

# Semi-annual Environmental Monitoring Report

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Semi-annual Environmental Monitoring Report  
July to December, 2021

Kyrgyz Republic:

## **CAREC Corridors 1 and 3 Connector Road, Section 2B Epkin-Dyikan [Bashkuugandy], 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
PIG	- Projects Implementation Group
m	- Meter
km	- Kilometer
KR	- Kyrgyz Republic
MPC	- Maximum permissible concentration
MAL	- Maximum Acceptable Level
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
MoNRE and TS 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 is a semi-annual environmental monitoring review of the CAREC Corridors 1 and 3 Connector Road Section 2B Epkin (Km: 89+500) - Dyikan (Bashkuugandy) (Km: 159+200) Project.

2. This Report is a semi-annual overview of environmental monitoring for the period from July to December 2021 as a part of improvement project of the CAREC Corridors 1 and 3 Connector Road Section 2B Epkin (Km: 89+500) - Dyikan (Bashkuugandy) (Km: 159+200) Project.

### 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 (Bashkuugandy) (Km: 159+200) Project.

4. The CAREC Corridors 1 and 3 (Epkin Road Section (km 89 + 500) - Dyikan (Bashkuugandy) (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 with termination of the contract on December 1, 2020, concluded between the MoTR KR and the contracting company Todini Costruzioni Generali SPA, according to the

results of a new tender, the new company "China Railway No.5" was selected as a Contractor to perform construction work on the project section. The contract with the new contractor was signed on September 23, 2021. At the time of preparation of the report, the Notice to commence for start work has not yet been issued, the advance payment process is underway and the site has been handed over to the contractor for winter maintenance of the road.

8. Due to these organizational changes, since December 2020, construction work has not been carried out at the project site. By decision of the MOTC, in agreement with the ADB, for the maintenance of the road until a new contractor was identified, the maintenance of the road was carried out by DEP-24. DEP-24 carried out work on the maintenance of the road, in particular: dust suppression; installation of temporary road signs; clearing the road and backfilling the road in winter. The new Contractor has not started carrying out the project work yet but preparatory work is underway in this direction. During the reporting period, these works included the maintenance of the road, in order to ensure traffic safety. In particular, for this purpose, work was carried out to backfill new culverts, which were started by the previous contractor, and install temporary road signs. The contractor carried out the removal of the remains of old asphalt and unnecessary material located on the roadway. The contractor is also undertaking preparatory work to start the installation of an asphalt plant and a crushing and screening plant for the processing of inert materials.

9. This Report contains information on the current status of activities related to the prevention impacts on the environment. It should be noted that the observations and mitigation measures presented in this report are mainly based on a single visit-inspection of the project road section conducted by international environmental specialist, Nargiz Garajayeva, and national environmental specialist, Talantbek Zhumaliev, in November 2021. During this visit, quarries, spoil areas, environmentally sensitive areas, sites of monitoring measurements of water, air, noise and vibration, historical and cultural heritage sites (HCHS), as well as the areas with trees that are planned to be felled during construction works were examined. The planned Contractor's production base and temporary camp were visited, safety and traffic management were observed for non-compliances.

## **2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES.**

### **2.1 Project Description.**

#### **2.1.1 Project Section Location and Basic Design.**

10. The project road Epkin (89 + 500 km) - Dyikan (Bashkuugandy) (159 + 200 km) is a 70-kilometer highway from east to west. This section follows the existing road to Bashkuugandy (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.

11. 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 Bashkuugandy 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.

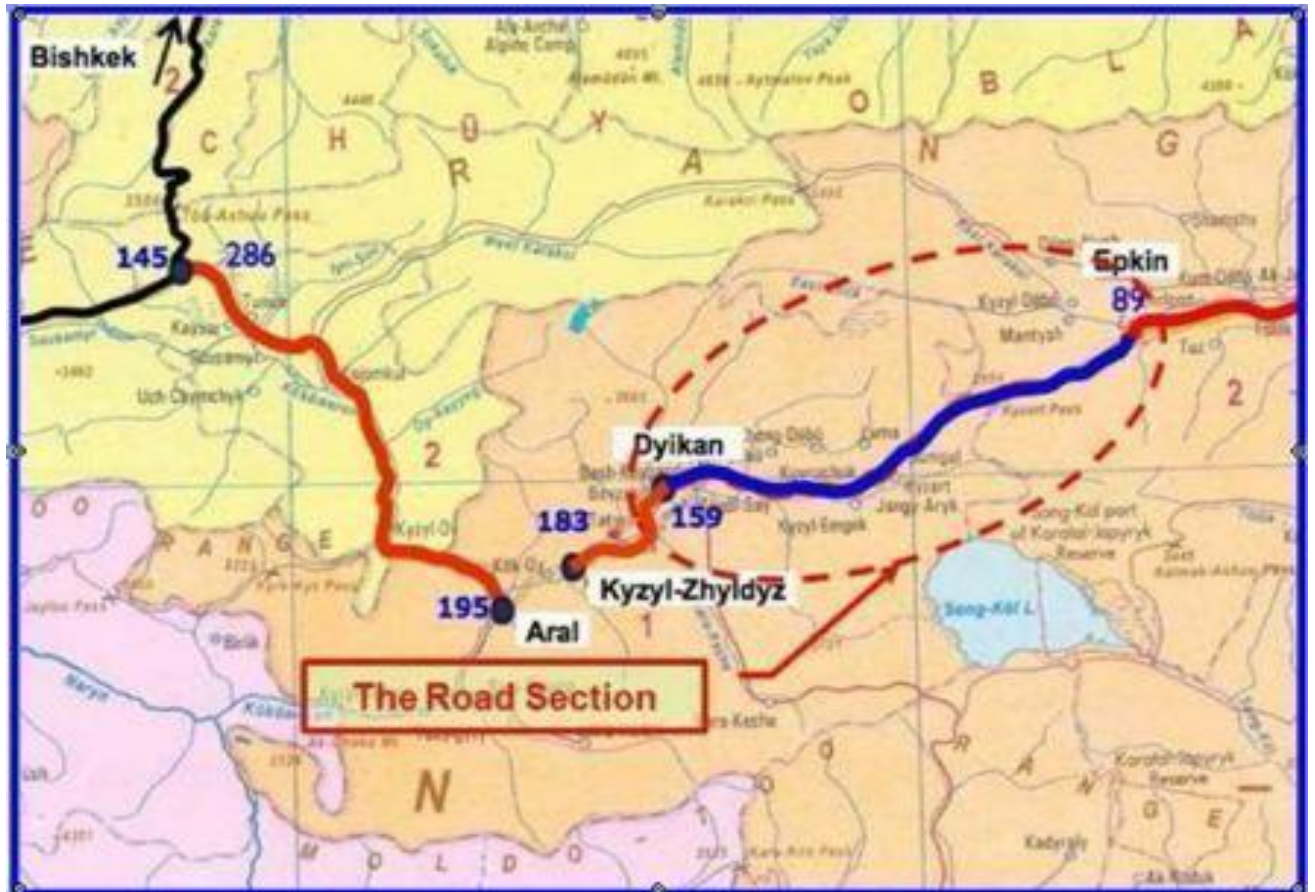


Figure 1. Map of Epkin-Dyikan (Bashkuugandy) Location.

Table 1. Names of Villages along the Project Road Section.

Region	District	Village	Section/km
Naryn	Kochkor (western part)	Epkin	Km 89+500 – Km 159+200
	Jumgal	Jumgal	
		Kuiruchuk	
		Tugol-Sai	
		Bashkuugandy	

12. 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.

13. 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.

14. 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.

15. 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.

16. Details of the designed project road section:

- To restore and lay the project road to Technical Category II from Epkin (km 89) to Bashkuugandy (km 159) in accordance with the National Standard of Kyrgyzstan 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.

17. 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

18. 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-Bashkuugandy) 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.

19. 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.



20. 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 m<sup>3</sup>;
- Binder with 9 cm thickness - 62225 m<sup>3</sup>;
- Wearing layer with 6 cm thickness – 41738 m<sup>3</sup>;
- Base, with 20 cm thickness – 148 771 m<sup>3</sup>;
- Lower shoulder with 20 cm thickness – 70 648 m<sup>3</sup>;
- Upper shoulder with 15 cm thickness – 61301 m<sup>3</sup>
- Subbase with 25 cm thickness – 361 612 m<sup>3</sup>;

**Table 2. Project Details.**

from	to	Total Road Length	
Km 89+500	Km 159+200	69.7 Km	
Excavation to dump	406 818 m <sup>3</sup>	Unsuitable material from cuts	269 291 m <sup>3</sup>
		Rock material from cuts	136 860 m <sup>3</sup>
		Unsuitable demolition material	667 m <sup>3</sup>
Embankment	533 250 m <sup>3</sup>	Common material from cuts	174 697 m <sup>3</sup>
		Rock embankment from cuts	9 100 m <sup>3</sup>
		Common material from the quarry	186 663 m <sup>3</sup>
		Selected material from the quarry	157 290 m <sup>3</sup>
		Common material for road signs and backfill	5 500 m <sup>3</sup>
Subbase C grade, 0/40 fraction	364 667 m <sup>3</sup>	Thickness on main road = 25 cm	361 612 m <sup>3</sup>
		Thickness on ramps = 25 cm	3 055 m <sup>3</sup>
Lower shoulder C4 grade, 0/70 fraction	71 063 m <sup>3</sup>	Thickness on main road = 20 cm	70 648 m <sup>3</sup>
		Thickness on ramps = 15 cm	415 m <sup>3</sup>
Upper shoulder C10 grade, 0/40 fraction	62 131 m <sup>3</sup>	Thickness on main road = 15 cm	61 301 m <sup>3</sup>
		Thickness on ramps = 5 cm	830 m <sup>3</sup>
Base I grade, 0/30 fraction	149 681 m <sup>3</sup>	Thickness on main road = 20 cm	148 771 m <sup>3</sup>
		Thickness on ramps = 15 cm	910 m <sup>3</sup>
Asphalt pavement	103 963 m <sup>3</sup>	Binder Thickness = 9 cm	62 225 m <sup>3</sup>
		Wearing layer Thickness = 6cm	41 738 m <sup>3</sup>

Drainage	Open drain		Closed PVC drain		Closed drain, non-PVC	
	Excavation for 20 258 m <sup>3</sup>		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 = 1.0 m	D = 1.0 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.

21. 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. Representatives involved in the organization and implementation of the project work are shown in Tables 4 and 5.

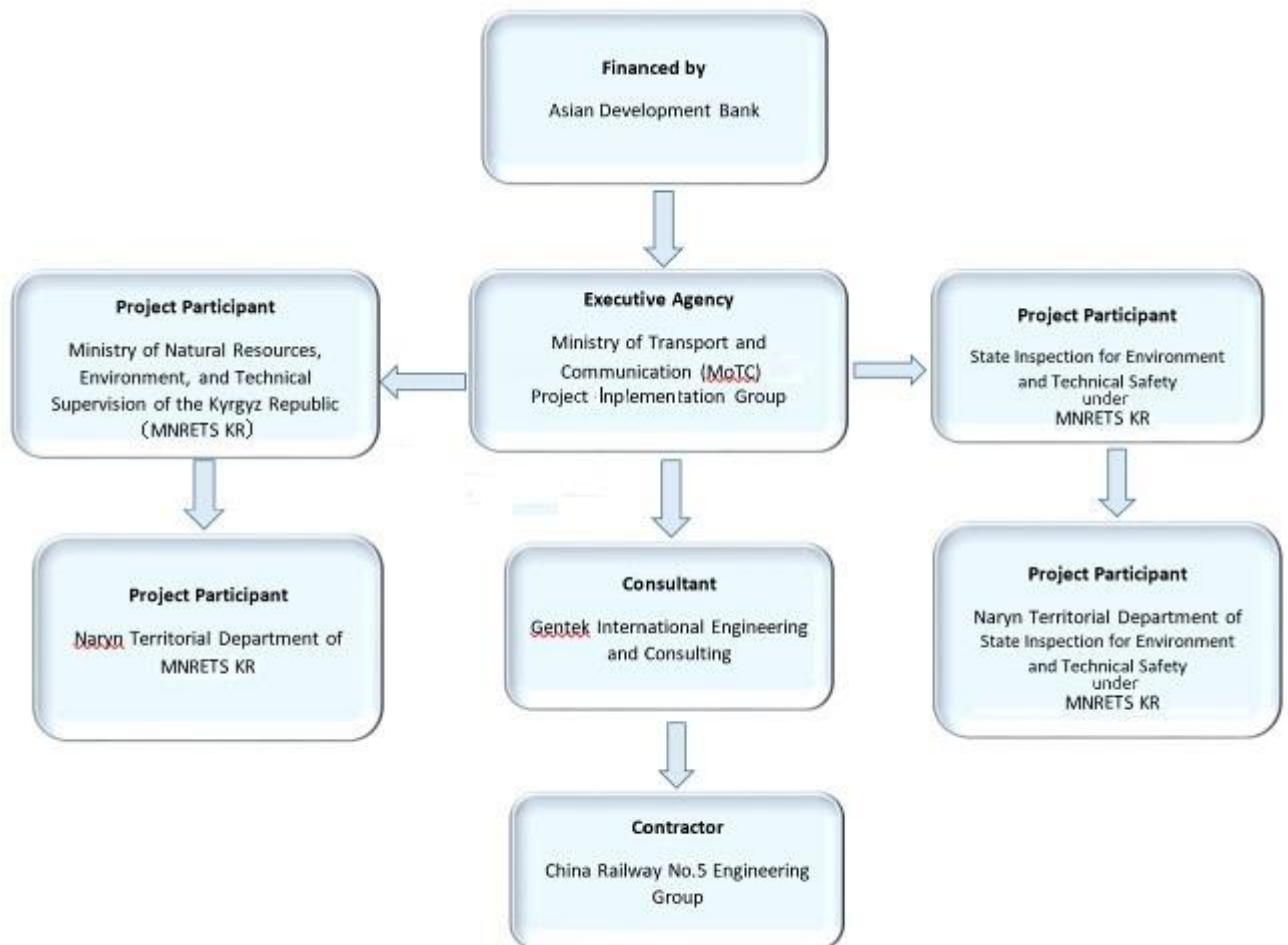


Figure 2. Project Organizational Structure and Management.

**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	<a href="mailto:npajarillaga@adb.org">npajarillaga@adb.org</a>
2	ADB	National Environmental Consultant	Sultan Bakirov	<a href="mailto:Sbakirov.consultant@adb.org">Sbakirov.consultant@adb.org</a>
3	IPIG MoTC KR	Environmental Specialist	Abdygulov Asylbek	<a href="mailto:asylbeka@piumotc.kg">asylbeka@piumotc.kg</a>
4	Gentek Consulting Company	International Environmental Specialist	Garajayeva Nargiz	<a href="mailto:nargiz.garajayeva@gmail.com">nargiz.garajayeva@gmail.com</a>
5	Gentek Consulting Company	National Environmental Specialist	Zhumaliev Talantbek	<a href="mailto:take0978@mail.ru">take0978@mail.ru</a>
6	Contracting company: China Railway No. 5 Engineering Group Co., Ltd	Environmental Specialist	Nurlan Nurdinov	<a href="mailto:nnurdinov78@mail.ru">nnurdinov78@mail.ru</a>

**Table 4. List of Consultant's Employees.**

<b>International Employees</b>	
Senior Highway Engineer / Team Leader	Selcuk Mutlu
Pavement and Materials Engineer	Ersoz Yamak
Structural Engineer	Sadi Numan
Road Safety Engineer	Ercan Duymaz
Social development and Resettlement Specialist	Saim Tuzlu
Contract Specialist	Rufat Mammadov
Environment Specialist	Nargiz Garajayeva
<b>National Employees</b>	
Highway Engineer/Deputy Team Leader	Zheksheev Mirislan Sarychalovich
Pavement and Materials Engineer	Ayazbekov Melis Shakenovich
Structural Engineer	Moldogaziev Nasyr Takishovich
Quality Assurance Engineer	Orozbekov Nurlan Munderovich

Quantity Engineer	Kaparov Saadalbek Abdyldaevich
Road Safety Engineer	Toktomushev Bolotbek
Social and Resettlement Specialist	Omorbekov Azamat
Environment Specialist	Zhumaliev Talantbek Nurgazievich

**Table 5. List of key employees of the Contractor.**

#	Position	Professional qualifications	Personnel
<b><i>International Employees</i></b>			
1	Project Manager	Road and Bridge Engineering	Zhang Liang
2	Civil Engineer	Survey Engineering	Zhan Shishan
3	Civil Engineer	Transportations and Civil Engineering	Du Moufu
4	Structural Engineer	Road and Bridge Engineering	Li Hong
5	Pavement/materials Engineer	Testing Engineer	Li Yong
6	Quality Control/Assurance Engineer	Civil Engineering	Qian Xiang
7	Equipment Plant Engineer	Mechanic Engineering	Wang Haijiang
<b><i>Local Employees</i></b>			
8	Environment, Health, & Safety Specialist	Ecology and Nature Management	Nurdinov Nurlan
9	Social Development and Public Relations Specialist	Road Engineering	Kamchybekov Maksat
10	Archaeologist	History & Archaeology	Soltobaev Orozbek Azekovich

22. 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 No.5 Engineering Group Co. Ltd.
Road Section:	89 + 500km - 159 + 200km, total length 70km
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.

23. Relevant institutions working with the project include:

- Ministry of Finance of the Kyrgyz Republic (MF),
- Ministry of Transport and Communication of the Kyrgyz Republic (MoTC)
- Investment Projects Implementation Group (IPIG) under MoTC,
- Ministry of Energy and Industry of the Kyrgyz Republic (MoEI)
- Ministry of Natural Resources, Environment and Technical Supervision of the Kyrgyz Republic (MoNRETS)
- Department of Disease Prevention and State Sanitary and Epidemiological Surveillance of the Ministry of Health of the Kyrgyz Republic (DDPSSSES).

24. 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. IPIG works under MoTC and performs tasks assigned by the MoTC.

25. MF KR is the authorized government body responsible for coordinating with ADB and other donors regarding foreign aid issues.

26. MoNRETS 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.

27. 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.

28. 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.

29. Due to the change of the Contractor responsible for the project road construction, the work was temporarily suspended and the takeover process with the previous Contractor was under way in the fourth trimester. Consequently, during the period July-December 2021, no major construction work was carried out on the project site. During the reporting period, the new contractor carried out work on the maintenance of the road.

30. By prior agreement, prior to receiving the notice to commence work, the new Contractor (China Railway No.5) started (from 01.10.2021) to carry out work on the maintenance of the existing road, in order to ensure road safety. In particular, work was carried out on the backfilling of new culverts, which were started by the previous contractor, and the installation of temporary road signs. The contractor carried out the removal of the remains of old asphalt and unnecessary material located on the roadway, dust suppression was carried out. Works on the installation of a pedestrian barrier (speed bumps) in Jumgal and near the school were carried out at the request of local people.





Figure 3. Work on the project area.

31. The contractor involved in the maintenance of the road: 27 people (3 - foreign personnel; 24 - local personnel); and 18 units of equipment (7 - water carriers; 2 - graders; 5 - dump trucks; 2 - loaders; 2 - excavators).

32. Table 7 provides information on the last work done (by the previous contractor) on the project site for 2019-2020.

Table 7. Scope of the main work performed for 2019-2020.

Description	Unit	Quantity			%	
		By BoQ	Actual	Remaining	Actual	Remaining
Grubbing and Clearing	ha	80	36.81	43.19	46%	54%
Existing asphalt pavement break up and removal	m <sup>3</sup>	18 877.00	<b>8 044,00</b>	10 833.00	42%	58%
Cut Excavation	m <sup>3</sup>	406 818.00	371 400.00	35 418.00	91%	9%
Embankment	m <sup>3</sup>	533 250.00	<b>288 250,00</b>	245000,00	44%	56%
Subgrade	m <sup>3</sup>	364 350.00	90 000.00	274 350.00	25%	75%
Subbase	m <sup>3</sup>	361 612.00	77 000.00	284 612.00	21%	79%



33. Since December 2020, the project road section has been handover to RME-24 for winter maintenance. Since April 2021, this organization carried out some maintenance work on the road (cleaning the road and backfilling in the winter, carrying out current repairs of the road and structures, installing temporary road signs), watering the site (dust suppression) in hot and dry weather, as well as monitoring the presence and condition of road signs. Since October 2021, the above works have been handover to China Railway No.5.

### 2.3.2 Quarries.

34. On the project road (Epkin-Dyikan section, km 89-159), 13 sites were allocated for quarries. The former Contractor received all the necessary permits/approval from local authorities, and the State Agency of Environmental Protection and Forestry (SAEPF). 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.

35. In 2020 at the beginning of the development of quarry No. 11 (km. 145+800, Kuyruchuk village), the Consultant Engineer determined the inadequate quality of the contained inert material (high content of clay substances) making the material from this quarry unsuitable for road construction due to the potential for frost heave, therefore it was decided not to carry out a full-scale development of this quarry. The Contractor carried out leveling of this section. MoTC KR sent a notification to SCIESU under GKR with a request to exclude this quarry from the previously issued temporary permit.

36. In order to replenish the required volume of construction material, after carrying out survey work and obtaining all the necessary permits from local authorities, the SCIESU under GKR, the border of the quarry was widened by km 135+280. Permission was obtained to develop a quarry located at km 112+870 with an area of 5.08 hectares. This quarry has not been utilized yet.

37. To perform construction work from the MOTC, all the quarries that the previous contractor used were transferred to the China Railway #5. The Engineer's team carried out a visual inspection of the areas allocated for the quarries. The results of visual inspection of the quarries showed its satisfactory condition. Thus, the remaining 12 quarries will be re-utilized following the mobilization of a new Contractor. The main characteristics of the quarries are shown in Table 8.

**Table 8. 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 <sup>3</sup> )	Area (ha)		
1	Quarry №1	91+680	RHS 222m	100 000	11.2	Cholpon v.	being developed
2	Quarry №2	92+630	RHS 550m	200 000	15.6	Cholpon v.	Not being developed
3	Quarry №3	94+080	RHS 25m	60 000	1.04	Cholpon v.	Not being developed

4	Quarry №4	100+790	RHS 85m	150 000	1.8	Cholpon v.	being developed
5	Quarry №5	106+350	LHS 78m	80 000	2.5	Cholpon v.	being developed
6	Quarry №6	106+420	RHS 250m	150 000	3.3	Cholpon v.	Not being developed
7	Quarry №7	110+900	RHS 94m	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 320m	150 000	0.93	Jany-Aryk v.	being developed
10	Quarry №10	135+280	LHS 25m	200 000	0.64	Jany-Aryk v.	being developed
11	Quarry №11	140+990	LHS 212m	97164.92	6.5	Kuiruchuk v.	being developed
12	Quarry №13	148+630	RHS 1800m	800 534.9	18360	Tugol-Sai v.	being developed

38. On November 26, 2021, during the inspection of the project area, a group of environmental experts visited quarries, however, due to snowy weather conditions at the time of the visit, some territories were covered with snow, therefore could be properly observed.

### 2.3.3 Storage Areas (Spoil Areas).

39. 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 9 lists the characteristics of the areas approved for dumping.

**Table 9. 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	149+000	RHS	Tugol-Sai	Private land
13	147+540	LHS	Kuyruchuk	
14	143+610	421 m – 694 m RHS	Kuyruchuk	
15	140+990	122 m LHS	Kuyruchuk	
16	136+940	435 m RHS	Dzhany-Aryk	
17	132+860	315 m RHS	Dzhany-Aryk	
18	130+840	31 m RHS	Dzhany-Aryk	
19	121+620	49 m LHS	Dzhany-Aryk	
20	120+310	37 m LHS	Dzhany-Aryk	
21	117+520	78 m LHS	Dzhany-Aryk	
22	110+660	85 m RHS	Cholpon	
23	100+940	91 m LHS	Cholpon	
24	106+720	55 m LHS	Cholpon	
25	106+540	49 m RHS	Cholpon	
26	93+980	66 m RHS	Cholpon	
27	91+360	45 m RHS	Cholpon	
28	98+190	21 m LHS	Cholpon	
29	103+060	16 m RHS	Cholpon	
30	112+600	45 m LHS	Semiz-Bel	
31	113+970	33 m LHS	Semiz-Bel	
32	115+850	60 m LHS	Semiz-Bel	

#### 2.3.4 Production Site Territory.

40. Several residential and utility containers of the new Contractor are temporarily located on the territory of the previous production base. In connection with the termination of the contract with the contracting company Todini, this Contractor transferred the base under the Handover and Acceptance Certificate to the local Ayil Okmotu. The new Contractor is in the process of obtaining permits from the Kuyruchuk Ayil Okmotu in order to use this territory. The production site of the new 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 and is located at a distance of at least 500 m from the settlement. Currently, this territory is being cleared and leveled for the construction of a production site.

41. The following buildings and structures are planned to be located on the site: Asphalt plant, crushing and screening plant (Crusher), car parking; parking lot for trucks; vehicle repair building, storage area for bulk materials - crushed stone and sand; transformer substation, checkpoint, office, warehouses, platform for garbage containers. The production site shall be fenced off. Unauthorized persons shall not have access to this area. In accordance with

SSEMP requirements, these objects must be located at a distance of at least 500 m from nearby houses, as well as at least 50 m from water sources (to avoid potential contamination).



**Figure 4. Work on the new production site territory.**

### **2.3.5 Camp.**

42. The location of the new Contractor's camp is planned in the municipal territory of the Kuyruchuk Ayil Okmotu, not far from the production base of the previous Contractor. The new Contractor is in the process of obtaining permits from the Kuyruchuk Ayil Okmotu in order to use this territory. Currently, the territory of the new Contractor's camp has not been built up yet, initial planning and preparatory work is underway. The camp area is 2.0 hectares. According to the plan provided by the Contractor, the camp will include: a dormitory for the Contractor's workers, a dormitory for local staff, a Contractor's office, an equipment maintenance workshop, a security room, a transformer, temporary garbage cans, a sump well, and a toilet.

43. A preliminary layout of the camp has been submitted for approval to the Authorities; it is shown in Annex 1.

### **2.4 Description of Any Changes to Project Design.**

44. No changes have been made to the project design within the reporting period.

### **2.5 Description of Any Changes to Agreed Construction Methods.**

45. No changes have been made to agreed construction methods within the reporting period.

### **3 ENVIRONMENTAL SAFEGUARD ACTIVITIES.**

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

46. During the reporting period, an International Environmental Consultant of Gentek Ltd. visited the country and carried out visual monitoring of the condition of the project road, quarries, sections allocated for spoil areas, sampling points for measurements, as well as the area of the planned production base and the camp of the new Contractor. The monitoring of the project area was carried out in cooperation with the National Environmental Consultant of Gentek Ltd. and the Environmental Manager of the Contractor - China Railway No.5. The inspection of the temporary camp and site of the planned production base was carried out in collaboration with the Road Safety Consultant of Gentek Ltd. and accompanied by a Representative from China Railway No.5. The results of the site visit were compiled as a summary report and sent to the PIG.

47. There was increased dust formation in some parts of the road with heavy traffic (especially heavy-duty vehicles), despite the winter weather conditions. Given that the Contractor has started maintenance work, one of the Contractor's responsibilities is to carry out dust suppression work. To perform dust suppression, the contractor mobilized 7 units of watering machines. In addition, the Engineer handed over a list of available sites and water sources agreed with local authorities.

48. With an increase in temperature and dry air, visibility is critically impaired, an increase in dust leads to road safety problems on the roads, and also negatively affects the environment and public health. This anthropogenic impact should be mitigated by intensive systematic watering of roads and construction sites with a frequency of half an hour from 7 AM to 7 PM during road construction activities in dry weather.

49. The approved Project of HCHS protection zones for section 2B Epkin - Dyikan (Bash-Kuugandy) is included in the tender documents. The new Contractor shall take into account archaeological excavations at the Historical and Cultural Heritage Sites during the commencement of work. Visual monitoring carried out in November 2021 confirms that the Historical and Cultural Heritage Sites located on the project territory are not disturbed. In order to perform the work prescribed in the approved "Project of Protection Zones of the HCHS", the contractor has identified a local specialist- archaeologist who will begin to perform these works when the weather is favorable. The local specialist will receive all the necessary permits from the Ministry of Culture and, based on the results of the work performed, will prepare a report that will be sent for consideration and approval to the Ministry of Culture. All finds will be submitted to the Ministry of Culture/National Academy of Sciences.



**Figure 5. Complex of mausoleums-Clay Mounds, 138 km.**

50. During the reporting period, no tree-felling work was carried out. The trees will still have to be felled at the sections located in the areas of widening, alignment of the road, and in the areas of new culvert construction. The planting of new seedlings in a ratio of 1:2 is envisaged as compensation measure. The choice of tree species for planting instead of felled ones has to be determined.

51. Following the mobilization of China Railway No.5, tree-marking work will be carried out with the participation of the environmental experts from Consultant company and local authorities. Efforts will be made to minimize the number of felled trees and preserve the existing green space.

### 3.2 Site Audits.

52. No inspection work was carried out on the project site during the period July-September 2021 due to the termination of the contract with the previous construction Contractor company. In October 2021, the National Environmental Consultant carried out a visual monitoring-screen of the project road. In November 2021 the project territory were visited two times; details of these visits are shown in Table 10 below.

**Table 10. Inspections of the project area.**

No	Date	Name	Aim	Summary of observations
1	15.10.21	Zhumaliev T.N.	Visual monitoring of the environmental condition of the project road	a) increased dust formation on the road b) insufficient number of road signs in dangerous areas
2	26.11.21	Zhumaliev T.N.	Studying and visual monitoring of the	a) Some spoil areas are located near water sources; it is necessary

		Garajayeva N.	environment before the resumption of construction work	to remove them from rivers/ditches; b) Spoil areas LHS are outlined along the project road indicating anthropogenic impact; reclamation work to level the land shall be carried out as soon as work resumes; c) to dispose of garbage from quarry 133+000, to send a letter to local authorities with a request to the population of the nearby Jany-Aryk village not to dump waste into quarries; d) to eliminate the remains of old asphalt collected at the water source, the Kyzart river e) to add an additional sampling point for air, noise and vibration and water quality near the village, near the planned camp site of the Contractor f) to bring the constructed culverts into compliance by coating them.
3	21.11.21-27.11.21	Toktomushev B.	Audit of road safety carried out by a new Contractor	a) Insufficient number of road signs; b) preparation of inert materials for the winter period; c) installation of fire safety shields; d) to organize logs and safety instructions (Safety Rules); e) installation of reflective tapes on the narrowed part of the road; f) to remove old asphalt from the roadway (153+480)

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

53. During the reporting period, no construction work was carried out on the project area. Due to the recent change of the construction Contractor, the new Contractor has started to carry out leveling works; the first visits and observation of the leveling were performed in November 2021 (see paragraph 32). Observations made during the inspections were communicated to the Contractor for correction action upon mobilization.

### 3.4 Trends.

54. During the reporting period, construction work was not carried out, the contractor carried out work on the maintenance of the road. Due to the recent change of the construction Contractor, the new Contractor has just started planning the sites for the construction of the camp and the location of the crusher and asphalt plant; the first inspections of planning



activities were carried out in November 2021. Non-compliance were found during the inspection. To improve road safety, the Engineer recommended that the contractor increase the number of temporary road signs at the project site and keep them permanently cleared of dirt.

### **3.5 Unanticipated Environmental Impacts or Risks**

55. During the reporting period, no construction work was carried out on the project area, no unanticipated environmental impacts or risks were identified.

## **4. RESULTS OF ENVIRONMENTAL MONITORING**

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

56. Due to the suspension of the construction activity on the project sections, the instrumental analysis (monitoring of noise, vibration, atmospheric air, and water) was not carried out.

### **4.2 Trends**

57. Due to the suspension of the construction activity on the project sections, the instrumental analysis (monitoring of noise, vibration, atmospheric air, and water) was not carried out. The Contractor is aware of the requirements regarding the identification of local laboratories for instrumental analysis and the need to obtain approval from the Engineer.

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

58. Due to the suspension of the construction activity on the project sections the instrumental analysis (monitoring of noise, vibration, atmospheric air, and water) was not carried out.

### **4.4 Material Resources Utilisation**

59. China Railway No.5 performs water consumption for dust suppression from previously agreed and approved water sources (from the Jungal, Tugol-Sai, Karasuu and Kyzartsuu rivers), 7 units of water carriers were mobilized to the project site.

### **4.5 Waste Management**

60. The construction Contractor developed the Waste Management Plan in the SSEMP describing the project specific segregation and waste management activities. During the reporting period, no construction work was carried out on the project site; no waste associated with road construction activities was generated. Currently, the Contractor is in the process of obtaining permission from the government authorities for the use of the production base and camp. After a permit is in place, the request to use local resources for the disposal of waste will be sent to Kuyruchuk Ayil Okmotu.

### **4.6 Health and Safety**

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

61. On December 10, 2021, at night time a fatal road traffic accident occurred with the passengers in the passenger car on the section of the Epkin-Dyikan (Bashkuugandy) project

road. Details of the accident are currently being investigated. This case is the only case recorded during the reporting period.

#### **4.6.2 Worker Safety and Health**

62. The Contractor hired Occupational Health and Safety Specialist with necessary qualifications to perform related duties. No incidents and/or accidents were identified in relation to Workers Health and Safety issues in the reporting period. There were no cases of COVID-19 among the contractor's personnel. The contractor is taking all necessary measures recommended by the Ministry of Health of the Kyrgyz Republic.

#### **4.6.3 Training**

63. No training was conducted during the reporting period.

64. The consultant is planning to conduct trainings on HSE in accordance with compliance requirements among the construction Contractor's employees after mobilization.

### **5. SSEMP FUNCTIONING**

#### **5.1 SSEMP Review**

65. The new Contractor submitted the SSEMP for review and approval 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. The Consultant reviewed the plan and provided IPIG with comments on improvement of the plan.

66. The new contractor has not yet commenced road construction work on the project. However, the review of the Contractor's SSEMP and the observations made during the single visit/familiarization with the project area allowed to highlight recommendations to be considered as further mitigation / prevention measures on project activities. These measures are presented in paragraph 7.2 below.

### **6. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT**

#### **6.1 Good practice**

67. Due to the termination of the Contract with the Todini Contractor and preparatory period for mobilization and commencement of work by the new Contractor – China Railway No.5, no construction work was carried out on the project sections during the reporting period.

#### **6.2 Opportunities for Improvement**

68. The recommendations presented in paragraph 7.1 should be taken into account and actions performed to improve performance in the future.

## **7. SUMMARY AND RECOMMENDATIONS**

### **7.1 Summary**

69. In connection with the termination of the Contract with Todini construction contractor, all quarries, as well as allocated spoil areas territory were temporarily returned/handed over to the local authorities. After mobilization of a new Contractor – China Railway No.5 and its team for the project road section, after the resumption of construction work, these sites will be used again. Currently all appropriate permits from the local authority to utilize quarries and spoil areas are available.

70. The new Contractor shall obtain the appropriate permits for the production base and the camp from the local authority.

71. 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. Obtaining additional permits for these quarry areas will not be required, since a temporary permit for the development of quarries was issued by the Ministry of Transport and Communications of the Kyrgyz Republic.

72. There is an increased dust formation during heavy traffic and due to the heavy-duty vehicles traffic in the dry weather.

73. There is old asphalt storage close to the both banks of the Kyzart river that can cause a negative impact on the river water composition.

74. There is unsuitable material storage next to the rivers/ditches on some road sections LHS.

### **7.2 RECOMMENDATIONS**

75. During the production base and camp construction, the top soil removed during work must be separately stored in accordance with the requirements (permissible period and technical specifications for keeping, and quality control) for further reclamation of these territories.

76. With the resumption of road construction work, a new Contractor shall prepare a tree planting plan in detail (the number of trees felled in specific areas; identification of specific areas with Aiyl Okmotu for planting seedlings; discussion of the species, characteristics of seedlings and their purchase with local forestry nurseries; design of planting and the process of caring for seedlings, etc.).

77. During the road construction work to the completion stage, the Contractor shall prepare a plan for the remediation of the used quarries in the completed sections.

78. To eliminate the anthropogenicity of the site due to increased dust formation, the Contractor shall draw up and approve a dust suppression plan for the project road section, increase/maintain the number of water tank trucks and watering intensity at intervals of half an hour. It is recommended to water the road from 7:00 AM to 7:00 PM.

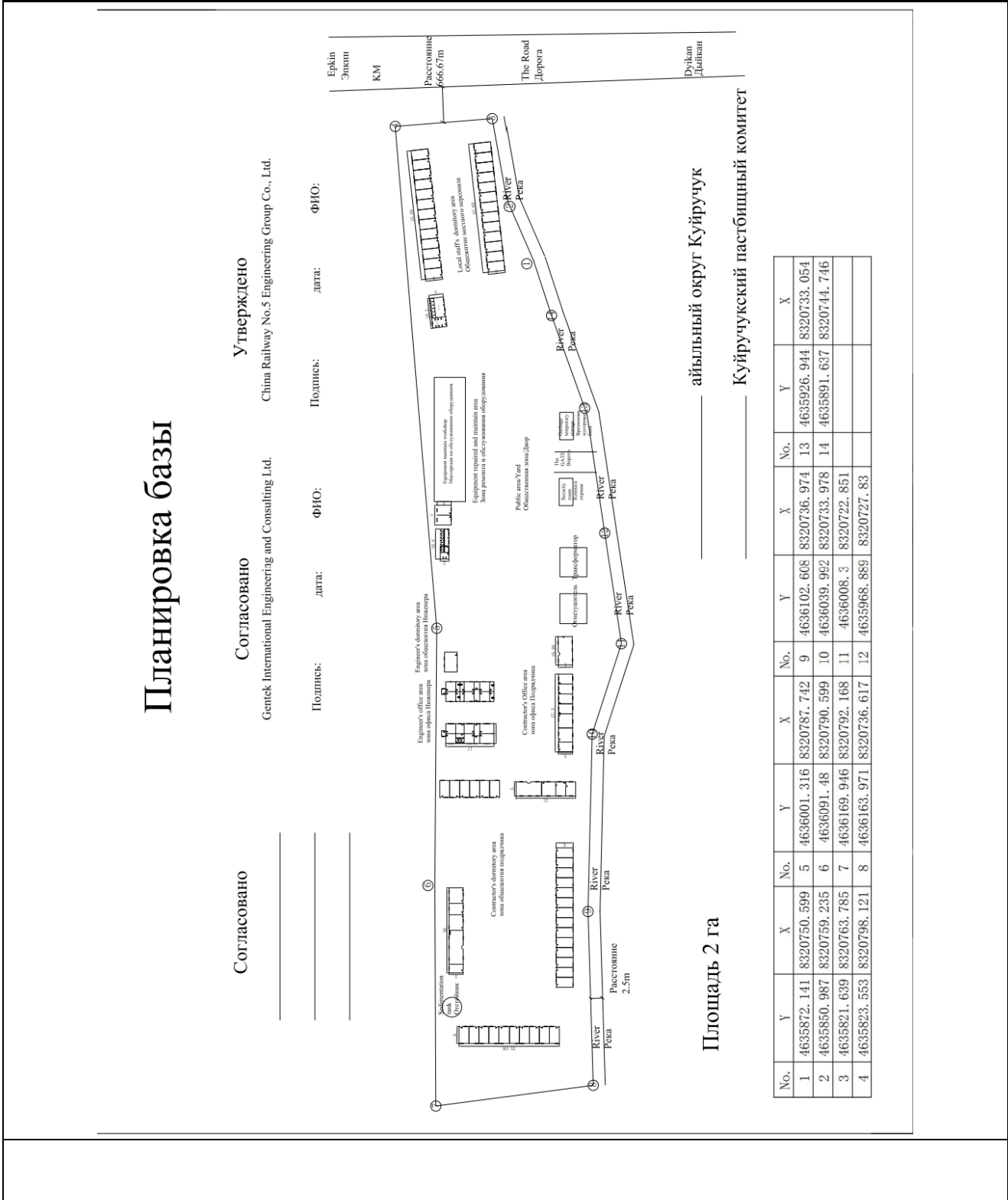
79. In order to avoid pollution of the environment, the new Contractor will have to negotiate and designate areas for storing old asphalt in advance with local Aiyl Okmotu.

80. In order to avoid pollution of the environment, the Contractor will have to negotiate and designate areas for storing waste material in advance in accordance with regulations and standards.

81. There is an insufficient number of well-designed road safety signs along the project road. A plan needs to be developed to provide the safe road traffic elements such as warning signs, lighting, barriers, etc.

ANNEXES

1. Preliminary Production Base Plan of China Railway 5



**2. Selected Photos from inspection of the Project Site**



**Photo 1. Quarry 91+680**



**Photo 2. Village opposite of Quarry 91+680**





**Photo 3. Old asphalt piled up on both sides of the river**



**Photo 4. Culvert (uncovered)**



**Photo 5. Quarry 106+420 (not developed yet)**



**Photo 6. Quarry 94+080**



**Photo 7. Quarry 100+790**



**Photo 8a. Quarry 117+530**



**Photo 86. Quarry 11+-530 (dumped waste)**



**Photo 9. Quarry 135+280**



**Photo 10. Spoil area 98+190**



**Photo 11. Spoil area 117+520 (in vicinity to river Jani-Arik)**



**Photo 12. Spoiled area (leveled)**



**Photo 13. Constructing of pedestrian barrier**



**Photo 14. Sampling point for instrument measurements**



**Photo 15. Water sampling point**



**Photo 16. Leveling the area for production base site**



**Photo 17. Complex of Mausoleums- Clay Mounds, 138 km**



**Photo 18. Dust formation on the road**