 700	1.06.22	15-11-22	168
UNDERGROUND WATER MAIN	89+500	159+200	69 700	1.06.22	15-11-22	168
CULVERTS	129+300	157+100	27 800	25.05.22	30-11-22	190
	110+728	118+961	8 233	1.08.22	20-11-22	112
	118+961	129+300	10 339	20.03.23	1-08-23	135
	89+500	110+728	21 228	2.08.23	1-10-23	61
BRIDGE			1	1.04.23	31-10-23	214
RETAINING WALL	142+962	159+200	16 238	15.08.22	12-11-22	90
	127+740	128+675	935	20.03.23	30-03-23	11
CUT EXCAVATION	117+200	119+500	2 300	1.08.22	31-10-22	92
	111+400	114+260	2 860	1.04.23	1-08-23	123
SUBGRADE	129+200	159+200	30 000	25.04.22	21-09-22	150
	89+500	129+200	39 700	1.04.23	30-10-23	213
SUBBASE	129+200	159+200	30 000	7.05.22	28-09-22	145
	99+200	129+200	30 000	25.04.23	20-10-23	179
	89+500	99+200	9 700	25.03.24	17-04-24	24
BASE	134+200	159+200	25 000	18.06.22	29-09-22	104
	99+200	134+200	35 000	25.04.23	7-10-23	166
	89+500	99+200	9 700	10.04.24	23-04-24	14
BINDER COURSE	134+200	159+200	25 000	27.06.22	6-10-22	102

TASK NAME	FROM KM	TO KM	LENGTH	START	END	PERIOD
	99+200	134+200	35 000	30.04.23	14-10-23	168
	89+500	99+200	9 700	19.04.24	14-05-24	26
WEARING COURSE	134+200	159+200	25 000	21.07.22	20-10-22	92
	99+200	134+200	35 000	17.05.23	26-10-23	163
	89+500	99+200	9 700	15.05.24	3-06-24	20
ROAD SHOULDER	134+200	159+200	25 000	16.07.22	28-10-22	105
	99+200	134+200	35 000	1.04.23	15-11-23	229
	89+500	99+200	9 700	5.05.24	13-06-24	40
ANCILLARY WORKS				1.09.22	15-05-24	623
LONGITUDINAL DITCHES	89+500	159+200	5 000	1.09.22	1-05-24	609
SIDE WALKS	89+500	159+200	5 000	1.09.22	15-05-24	623
BUS STOPS PCS, TOILET	89+500	159+200	16	1.08.23	15-05-24	289
ROAD SIGNS	134+200	159+200	25 000	12.09.22	11-11-22	61
	99+200	134+200	35 000	1.07.23	25-11-23	148
	89+500	99+200	9 700	20.03.24	20-06-24	93
ROAD MARKING	89+500	159+200	69 700	1.09.23	15-06-24	289
LIGHTING INSTALLATION	89+500	159+200	69 700	1.08.23	1-06-24	306
SNOW FENCE	89+500	159+200	69 700	1.09.23	1-04-24	214
METAL GUARDRAILING	89+500	159+200	69 700	1.09.23	1-05-24	244
REINFORCED CONCRETE PARAPETS	89+500	159+200	3 861	1.08.22	1-05-23	274
HAND OVER	89+500	159+200	69 700	15.06.24	3-07-24	18



Figure 4: Site Works

39. Table 8 provides the information on the volume and percentage of the work done at the project site from 01.01.2023 to 31.06.2023. Operations were mainly carried out on the following sections of the construction road:

- 1) km 89+500 – km 95+000
- 2) km 106+000 – km 122+000
- 3) km 133+000 – km 136+000
- 4) km 137+200 – km 142+000
- 5) km 144+100 – km 148+700
- 6) km 150+400 – km 159+200

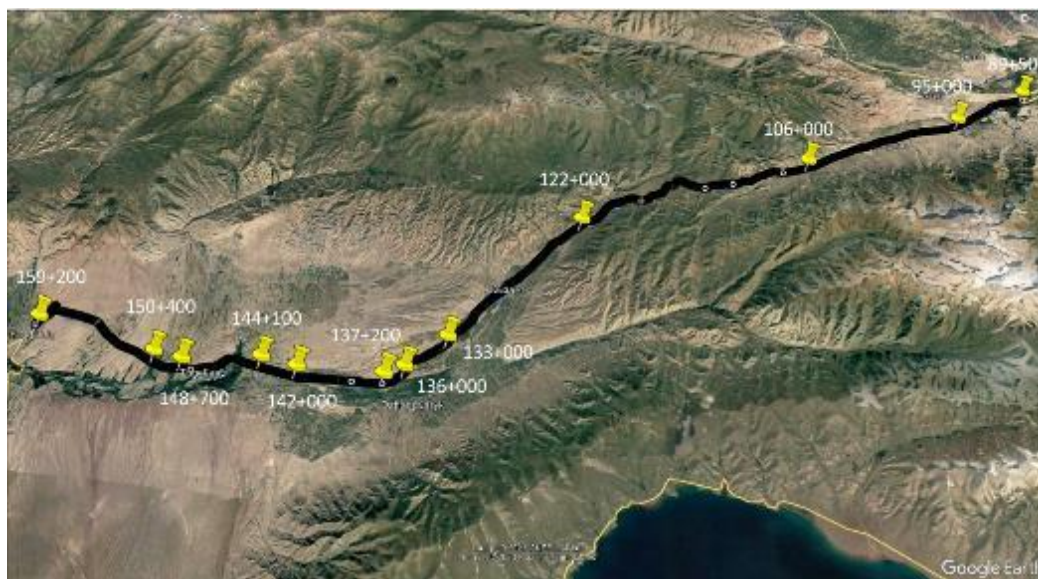


Figure 5: Map of the road sections active work conducted, January-June 2023

Table 8: Scope of the main work performed for 01.01.2023- 30.06.2023.

Description	Unit	Quantity			%	
		By BoQ	Actual	Remaining	Actual	Remaining
Grubbing and Clearing	ha	40,97	5,38	35,59	13,1%	86,9%
Cut Excavation	m ³	338 226,09	73 270,26	264 955,83	21,7%	78,3%
Embankment	m ³	374 076,35	66 886,22	307 190,13	17,9%	82,1%
Subgrade	m ³	285 707,34	35 483,54	250 223,8	12,4%	87,6%
Subbase	m ³	292 447,30	35 712,59	256 734,71	12,2%	87,8%

40. The statistics on main construction work planned and performed in accordance with the schedule are shown in table 9.

Table 9: Planned & actual main work item quantities

Work Item	BOQ Quantity	Planned Quantity	Actual Quantity	Planned %	Actual %	Variance %	Planned Completion Date
Drainage							
Culverts (m)	1 688,27	1280	1198	75,8	71,0	4,9	01.08.2023
Open Drain (m3)	20 258,00	-	-	-	-		01.05.2024
Subsurface Drain (m)	4 363,00	-	-	-	-		
Retaining Walls							
Concrete Walls (m3)	232,00	-	-	-	-		
Earthworks							
Clear & Grub (ha)	40,97	6,12	5,38	14,9	13,1	1,8	31.07.2023
Cut Excavation (m3)	338 226,09	75 000	73 270,26	22,2	21,7	0,5	31.08.2023
Embankment (m3)	3740 76,35	65 000	66 886,22	17,4	17,9	-0,5	31.08.2023
Subgrade (m3)	285 707,34	36 500	35 483,54	12,8	12,4	0,4	13.10.2023
Pavement							
Sub base (m3)	292 447,30	35 000	35 712,59	12,0	12,2	-0,2	13.10.2023
Base (m3)	149 681,00	45 000	44 406,92	30,1	29,7	0,4	26.10.2023
Low. Shoulder (m3)	71 063,00	3 452,73	3 452,73	4,9	4,9	0,7	06.11.2023
Up. Shoulder (m3)	62 131,00	-	-	-	-		10.05.2024
Shoulder Total (m3)	133 194,00	3 452,73	3 452,73	2,6	2,6	0,0	20.06.2024
Binder (m3)	61 965,00	13 981	13 710,22	22,6	22,1	0,4	20.06.2024
Wearing (m3)	41 998,00	-	-	-	-		29.04.2024
Asphalt Total (m3)	103 963,00	13 981	13 710,22	13,4	13,2	0,3	31.05.2024
Bridge 1							
Foundation (%)							
Substructure (%)							
Superstructure (%)							

41. The Contractor's work plan for Year 2022 aimed to complete the construction of a 25 km road at the Wearing Layer level. However, as of today, only 15.5 km of that road section has been completed at the Binder Layer level. The delay in completing the work can be attributed to several factors, including: a) heavy rainfall in the area, which prevented construction activities from starting on site in May 2022; b) a lack of sufficient manpower from local labor resources; and c) delays in mobilizing the asphalt plant due to safety precautions at the country borders in response to COVID-19 restrictions. Additionally, logistical issues, such as the inability to

establish a proper bitumen supply chain, have had an impact on the project schedule. As the work plan for Year 2023 is currently being revised, the availability of existing assets required to complete the work plan will be evaluated in the revised plan.

42. During the winter, the ambient temperature drops below 20 C, which is unsuitable weather for asphalt construction. Activities until the end of March 2023 mainly consisted of the construction of structures, subgrade, rock excavation, production and storage of crushed stone materials, and winter maintenance of road.

43. High dust formations due to dry weather are heavily impacting air quality as well as increasing traffic risks. Therefore, dust suppression is carried out to mitigate impact and risks in the areas where construction works are being carried out and in the roads in vicinity of the settlements located along the project site. The dust suppression plan was updated on 30th June 2022 considering increasing number of water tanks utilized in summer. The plan is attached in Annex 1.

44. 10 - 12 water trucks are utilized to suppress a high dust during early spring and summer, whereas 8 trucks were used in the autumn.

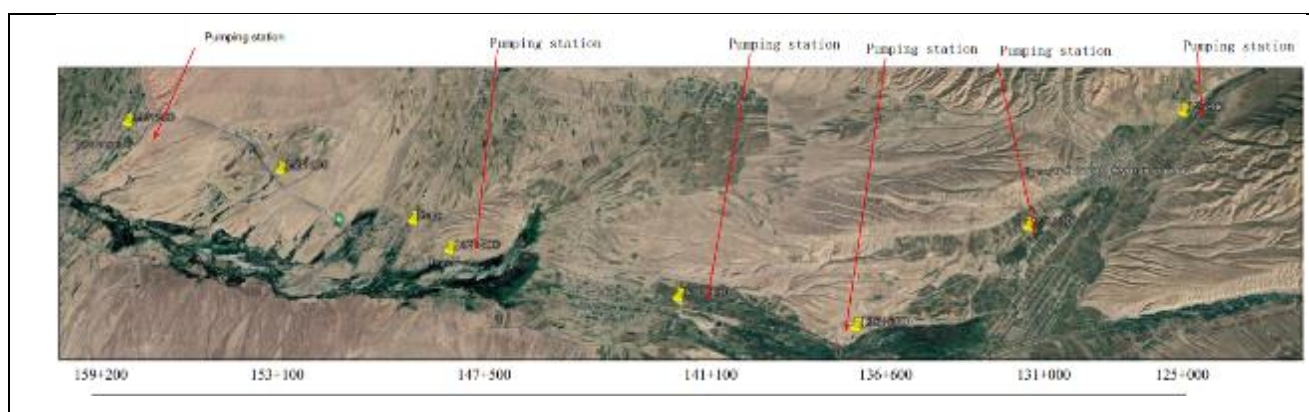


Figure 6: Water intake points for dust suppression along a project road

45. The water used for dust suppression is taken from the points of Tugol-Sai river, Canal on the left side (km 147+540), Zhumgal river, Kyzart river, and Kara suu in the vicinity of the Bash-Kuugandy, Tugol-Sai, Kuiruchuk, Zhumgal, and Ak-Uchuk villages.



Figure 7: Dust suppression on roads.

2.3.2 Quarries.

46. On the project road (Epkin-Dyikan section, km 89-159), 15 sites were allocated for quarries. The Contractor received all the necessary permits/approval from local authorities, and the Ministry of Natural Resources, Environment and Technical Supervision of the Kyrgyz Republic (MNRETS). The MoTC KR received an entrusted permit for all quarry sites from the State Committee for Industry, Energy, and Subsoil Use under the Government of the Kyrgyz Republic (SCIESU under GKR). Table 8 shows the main characteristics of the quarries.

47. During the reporting period, the Contractor obtained permits for the development of new quarries at km 119+300, 100+800, and for the expansion of the quarry at km 148+630.

48. The quarries' areas are in suitable condition. Currently, five quarries are operated: at km 148+630 (located in the Tugol-Sai village area), at km 140+990 (the Kuyruchuk village area), at km 135+280 (the Jany-Aryk village area), at km 110+900 (the Cholpon village area) and at km 91+680 (the Cholpon village area). GIS locations of the quarries' areas are shown below.



Quarry №1 (km 91+68)



Quarry №7 (km 110+900)



Quarry №10 (km 135+280)



Quarry №11 (km 140+990)



Quarry №12 (km 148+630)

Figure 8: GIS locations of the quarries' areas

49. The main characteristics of the quarries are shown in Table 10.

Table 10: Characteristics of Quarries.

No.	Quarry	Up to Km by the road	About the road axis (m)	Object characteristics		Location of quarries	Note
				Production volume (m ³)	Area (ha)		
1	Quarry №1	91+680	RHS 222 m	100 000	11.2	Cholpon v.	Being developed
2	Quarry №2	92+630	RHS 550 m	200 000	15.6	Cholpon v.	Not being developed
3	Quarry №3	94+080	RHS 25 m	60 000	1.04	Cholpon v.	Not being developed
4	Quarry №4	100+790	RHS 85 m	150 000	1.8	Cholpon v.	Not being developed
5	Quarry №5	106+350	LHS 78 m	80 000	2.5	Cholpon v.	Not being developed
6	Quarry №6	106+420	RHS 250 m	150 000	3.3	Cholpon v.	Not being developed
7	Quarry №7	110+900	RHS 94 m	100 000	2.1	Cholpon v.	Being developed
8	Quarry №8	112+870	RHS 27 m	56 000	5.08	Semiz-Bel v.	Not being developed
9	Quarry №9	133+000	RHS 320 m	150 000	0.93	Jany-Aryk v.	Not being developed
10	Quarry №10	135+280	LHS 25 m	200 000	0.64	Jany-Aryk v.	Being developed
11	Quarry №11	140+990	LHS 212 m	97164.92	6.5	Kuyruchuk v.	Being developed
12	Quarry №12	148+630	RHS 1800 m	800 534.9	18360	Tugol-Sai v.	Being developed
13	Quarry №13	148+630 road extension	RHS 1800 m	139 718,24	7,5	Tugol-Sai v.	Not being developed
14	Quarry №14	100+800	RHS 400 m	98 142,0	3,27	Cholpon v.	Not being developed

15	Quarry №15	119+300	RHS 411 m		9,6 ra	Jumgal v.	Not being developed
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2.3.3 Storage Areas (Spoil Areas).

50. All spoil areas used by the previous Contractor after the termination of the Contract were handed over to the local authorities (Ayil Okmotu) under the Handover and Acceptance Certificate. With the resumption of road construction by the new Contractor, the same spoil areas will be used on the road section. Table 11 lists the characteristics of the areas approved for dumping.

Table 11 Storage Areas

№	Object location		Village area	Remarks
	Km	Distance from the road		
1	158+400	317 m RHS	Bash-Kuugandy	
2	158+540	108 m RHS	Bash-Kuugandy	
3	158+550	5 m LHS	Bash-Kuugandy	
4	157+300	150 m LHS	Bash-Kuugandy	
5	155+800	320 m RHS	Bash-Kuugandy	
6	154+800	186 m LHS	Tugol-Sai	
7	152+760	940 m LHS	Tugol-Sai	Denied
8	152+760	87 m LHS	Tugol-Sai	
9	151+140	11 m RHS	Tugol-Sai	
10	150+960	66 m LHS	Tugol-Sai	
11	150+840	104 m RHS	Tugol-Sai	
12	150+100	30 m RHS	Tugol-Sai	
13	149+200	20 m RHS	Tugol-Sai	
14	149+000	RHS	Tugol-Sai	Private land
15	148+200	35 m RHS	Tugol-Sai	
16	147+540	LHS	Kuyruchuk	
17	143+610	421 m – 694 m RHS	Kuyruchuk	
18	140+990	122 m LHS	Kuyruchuk	
19	138+600	45 m LHS	Kuyruchuk	

20	136+940	435 m RHS	Dzhany-Aryk	
21	132+860	315 m RHS	Dzhany-Aryk	
22	130+840	31 m RHS	Dzhany-Aryk	
23	121+620	49 m LHS	Dzhany-Aryk	
24	120+310	37 m LHS	Dzhany-Aryk	
25	117+520	78 m LHS	Dzhany-Aryk	
26	113+970	50 m LHS	Cholpon	
27	110+660	85 m RHS	Cholpon	
28	100+940	91 m LHS	Cholpon	
29	106+720	55 m LHS	Cholpon	
30	106+540	49 m RHS	Cholpon	
31	93+980	66 m RHS	Cholpon	
32	91+360	45 m RHS	Cholpon	
33	98+190	21 m LHS	Cholpon	
34	103+060	16 m RHS	Cholpon	
35	112+600	45 m LHS	Semiz-Bel	
36	113+970	33 m LHS	Semiz-Bel	
37	115+850	60 m LHS	Semiz-Bel	

51. In the reporting period of the project implementation, new storage areas were used:

- 1) km113+970: 50 m on the left side,
- 2) km138+600: 45 m on the left side,
- 3) km148+200: 25 m on the right side,
- 4) km149+200: 20 m on the right side,
- 5) km150+100: 30 m on the right side.

2.3.4 Production Site Territory.

52. The production site of the Contractor China Railway No.5 is defined on the territory of the Kuyruchuk ayil okmotu not far from Tugol-Sai village at km 148+630.

53. Permits for the use of this territory were received from Kuyruchuk Aiyl Okmotu (for the camp - Order No. 52, Resolution No. 3, Act dated 20.12.21, a letter No. 02-4/155, conclusion No. 53, and a camp schematic layout. For asphalt plant and crushing and screening plant -Order No .14, a letter No. 01-1/434, conclusion No. 6).

54. The following buildings and structures are located on the production site: Asphalt plant, crushing and screening plant (Crusher), storage area for bulk materials - crushed stone and sand, concrete unit, hangar for storage of fuels and lubricants, transformer substation, checkpoint, a platform for garbage containers, outdoor toilets, a sump, a dormitory for the workers of the asphalt plant, and the crushing and screening plant.

55. The production site shall be fenced off in accordance with the Plan. In accordance with SSEMP requirements, these objects are located at a distance of at least 500 m from nearby houses, and in order to avoid potential contamination at least 50 m from water sources.

56. During the reporting period, the Contractor constructed a bitumen pit on the project site and obtained the necessary permits for its operation.

57. Currently, the Contractor has selected a land plot for the crushing and sorting plant (CSP) at km 106 - 300 of the project road, with an area of 1.57 hectares. The Contractor has obtained the necessary permits from the Cholpon Ata ayil-okmotu of the Kochkor district and the Issyk-Kul-Naryn Regional Office of the Ministry of Natural Resources, Ecology, and Technical Supervision of the Kyrgyz Republic.



Figure 9: Asphalt plant at the production site (km 148+630)



Figure 10: Camp site (km 148+630)



Figure 11 Crusher at the production site.



Figure 12: Bitumen pit

2.3.5 Camp.

58. The Contractor's camp is located on km 148+630 in the municipal territory of the Kuyruchuk Ayil Okmotu. Permits to operate the territory as a camp were obtained from the Kuyruchuk Ayil Okmotu.

59. The territory of the Contractor's camp has been built up completely. The camp is located in the area of 2 hectares. The camp area includes: offices, a kitchen, canteen, Consultants' residential rooms, laboratory, a dormitory for the Contractor's workers, a Contractor's office, an equipment maintenance workshop, parking lot for cars and trucks a line maintenance hangar, security room, transformer, temporary garbage bins, decantation tank, and toilet and shower.

60. The present total number of employees living in the camp is 25 persons.

61. Potable water used in the camp is supplied in 18-L bottles from Balykchy city by the company "Shoro".

62. Sewage is collected in the fixed septic tanks. As soon as filled, they will be taken out to Balykchy city for further treatment and disposal; Solid waste is disposed to the landfill of Tugol-Sai village on the basis of the agreement. The landfill of Tugol-Sai village is in use, it was approved by the village government with signed Order № 13 b dated 18.04.22)

63. Currently, the contractor has selected a land plot for the construction of an additional construction camp and production area at km 106+300 of the project road, covering an area of 1.57 hectares. The contractor has obtained the necessary permits from the Cholpon ayil-okmotu of Kochkor district and the Issyk-Kul-Naryn Regional Department of the Ministry of Natural Resources, Ecology, and Technical Supervision of the Kyrgyz Republic.



Figure 13: GIS location of the new construction camp and production area at km 106+300

64. The additional camp area already includes offices, a kitchen, a dining hall, accommodation for the Contractor's workers, the Contractor's office, a security room, a parking lot, a generator, a water reservoir, temporary waste bins, a septic tank, toilets, and showers.

65. This area is also planned to accommodate a warehouse and repair zone, and the production area will include an asphalt-concrete plant and a crushing and sorting plant.





Figure 14: The area of the additional construction camp (km 106+300)

2.4 Description of Any Changes to Project Design.

66. No changes were made in the overall project design within the reporting period.

67. In order to reduce the impact of road construction on historical sites near Altin- Arik km 136+020-km 137+200 in Jumgal district, it was decided to change axis design of this section. The road will be widened on the left side stretches to marshland; non-vibration methods are to be applied in this construction section due to the existence of historical sites on both sides of the road.

68. During the reporting period, the possibility of amending the Bridge Project at km 148+847.4 is being considered.

69. In response to a written request from the village aiyl okmotu of Zhany-Aryk, the construction of 10 additional access points for land parcels on the right and left sides of the road section from km 132+640 to km 136+145 was planned. Additionally, at the request of the local Tugolsai aiyl okmotu, an additional access point on the road LHS at km 149+540 was provided..

70. Construction variabilities related to new detour roads and addition new culverts have been applied as a practical tool to manage a process of construction. Thus, For the construction of a rectangular culvert measuring 2.0 m x 2.0 m at km 119+709.45 and for the removal of the old culvert at km 119+720, the construction of a new bypass road was planned to ensure road safety. Above stated did not affect on overall design.

2.5 Description of Any Changes to Agreed Construction Methods.

71. No changes were made in the agreed construction methods within the reporting period.







Figure 15: Constuction activities on project road

3 ENVIRONMENTAL SAFEGUARD ACTIVITIES.

3.1 General Description of Environmental Safeguard Activities.

72. During the reporting period, monthly monitoring of the project site was carried out by local environmental and HSE specialists of the Consultant. Inspections of the condition of the project road, quarry sites, spoil areas, sampling points for measurements, as well as the area of the production base and the contractor's camp were conducted.

73. There was increased dust formation occurred in dry weather during summer and early autumn in some parts of the road with heavy traffic (especially heavy-duty vehicles). Increased dust limits visibility on the roads as well as negatively affects the ambient air and public health. 10 to 12 water tanks were utilized to spray water along the project road in dry weather, up to 8 water tanks were used in spring and just as few as 4 were used in January and February. The following measures are undertaken at the sites to mitigate a negative impact from dust formation:

- All water trucks have been equipped with pumps. This measure supports rapid intake of water from the rivers and speeding up the turnover of watering process;
- In order to minimize dust generation at the project sites, the contractor was instructed to adjust the dust suppression schedule considering the air temperature;
- Speed must not exceed 30 km per hour on the roads with active construction.

74. During the reporting period, tree felling works were not carried out. There are still trees to be cut down on the road expansion areas, road straightening sections, and areas where new culverts will be constructed. As compensatory measures, the planting of new seedlings in a 1:2 ratio is planned. Five preferred tree species, characteristic of the local habitat, have been selected for planting: birch, Lombardy poplar, common poplar, blue spruce, and caragana.

75. At the start of the construction works by China Railway No.5, tree marking was carried out with the participation of the Consultant and local government representatives. The importance of making maximum efforts to preserve existing green vegetation was communicated to the environmental protection specialist of the contracting company.

76. The tree planting plan has not yet been developed as not all trees scheduled for removal have been cut down. Therefore, the tree planting process has been postponed to spring 2024.

Archaeological Objects of Historical and Cultural heritage.

77. During the design stage, in accordance with the legislation of the Republic of Kyrgyzstan, the project "CAREC Corridors 1 and 3 Connector Road, Section 2B Epkin-Dyikan [Bashkugandy], Km: 89+500 – 159+200" has passed through the environmental and government expertise (Госстройэкспертиза). In total, 38 objects have been described as the objects of historical and cultural heritage (ОИЧН). Out of them: 18 mounds were recommended for surveys prior to the process of road construction and 20 mounds during the construction.

78. Since then, several archaeological excavations have been carried out along the project route. The most recent extensive archaeological survey was conducted in the second quarter of 2022 and included dating and interpreting objects and sites of historical interest.

79. The detailed report describing all the findings revealed on ОИЧН during this survey is presented in the relevant sections of the Semi-annual Environmental Monitoring Report,

January-June 2022 “CAREC Corridors 1 and 3 Connector Road, Section 2B Epkin-Dyikan [Bashkugandy], Km: 89+500 – 159+200 project” and available for readers via the ADB internet site.

80. At present, the set tasks regarding archaeological excavations and documentation of the "scheduled for demolition" sites have been fully completed. A total of 70 burial mounds (with 93 burials) were excavated at 10 burial sites in the Kochkor and Jungal Valleys, as well as at the Kyzart Pass.

81. In order to prevent any potential direct or indirect impact on historical and cultural heritage sites located along the construction areas of the project road, after the completion of excavation works, information boards were installed at 16 archaeological sites. These boards are in three languages (Kyrgyz, Russian, and English) and provide information about the type, name, chronological attribution, and protected zones of the monuments. This fully complies with the requirements of the national legislation, specifically the Law of the Kyrgyz Republic "On the Protection and Use of Historical and Cultural Heritage" dated July 26, 1999, No. 91 (as amended on March 18, 2017, No. 47).



Figure 16: ESAs information board

82. The GIS map showing the location of the environmentally significant areas (ESAs) will be provided in the next semi-annual report.

3.2 Site Audits.

83. On-site inspections/audits carried out by the Consultant Local Environmental Specialist and Contractor Environmental Engineer at the project site during the reporting period are shown in Table 12.

Table 12: Inspections/Audits of the project area.

№	Date of Visit	Auditor name	Purpose of Inspection/Audit	Summary of any Significant Finding
1	27.01.2023	Zhumaliev T. Nurdinov N.	Visual inspection to ensure compliance with environmental requirements at construction sites, quarries, dumps, campgrounds, and production areas. The visit was conducted jointly with the Contractor's environmental specialist.	<p>To remove the garbage on time, to keep the camp and production base clean and safe.</p> <p>To create the log for the collection and disposal of waste registration.</p> <p>To carry out regular maintenance of vehicles to minimize emissions of pollutants and oil spillages.</p> <p>To provide all working personnel with personal protective equipment (PPE) and ensure that they constantly work with PPE on.</p> <p>To make sure that PPE of the working staff is always in good condition.</p> <p>To conduct safety instruction to working personnel on a daily, monthly and quarterly basis.</p> <p>To provide the excavation sites with strong fence around them to protect against accidental falls.</p> <p>The contractor has been sent an official letter highlighting the discrepancies.</p>
2	24.02.2023	Zhumaliev T. Nurdinov N.	Visual inspection to ensure compliance with environmental requirements at construction sites, quarries, dumps, campgrounds, and production areas. The visit was conducted jointly with the Contractor's environmental specialist.	<p>To remove the garbage on time, to keep the camp and production base clean and safe.</p> <p>To create the log for the collection and disposal of waste registration.</p> <p>To make sure that PPE of the working staff is always in good condition.</p> <p>To conduct safety instruction to working personnel on a daily, monthly and quarterly basis.</p> <p>To increase the number of water trucks for dust suppression.</p> <p>To organize and equip fire extinguishing shields.</p> <p>The contractor has been sent an official letter highlighting the discrepancies.</p>

№	Date of Visit	Auditor name	Purpose of Inspection/Audit	Summary of any Significant Finding
3	25.03.2023	Zhumaliev T. Nurdinov N.	Visual inspection to ensure compliance with environmental requirements at construction sites, quarries, dumps, campgrounds, and production areas. The visit was conducted jointly with the Contractor's environmental specialist.	<p>To remove the garbage on time, to keep the camp and production base clean and safe.</p> <p>To create the log for the collection and disposal of waste registration.</p> <p>To make sure that PPE of the working staff is always in good condition.</p> <p>To conduct safety instruction to working personnel on a daily, monthly and quarterly basis.</p> <p>To increase the number of water trucks for dust suppression.</p> <p>To organize and equip fire extinguishing shields.</p> <p>The contractor has been sent an official letter highlighting the discrepancies.</p>
4	18.04.2023	Zhumaliev T. Nurdinov N.	Visual inspection to ensure compliance with environmental requirements at construction sites, quarries, dumps, campgrounds, and production areas. The visit was conducted jointly with the Contractor's environmental specialist.	<p>To remove the garbage on time, to keep the camp and production base clean and safe.</p> <p>To create the log for the collection and disposal of waste registration.</p> <p>To make sure that PPE of the working staff is always in good condition.</p> <p>To conduct safety instruction to working personnel on a daily, monthly and quarterly basis.</p> <p>To increase the number of water trucks for dust suppression.</p> <p>To organize and equip fire extinguishing shields.</p> <p>The contractor has been sent an official letter highlighting the discrepancies.</p>
5	05.05.2023	Zhumaliev T. Nurdinov N.	Visual inspection to ensure compliance with environmental requirements at construction sites, quarries, dumps, campgrounds, and production areas. The visit was conducted jointly with the Contractor's environmental specialist.	<p>To remove the garbage on time, to keep the camp and production base clean and safe.</p> <p>To create the log for the collection and disposal of waste registration.</p> <p>To distribute PPE (special clothing, helmet, boots, gloves, goggles) to workers.</p> <p>To increase the number of water trucks for dust suppression.</p>

No	Date of Visit	Auditor name	Purpose of Inspection/Audit	Summary of any Significant Finding
				<p>To organize and equip fire extinguishing shields.</p> <p>To install a barrier at the entrance to the bitumen pit.</p> <p>To install a shield on the welding site from the refueling storage side.</p> <p>To clean up spilled oils and prevent further spillage.</p> <p>During the visit, the relevant personnel of the contractor were given a verbal warning.</p> <p>The contractor has been sent an official letter highlighting the discrepancies.</p>
6	27.06.2023	Zhumaliev T. Nurdinov N.	Visual inspection to ensure compliance with environmental requirements at construction sites, quarries, dumps, campgrounds, and production areas. The visit was conducted jointly with the Contractor's environmental specialist.	<p>To hand over PPE (special clothing, helmet, boots, gloves, goggles) to workers and make sure that workers constantly wear it at the construction site.</p> <p>The fire safety shields in the camp and on the production site will be completed and equipped.</p> <p>To prepare an agreement with the aiyl okmotu for the removal of construction and household waste from a new temporary camp and production site.</p> <p>To provide the outcomes of the laboratory instrumental monitoring of air and water quality, noise and vibration measurements.</p> <p>The contractor has been sent an official letter highlighting the discrepancies.</p>

84. Findings observed during the Consultant's audit were communicated to the contractor for corrective actions. Total 14 non-compliances were raised from them 12 were corrected (closed), 2 actions are remained open/ongoing and their developments should be monitored during the future inspections/audits. Status of non-compliances and corrective actions is also shown in figure 16.

85. Tables 15 summarizes the findings observed during the formal audit conducted by Consultant and Contractor's environmental specialists and status per end of June, 2023.

ADB Mission.

86. The representatives of ADB conducted the visit to CAREC Corridors 1 and 3 Connection Road Section 2B, Epkin – Bashkuugandy” on 19 May 2023 to review environmental safeguards compliance site-specific environmental management plan (SSEMP) implementation and contract provisions on environment, health and safety. Findings and comments were identified during the mission, and then they were communicated via official letter for subsequent corrective actions. Table 16 summarizes findings observed during the review missions.



Figure 17: ADB review mission at the project site, May 19, 2023

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

87. 14 findings were observed, out of them 12 were closed, 2 remained open/ongoing; summary overview is shown in the table below.

Table 13: Overview on findings observed during January- June, 2023

No	Non-compliance identified	SSEMP Number and date of notification	Best Practice Guidelines Applicable	Particular issue and location	Contractor's actions (specify)	Results of Inspection	Status for June 2023
1	Waste management	Annex (ix) – Solid and liquid Waste Management Plan Gentek Ref.: December 28, 2022/227 Gentek Ref.: February 01, 2023/240 Gentek Ref.: February 27, 2023/243 Gentek Ref.: April 04, 2023/266 Gentek Ref.: May 02, 2023/293 Gentek Ref.: May 11, 2023/307 Gentek Ref.: June 27, 2023/347	Waste separation. The availability of sealed containers for collecting hazardous waste, such as oiled rags and soil/sand contaminated with oil products. Keep records of waste collection and disposal.	The territory of the camp and the production base is not kept clean. To create the log for registration of the collection and disposal of waste To prepare an agreement with the aiyl okmotu for the removal of construction and household waste from a new temporary camp and production site	The Contractor has hired a full-time cleaner for regular cleaning and waste disposal.	Contractor's Ref.# CR5-ED-234. Dated: 12.01.2023 Contractor's Ref.# CR5-ED-295. Dated: 08.05.2023	The violation has been partially rectified. These issues will be monitored during future audits. The absence of a journal for tracking the collection and disposal of waste.

No	Non-compliance identified	SSEMP Number and date of notification	Best Practice Guidelines Applicable	Particular issue and location	Contractor's actions (specify)	Results of Inspection	Status for June 2023
2	Maintenance of vehicles to minimize emissions and spill	SSEMP, 6.4 EMP Gentek Ref.: December 28, 2022/227 Gentek Ref.: February 01, 2023/240	established a daily equipment maintenance and guarantee system	Regularly conduct technical maintenance of vehicles to minimize emissions to the atmosphere and spills on the ground	the Contractor has established a system of daily equipment maintenance and guarantee. The Contractor will continue to strengthen the maintenance of project equipment.	Contractor's Ref.# CR5-ED-234. Dated: 12.01.2023 Contractor's Ref.# CR5-ED-295. Dated: 08.05.2023	Resolved for this action. These issues will be monitored during future audits
3	PPE	Annex (xii) – Camp and Workshop Management Plan Gentek Ref.: December 28, 2022/227 Gentek Ref.: February 01, 2023/240 Gentek Ref.: February 27, 2023/243 Gentek Ref.: April 04, 2023/266 Gentek Ref.: May 02, 2023/293 Gentek Ref.: May 11, 2023/307	Safety equipment and personal protective equipment are required to be available on the Site at all material times and measures for the effective enforcement of proper utilization and necessary replacement of such equipment and clothing, and all construction plant and equipment used on or around the Site shall be fitted with appropriate safety devices.	To provide all working personnel with a full PPE; monitor that PPE in good condition and personnel wear it	the Contractor's safety engineer will strengthen supervision activities to improve performance and prevent improper wearing or working without PPE.	Contractor's Ref.# CR5-ED-234. Dated: 12.01.2023 Contractor's Ref.# CR5-ED-295. Dated: 08.05.2023	The violation has been partially rectified. These issues will be monitored during future audits

№	Non-compliance identified	SSEMP Number and date of notification	Best Practice Guidelines Applicable	Particular issue and location	Contractor's actions (specify)	Results of Inspection	Status for June 2023
		Gentek Ref.: June 27, 2023/347					
4	Fencing off earthworks sites	<p>Annex (xii) – Camp and Workshop Management Plan</p> <p>Annex (xiii) – Plan for managing material processing, equipment (including construction machinery), and material storage (Material, Equipment, and Storage Management Plan).</p> <p>Gentek Ref.: February 01, 2023/240</p> <p>Gentek Ref.: May 11, 2023/307</p>	All necessary fencing and lights should be provided to protect the public and moving workers in construction zones.	<p>To provide sturdy barriers around the earthworks sites to protect against accidental falls.</p> <p>To install a barrier at the entrance to the bitumen pit.</p>	Some earthworks sites have been fenced off, and the bitumen pit at the production base has been enclosed to prevent falls.	Contractor's Ref.# CR5-ED-295. Dated: 08.05.2023	<p>The violation has been partially rectified.</p> <p>These issues will be monitored during future audits</p>
5	Safety instructions	<p>SSEMP, 5.1</p> <p>Annex (xii) – Camp and Workshop Management Plan</p>	<p>To prepare a training plan for safety and adhere to it.</p> <p>Safety Meetings. Regular safety meetings should be conducted on</p>	To conduct safety instruction for the working personnel on a regular basis.	The Contractor conducts monthly briefings for the workforce, including initial occupational safety briefings.	<p>Contractor's Ref.# CR5-ED-234. Dated: 12.01.2023</p> <p>Contractor's Ref.# CR5-ED-295.</p>	<p>Resolved for this action.</p> <p>These issues will be monitored</p>

No	Non-compliance identified	SSEMP Number and date of notification	Best Practice Guidelines Applicable	Particular issue and location	Contractor's actions (specify)	Results of Inspection	Status for June 2023
		<p>Gentek Ref.: December 28, 2022/227</p> <p>Gentek Ref.: February 01, 2023/240</p> <p>Gentek Ref.: February 27, 2023/243</p> <p>Gentek Ref.: April 04, 2023/266</p> <p>Gentek Ref.: May 02, 2023/293</p> <p>Gentek Ref.: May 30, 2023/328</p>	<p>a regular basis and require attendance by the safety representatives of Subcontractors unless otherwise agreed by the Engineer. In addition, toolbox talks may be envisaged to heighten worker's awareness of specific workplace hazards.</p> <p>Safety Inspections. The Contractor shall regularly inspect, test and maintain all safety equipment, guardrails, working platforms, hoists and other means of access, lifting, lighting, signing and guarding equipment. Lights and signs shall be kept clear of obstructions and legible to read. Equipment, which is damaged, dirty, incorrectly positioned or not in working order, shall be repaired or replaced immediately.</p>		<p>The Contractor's HSE Engineer conducted a safety briefing for all workers, including workers from Pakistan, and will continue to provide regular training to enhance workers' awareness of safety practices.</p>	<p>Dated: 08.05.2023</p> <p>Contractor's Ref.# CR5-ED-323.</p> <p>Dated: 05.06.2023</p>	<p>during future audits</p>
6	Fire safety	SSEMP, 6.4 EMP Annex (xii) - Construction Site	Compliance with all requirements of fire safety in accordance	To organize and equip fire protection shields.	Fire shields are organized and equipped	Contractor's Ref.# CR5-ED-295.	Resolved for this action.

№	Non-compliance identified	SSEMP Number and date of notification	Best Practice Guidelines Applicable	Particular issue and location	Contractor's actions (specify)	Results of Inspection	Status for June 2023
		<p>and Camp Management Plan</p> <p>Annex (xiii) - Materials Processing, Equipment Yard, and Storage Plan</p> <p>Gentek Ref.: February 27, 2023/243</p> <p>Gentek Ref.: April 04, 2023/266</p> <p>Gentek Ref.: May 02, 2023/293</p> <p>Gentek Ref.: May 11, 2023/307</p> <p>Gentek Ref.: June 27, 2023/347</p>	<p>with the Law of the Kyrgyz Republic dated June 7, 2016, No. 78 "On Ensuring Fire Safety."</p> <p>Provide primary fire-fighting equipment at the site, in particular, fire extinguishers and firefighting accessories boards with required equipment.</p> <p>Regularly train workers on the use of firefighting equipment.</p>	<p>To install a shield on the welding site from the refueling storage side.</p>		<p>Dated: 08.05.2023</p>	<p>These issues will be monitored during future audits</p>
7	<p>Dust suppression</p>	<p>Annex (i) - Dust Suppression Plan;</p> <p>Annex (vi) - Quarry Management Plan;</p> <p>Annex (xiii) - Materials Processing, Waste Management, and Storage Plan.</p>	<p>During dry periods and where dust becomes a nuisance, health or road safety issue spraying of all construction sites and transport and access routes at appropriate intervals</p>	<p>To enhance dust suppression measures on all sections of the project road due to dry weather conditions.</p>	<p>The Contractor has increased the frequency of water truck operations along the entire road alignment.</p>	<p>Contractor's Ref.# CR5-ED-295. Dated: 08.05.2023</p> <p>Contractor's Ref.# CR5-ED-323. Dated: 05.06.2023</p>	<p>Resolved for this action.</p> <p>These issues will be monitored during future audits</p>

№	Non-compliance identified	SSEMP Number and date of notification	Best Practice Guidelines Applicable	Particular issue and location	Contractor's actions (specify)	Results of Inspection	Status for June 2023
		Gentek Ref.: February 27, 2023/243 Gentek Ref.: April 04, 2023/266 Gentek Ref.: May 02, 2023/293 Gentek Ref.: May 11, 2023/307 Gentek Ref.: May 30, 2023/328	All trucks used for transporting materials to and from the site should be covered with canvas tarpaulins, or other acceptable type cover (which shall be properly secured) to prevent debris and/or materials from falling from or being blown off the vehicle(s)				
8	Timely conduct of environmental monitoring.	SSEMP, 6.2 – environmental monitoring; SSEMP, 6.5 – Environmental Monitoring Plan Gentek Ref.: June 27, 2023/347	A program of monitoring needs to be timely conducted to ensure that Contractor takes the specified action to provide the required mitigation, to assess whether the action has adequately protected the environment, and to determine whether any additional measures may be necessary.	Provide the results of instrumental monitoring conducted by the air and water quality laboratory, as well as measurements of noise and vibration.	The contractor has provided a report on the results of instrumental monitoring of air and water quality, as well as measurements of noise and vibration.	Contractor's Ref.# CR5-ED-346. Dated: 30.06.2023	Resolved for this action.

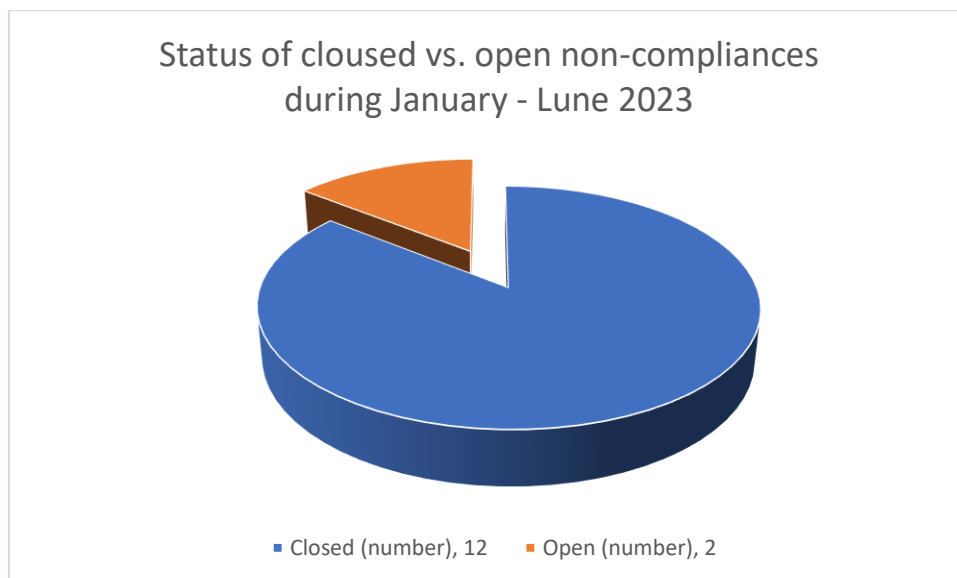


Figure 18 Status of Non-compliances and Corrective Actions.

Table 14 Non-conformances identified during a review mission by ADB representatives, May 2023.

No	Description of non-compliances	Status for June 2023
1	Unsafe acts must be avoided and regular training for workers, including international labor must be provided. Details of the training to be included in SAEMR.	<p>The Contractor's safety engineer has provided safety training to all workers, including Pakistani ones, and will continue to do so regularly to enhance their safety awareness (Contractor's Ref.# CR5-ED-323. Dated: 05.06.2023).</p> <p>On June 5th, the Consultant conducted two training sessions for the Contractor's employees. The details of the training sessions are described in cl. 4.6.3 of the SAEMR.</p>
2	<p>The Contractor must install reflectorized road signs to ensure good visibility.</p> <p>Increase the number of traffic flagmen along routes or potential for road accidents.</p>	The Contractor has renewed old and damaged reflective signs to ensure good visibility (Contractor's Ref.# CR5-ED-323. Dated: 05.06.2023).
3	<p>Increase dust suppression measures at all sections of the project road due to dry weather conditions.</p> <p>Provide information including the number of trucks, trips per truck, the volume of water per day, and source of water in SAEMR.</p>	The Contractor has nine water trucks with a tank capacity of 10 m ³ each for dust suppression. Each truck makes an average of four trips per day and services an average of 5 km of road. The total length of the road where dust suppression is conducted is 43.6 km (from km 89+500 to km 133+100). Dust suppression is not carried out on the 26 km of road where asphalt has already been laid. Water sources are located at the following km points: 91 km, 106 km, 119 km, 121 km, 125 km, and 132 km. During the summer

№	Description of non-compliances	Status for June 2023
		<p>months, the number of trips for each water truck will be increased.</p> <p>(Contractor's Ref.# CR5-ED-323. Dated: 05.06.2023).</p>
4	<p>Ensure the contractor's environment and health and safety specialist are permanently present on-site and provide daily toolbox talk to workers, particularly those operating heavy equipment and working in nearby villages.</p>	<p>The Contractor will continue strengthening management to ensure that HSE engineers are always on-site, communicating with workers regularly.</p> <p>(Contractor's Ref.# CR5-ED-323. Dated: 05.06.2023).</p>

Overview and Description of the Problems Observed during the Current Period.

88. During the reporting period, the focus was on the following issues:

- The road construction work has been carried including earthwork, construction of structures and pavements; production of asphalt concrete mix, concrete and crushed aggregate fractions, cut excavation, embankment, completion of installation of previously started culverts, as well as laying of new culverts and other relevant activities.
- Key personnel list has been updated and submitted by the Contractor.
- Monthly inspections of environmental safeguard have been conducted along the project area. Findings, non-compliant with the criteria established for the construction project were communicated to Contractor for corrective actions. During the reporting period, the Contractor has followed the requirements of the contract and technical specifications on environmental performance. Most findings were closed and evidences provided. However, as it was described above in the report a fact of recurrences of a range of non-compliances were frequently observed. It is suggested to undertake a risk-based approach to prevent this gap in the future and continually improve performance.
- Insufficient fire safety, waste utilization activities, and housekeeping; oil leaks on the soil in the Camp/production site area, missing of PPEs or parts of it, safety performance, dust suppression are the measures an improvement strongly suggested.

Summary of Observed Issues

89. Monthly inspection of the project site was conducted, based on the results of the inspection, notifications have been addressed for correction of non-compliances. Recommendations on mitigation measures were proposed to eliminate or reduce risks.

Table 15: Summary of Issues Tracking Activity for Current Period

Total Number of Issues for Project	14
Issues Opened This Reporting Period	2
Issues Closed This Reporting Period	12
Percentage Closed Issues	85 %

3.4 Trends.

90. Analysis of trends in relation to non-compliances observed during the previous and current audits suggested a weak environmental and safety process performance toward occurrences of non-compliances. There are continually recurrences of the some non-compliances recorded. As seen from the table 13 the same findings are observed during following audits conducted by the Consultant's environmental specialist. These recurrences are particularly related to fire safety, trainings, tidiness and timely utilization of waste, wearing of full PPE by personnel and some other. The contractor shall understand and be consistent in meeting the environmental safeguard requirements. Preventive controls are to be applied to eliminate these non-compliances before they are occurred. Thus, it is strongly suggested to increase focus on environmental compliance performance.

Table 16: Trends on issues observed, 1-2 Q 2023

Quarterly Report No	Total No of Issues	% issues closed	% issues closed late
1	8	100	0
2	14	85	15
ADB & PIU review mission	4	100	0

Comment: Re-occurred individual findings are taken into account in the table.

91. There was recurrence of non-compliances observed during the reporting period. The recurrences were related to waste management, failure to wear personal protective equipment, housekeeping and dust suppression. These compliance actions shall be monitored throughout the further inspections/audits.

3.5 Unanticipated Environmental Impacts or Risks.

92. The risks were identified and covered in the SSEMP document, no new risks have been identified during the reporting period.

4 RESULTS OF ENVIRONMENTAL MONITORING.

4.1 Overview of Monitoring Conducted during Current Period.

93. Environmental monitoring of noise, vibration, surface water quality, and air quality have been conducted during three following months in June 2023.

94. Instrumental measurements of noise and vibration were carried out by commercial laboratory ProfiLab LLC; air quality and surface water quality were evaluated by the laboratory of chemical-analytical research under the Ministry of Health of the Kyrgyz Republic. Dates of sampling and analyses are shown in table 17.

Table 17: Instrumental Monitoring Dates

№	Monitoring name	Date of monitoring	Date analyses conducted
1	Noise and Vibration		1-June-23
2	Surface Water Quality	1-June-23	2-8 June, 2023
3	Air Quality	1-June-23	2-6 June, 2023

95. Outcomes of instrumental monitoring measurements implemented during the reporting period are presented in sections 4.1.1. to 4.6 below in the report; original laboratory reports are attached in Annex 2.

4.1.1 Noise and Vibration Impact Monitoring.

96. The noise and vibration instrumental tests were implemented by the specialists of the ProfiLab LLC laboratory. Noise and vibration levels were measured at 4 points along the planned project road in the vicinity of settlements:

Point 1. Tugol-Sai v., west side of the Kutman store, km 151+000;

Point 2. Tugol-Sai v., the north-eastern side of the Asphalt plant and Crusher, km 149+000;

Point 3. Kuyruchuk v., near the Azamat store, km 144+000;

Point 4. Jumgal v., near the school, km 129+400.

97. Noise and vibration measurements were carried out with the Ecophysics 110A digital vibrometer calibrated in accordance with the standard. Three measurements were taken at each point with an interval of approximately 2 hours between measurements.

98. Noise measurements were carried out in accordance with GOST 23337-2014 "Noise. Methods for measuring noise in the residential area and in the premises of residential and public buildings." GOST 20444-2014 "Traffic flows. Methods for determining the noise characteristic."

99. Vibration measurements were carried out in accordance with GOST 31319 "Vibration. Measurement and evaluation of human exposure to whole-body vibration."

100. The outcomes of instrumental noise measurements showed that at the time of the measurements, the noise levels at points near the road in June varied from 50 dBA to 61 dBA.

101. The outcomes of instrumental measurements of vibration from traffic flow on road showed levels between 78 dB to 96 dB in June. The detailed results of noise and vibration impact monitoring are given in Annex 2.



Table 18: Instrumental Monitoring on Project Road

4.1.2 Surface Water Quality Monitoring.

102. Sampling and test of surface water quality was carried out by specialists from the laboratory of chemical-analytical studies of the Department of Disease Prevention and the State Sanitary and Epidemiological Surveillance under the Ministry of Health of the Kyrgyz Republic. Measurements of water transparency, biochemical oxygen demand (BOD₅), the content of oil products and suspended solids were carried out during the reporting period.

103. The samples were taken at 3 points:

Point 1. Water from the Tugol-sai river, RHS

Point 2. Water from the irrigation canal at km141+874 Kuyruchuk village

Point 3. Water from the daily pondage basin at km 140+600 Kuyruchuk village

104. Laboratory tests were carried out in accordance with the "Rules for the Protection of Surface Waters of the Kyrgyz Republic" of the Government of the Kyrgyz Republic dated March 14, 2016, No. 128 and the hygienic standards "Maximum allowable concentration limits (MAC) for chemicals in the water of water bodies for household-drinking and utility needs of public", dated April 11, 2016, No. 201.

105. The results of the chemical analysis of water samples showed exceedances of the maximum permissible concentrations (MPCs) for the domestic and cultural category for suspended solids in the Tugol-Sai River by 4.8 times (3.6 mg/dm³), in the irrigation canal by 6.1 times (4.6 mg/dm³), and in the pond by 6.4 times (4.8 mg/dm³). However, the other parameters were within the established norms. The outcomes of surface water monitoring are given in Annex 2.

4.1.3 Air Quality Monitoring.

106. Sampling and tests of air quality was carried out by specialists from the Laboratory of Chemical Analytical Research of the Department of Disease Prevention of the State Sanitary and Epidemiological Surveillance under the Ministry of Health of the Kyrgyz Republic. Measurements of dust, nitrogen dioxide, sulfur oxide, and carbon monoxide were performed during the reporting period.

107. The samples were taken at 4 points:

Point 1. Tugol-Sai village, on the west side of the Kutman store, km 151+000;

Point 2. Tugol-Sai village, north-eastern side of the Asphalt plant and Crusher, km 149+000;

Point 3. Kuyruchuk village, near the Azamat store, km 144+000;

Point 4. Jumgal village, near the school, km 129+400.

108. Laboratory tests were carried out in accordance with the guidelines for the control of atmospheric pollution. The concentrations of the investigated pollutants in the ambient air did not exceed the maximum permissible concentrations (MPCs) at any stage of monitoring. The monitoring outcomes are presented in Annex 2.

4.2 Trends.

109. The rounds of instrumental tests (monitoring of noise, vibration, atmospheric air and water) have been carried out during the reporting period (in June 2023).

110. Equivalent noise levels near the road in the daytime amounted to 50 - 61 dBA, which was in line with sanitary standards.

111. Vibration levels were below the maximum permissible levels and ranged from 78 dB to 96 dB.

112. Generally, there were not negative trends observed in the measured parameters of surface water, the only exceptions were elevated concentrations of suspended solids in some samples of surface water.

113. Air quality parameters were within MAC levels for all pollutants.

4.3 Summary of Monitoring Outcomes.

114. The sampling and analyses of noise, vibration, surface water quality, and ambient air quality were carried out in the assigned locations in June. The reports with detailed results of monitoring studies are presented in Annex 2.

115. Noise and Vibration Impact Monitoring: Instrumental noise measurements showed that during monitoring, the noise levels at points near the road in June were diapason from 50 to 61 dBA (i.e., below the daily allowable level set at 70 dBA). The overall vibration level from traffic on the project roads was below the acceptable level (108 dB) and ranged from 78 dB to 96 dB.

116. Surface Water Quality Monitoring: All parameters measured in surface water samples taken at assigned points were laying within the MAC levels. Exception were the concentrations of suspended solids in all three points (r. Tugol Say - 3,6 mg/dm³; the irrigation channel - 4,6 mg/dm³; the pond basin - 4,8 mg/dm³; the MAC was established as 0.75 mg/dm³). Increase in suspended solids was also recorded in monitoring carried out in the previous reporting period, 2nd half of 2022.

117. Air Quality Monitoring: The Concentrations of pollutants in the atmospheric air were within the MAC at all monitoring stages.

4.4 Material Resources Utilisation.

118. China Railway No.5 performs water consumption for dust suppression using previously agreed and approved water sources (from the Jumgal, Tugol-Sai, Karasuu and Kyzartsuu rivers). The use of electricity, water and other materials were not reported for monitoring in SSEMP.

4.5 Waste Management.

119. The Contractor developed the Waste Management Plan in the SSEMP describing the project's waste management activities.

120. Solid household waste generated on the territory of the contractor's and subcontractors' camp is collected in the waste bins located in the designated fenced area and disposed using local disposal resources in accordance with the contract signed between contractor and Tugol-Saysky Aiyl Okmotu (Order No. 13b).

121. Wastewater is collected in the septic tanks and moved to Balykchy for proper treatment and utilization.

122. Observations of not timely utilization of domestic waste from the territory of Camp were made on several occasions. There were cases of accumulation of construction waste in the production base.

123. Reinforced concrete construction waste is generated during the dismantling of bridges and culverts. The contractor shall pay attention so that this type of waste as well as old asphalt are not accumulated in the areas which have not been designated for this purpose.

4.6 Health and Safety.

4.6.1 Community Health and Safety.

124. The contractor has appointed the new HSE engineer - Uzbekov Kanatbek, and the traffic safety engineer Kozhomkul Abylabekov. There is no permanent medical staff involved in the project; in case of emergency or if any medical treatment is required the local medical facility in vicinity of the camp has been contracted for provision with healthcare services.

125. There were no cases of road traffic or other accidents reported that led to serious consequences for the health of the local population during the reporting period.

126. Consultant's Road Safety Engineer, Bolotbek Toktomushev undertook monthly visits of the project road and construction sites to insure safety measures are followed. Urgent actions were closed immediately, actions requiring longer time to fulfill were communicated to Contractor in a formal way.

127. Road maintenance activities are fulfilled by the Contractor during the year. The Contractor has assigned on-duty personnel to perform activities to ensure appropriate safety measures have been taken on the road during the winter season. As part of this plan, Mr. Sapar Tentiev was identified as the Road Maintenance Specialist responsible for winter road maintenance. The anti-icing inert materials such as gravel sand mix and salt sand mix have been applied over the project roadway as the main road safety operation during the cold season. In addition, the road construction equipment has been maintained to ensure the maximum serviceability.

128. Dust formation is a persistent issue during road construction, especially in dry weather. Anthropogenic impact to ambient environment coming from increased levels of particle matters due to transportation and using of sand and sand-gravel compounds. Elevated levels of dust affect businesses of the local community, it settles on shops, cafes, agricultural products and crop yields. Elevated levels potentially might lead to traffic accidents due to poor visibility, to allergy and respiratory diseases in humans, water quality pollution.

129. Mitigation measures applied for minimization of impact from elevated levels of dust during the project work were: water trucks were suppressing dust by watering roads, special intensity of the process applied during the dry and hot weather; the speed of vehicles was limited as by signs obliged it all along the road without pavement; regular technical inspection of vehicle involved to prevent potential exceeding the maximum allowable concentrations of pollutants.

4.6.2 Worker Safety and Health.

130. The Contractor prepared and submitted the occupational health and safety plan on February 10, 2022.

131. There were no accidents, incidents that led to problems with the health and safety of employees, as well as incidents related to downtime during the reporting period.

132. Contractor has improved first aid awareness of the assigned personnel and provided the first aid kits in the working area

133. Contractor shall pay more attention toward improving safety performance in the company by conduction safety inductions, mandatory trainings, awareness sessions, knowledge check exercises.

134. All employees working at sites shall be provided with full PPE (coverall, helmets, boots, welding shield and apron, gloves, earmuffs and goggles).

135. Monthly check of critically safety equipment to be carried out (fire extinguishers, sand box and other fire safety equipment, first aid kits etc) by trained personnel.

136. A clean and tidy workplace and work territory help combat a range of different threats. Contractor shall make sure that their safety performance meet compliance requirements established by the Law of the Republic of Kyrgyzstan, and specified in the occupational health and safety plan and other relevant project documents.

4.7 Training.

137. The Contractor's Occupational Health and Safety (OHS) training program, as outlined in the OHS Management Plan (January 2022), consists of the following components:

- Initial orientation to familiarize all workers and staff with OHS, conducted within the first week of their assignment.
- Periodic OHS training sessions held at least once every six months.
- Monthly regular meetings to discuss OHS matters.
- Regular inspections to test, maintain, and inspect safety equipment, such as fire shields, fire extinguishers, barriers, work platforms, winches, ladders, lighting, road signs, personal protective equipment (PPE), and other safety devices.

138. The introductory orientations are conducted for each new employee, and records of their completion are documented in the "Register of Introduction Briefings on Occupational Safety."

139. On April 19, 2023, the Contractor's Safety Engineer conducted an OHS briefing for all workers, including workers from Pakistan, covering the following topics:

- Safety requirements for earthworks.
- Safety requirements for the installation of reinforced concrete structures.



Figure 19: Conducting Occupational Health and Safety Briefing (April 2023)

140. On May 18, 2023, the Contractor's Safety Engineer conducted an occupational health and safety briefing for all workers, including workers from Pakistan, covering the following topics:
- Safety requirements during welding operations
 - General aspects of electrical safety at the production base, construction sites, and camp
 - Rules for equipment and material storage, as well as guidelines for collecting and disposing of waste equipment and materials.



Figure 20: Conducting Occupational Health and Safety Briefing (May 2023)

141. On June 5, 2023, the Environmental Specialist conducted a refresher briefing for the Engineer on the following topics:
- First aid procedures
 - Fire safety measures.



Figure 21: Conducting Occupational Health and Safety Briefing (June 2023)

142. The contractor's employees were provided with brochures on the topics of briefing.
143. The protocol of the Engineer's briefing is presented in Appendix 3.

5 SSEMP FUNCTIONING.

5.1 SSEMP Review.

144.The SSEMP was reviewed and approved in December 2021. The document describes the measures proposed under the Project to prevent, minimize or compensate for adverse environmental impacts arising from the Project.

145.The Contractor, represented by Nurdinov Nurlan, responsible for environmental protection, is taking measures to mitigate the consequences potentially arising from construction work. The Consultant's specialists regularly implement the inspections to monitor environment safeguard activities and whether they are following requirements of SSEMP.

146.The review of the Contractor's SSEMP and observations on processes while visiting the project area allowed to highlight recommendations. These recommendations are presented in paragraph 7.2 below.

6 GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT.

6.1 Good practice.

147.Mitigation measures described in the SSEMP are sufficient. Example of a good practice is adaptation of the plan and increasing intensity of dust suppression activities on construction work sites due to dry and hot weather in summer. The plan is presented in Annex 1. In addition, rules for safe road maintenance have been developed, and a road maintenance engineer has been appointed to maintain the road during the winter.

148.It is recommended to monitor non-compliance actions identified during inspections/audits and prevent their reoccurrence. Contractor should be more responsible toward health and safety protection of workers and eliminate potential risks and hazard.

6.2 Opportunities for Improvement.

149.The Contractor is responsible for environmental compliance, health and safety in working area. Environmental awareness sessions shall be provided on prevention of pollution and contamination from construction activities. The safety mandatory trainings such as safety behavior at workplace, use firefighting equipment, first aid is to be provided and followed up.

150.It is recommended to create emergency response team.

151.Internal inspections & audits should be regularly conducted in order to insure sustainability of performance and prevention of re-occurrences.

7 SUMMARY AND RECOMMENDATIONS.

7.1 Summary.

152. The contractor has obtained all the necessary permits from local authorities for the use of quarries, dumps, and the designated land plot for the planned production facility and construction camp at km 106+300.

153. Relevant permits have also been received from the local authorities for the production base and camp sites.

154. Reclamation has not been carried out at the 12 designated quarries, as these quarries will continue to be used until the completion of all construction work on the project road section.

155. Increased dust formation observed during heavy traffic and due to the heavy-duty vehicles traffic in the dry weather, in view of this, the intensity of dust suppression was increased to 10-12 water tanks in summer. A new dust suppression plan has been prepared and implemented. In winter the number of water trucks used is 3.

156. Archaeological excavation activities at sites of historical and cultural heritage were implemented following the Protection Zone Plan. Results described in the relevant sections of the Semi-annual Environmental Monitoring Report, January-June 2022 "CAREC Corridors 1 and 3 Connector Road, Section 2B Epkin-Dyikan [Bashkugandy], Km: 89+500 – 159+200 project" and available for readers via the ADB internet site.

157. During the reporting period, one stage of instrumental monitoring was conducted at specified and approved locations (in June).

- Equivalent noise levels along the road were within the established sanitary norms (70 dBA), with actual values ranging from 50 to 61 dBA.
- Vibration levels were below the maximum permissible levels.
- Certain elevated levels of suspended solids were detected at all three sampling points in June, although all other parameters were within the permissible limits. The concentrations of suspended solids in June were 3.6 mg/dm³ in the Tugol-Say River, 4.6 mg/dm³ in the irrigation canal, and 4.8 mg/dm³ in the pond, all exceeding the permissible limit of 0.75 mg/dm³.
- Air quality parameters for all pollutants were within the permissible limits.

158. Environmental and safety performance shall be improved in a way to prevent recurrences of non-compliant actions previously identified and closed.

159. Road safety measures undertaken are to be constantly followed up.

7.2 RECOMMENDATIONS.

160. The Contractor is required to develop an internal system of corrective and preventive measures and monitor the effectiveness of corrective measures taken to prevent the recurrence of violations, with particular attention to violations related to personal protective equipment (PPE).

161. As per Appendix (IX) of the SSEMP, a contract shall be concluded with the village administration for the removal of construction and domestic waste from the new temporary camp and construction site (km 106+300).

162. Under cl. 5.1 and 6.1 of the SSEMP, a training plan on safety and environmental protection should be prepared and followed. It is recommended to include training for staff on general environmental issues (familiarization with all sub-plans of the SSEMP) and issues related to occupational health and safety.

163. Under cl. 7.4 of the SSEMP, lectures on HIV/AIDS precautions should be conducted for the Contractor's personnel jointly with medical personnel from the local hospital. Information materials on HIV prevention and sexually transmitted infections, such as brochures, booklets, and posters in Kyrgyz and Russian languages, should be made available in the construction camps (km 106+300 and km 148+630).

164. Under cl. 4 of Appendix (XIV) "Emergency Management Plan" of the SSEMP, informational materials (posters) with contact details of all emergency services should be provided in Kyrgyz and Russian languages in the construction camps (km 106+300 and km 148+630). It is also recommended to establish an emergency response team.

165. Under cl. 6.4 of the SSEMP, the Contractor should prepare a tree planting plan indicating the number of trees to be cut down in specific areas, identify specific areas with the village administration for planting seedlings, complete the selection and procurement of trees from local forestry enterprises, and develop planting and care processes for seedlings and other related preparations.

166. As per Appendix (VI) of the SSEMP, the Contractor should prepare a plan for the restoration of exhausted quarries in completed sections.