

Semi-annual Environmental Monitoring Report

Project Number GEO 51257-001

Reporting period: January - June 2021

#4 Semi-annual Report

August 2021

Georgia: North-South Corridors (Kvesheti – Kobi) Road Project

Loan No GEO 3803

(Financed by the Asian Development Bank and European Bank for Reconstruction and Development)

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Abbreviations

ADB	Asian Development Bank
CC	Construction Contractor
CH	Cultural Heritage
CSEMP	Contractor's Contract Specific Environmental Management Plan
EBRD	European Bank for Reconstruction and Development
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report
ESP	Environmental and Social Policy
ESR	Environmental Sensitive Receiver
GOGC	Georgian Oil and Gas Corporation
GRM	Grievance Redress Mechanism
GRCE	Grievance Redress Committee
HS	Health & Safety
HSE	Health, Safety and Environment
IFC	International Finance Corporation
IPAM	Independent Project Accountability Mechanism
LARP	Land Acquisition and Resettlement Action Plan
MoEPA	Ministry of Environmental Protection and Agriculture
MoESD	Ministry of Economy and Sustainable Development
MoRDI	Ministry of Regional Development and Infrastructure
NCN	Non-Conformance Notice
NCR	Non-Conformance Report

NFA	National Forest Agency
NOC	No Objection Certificate
PMSC	“Project Management and Construction Supervision Contract
PPE	Personnel Protective Equipment’
PR	Performance Requirements of EBRD
PS	Performance Standards of IFC
PIU	Project Implementation Unit
QC	Quality Control
RD	Road Department
RoW	Right of Way
SAEMR	Semi Annual Environmental Monitoring Report
SC	Supervision Consultant
SEMP	Site Specific Environmental Management Plan
SFF	State Forest Fund
SPS	Safeguard Policy Statement
TBN	To Be Nominated

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1. INTRODUCTION

1.1 Preamble

1. This report presents the Bi-annual Environmental Monitoring review of North-South Corridor (Kvesheti – Kobi section) Road Project for the period of January to June 2021.
2. This report is the 4th Semi-Annual EMR for the North-South Corridors (Kvesheti – Kobi section) Road Project.

1.2 Headline Information

3. The length of the new alignment is 22.7 km and will be divided into two construction packages, or 'Lots' as follows:
 - Lot 1: Tskere – Kobi: Chainage KM 12.7 – KM 22.7 (10 km)
 - Lot 2: Kvesheti – Tskere: Chainage KM 0.0 – KM 12.7 (12.7 km)
4. The project involves construction of 6 bridges and 5 tunnels, 6 grade junctions (1 for lot 1 and 5 for Lot 2).
5. The Contract for "Project Management and Construction Supervision Contract (PMSCS) was awarded to UBM on June 24,2019 by Road Department (RD) of Ministry of Regional Development and Infrastructure (MoRDI).
6. There are two separate contractors for each lot#1 and lot#2 as given below:
 - Lot# 1: China Railway Tunnel Group Co. Ltd. (CRTG), contract signed on 05-09-2019
 - Lot# 2: China Railway 23rd Bureau Group CO. Ltd (CRCC), contract signed on 15-08-2019
7. The proposed Kvesheti-Kobi Road Project is the part of the program launched by the Government of Georgia and the road department to upgrade the major roads of the country. This will cover around 23 km of the highway and will replace the existing Kvesheti to Kobi road section which is around 35 km long and crosses the Jvari Pass at an altitude of around 2,400 m with poor driving safety conditions. Thus, saving the travelling cost, time delay by reducing the travelling distance of 12 km through very difficult mountainous terrain, especially, during the winter and less fuel consumptions resulting in emissions savings.
8. The major benefits of the new Kvesheti-Kobi Road Project include: guaranteeing operational continuity during wintertime when transportation is hindered historically; locals having year-round access to the healthcare, education institutions; promoting trade and commerce, Improving quality of life in Kazbegi and Dusheti municipalities; Improvement of road safety by reduction in fatalities, injuries and accident rates; travel time savings for passengers and freight transport; Increase of tourist's flow in the region and less air pollution in Gudauri Resort.
9. The Project outline (km 0+000 – 22+700) from Kvesheti to Kobi:

Classification of road:	International highway
Design speed:	80 km/ hr.
Road length:	22.75 km (lot#1 10.03 km : Lot# 12.72 km)

Road width: 15 m
Numbers of lanes: 2 ~ 3 lane

10. Based on Employer's letter # N2-05/10497 dated: 23-09-2020, PMCSC notified the Contractors through letter # 2020-09-UBM-CRTG-160 dated: 23-09-2020 that according to the subclause of 8.1 of the General Conditions of Contract (GCC), PMCSC hereby gives the CC notice to commencement of work and October 01, 2020 has been set up the date for the commencement.
11. Based on ADB Environmental Safeguards Policy (2009), this Project falls under ADB's project Category A as the project is considered to have significant diverse impacts over a wide area during construction and operation, such as noise and vibration on local residents and potentially on cultural heritage, significant quantities of spoil disposal, road safety impacts, impact on biodiversity and landscape. Road Department of Georgia submitted Environmental Impact Assessment (EIA) of the Project to the Ministry of Environment Protection and Agriculture in November 2018 in accordance to Georgian legislation, and that was approved by MoEPA on April 25, 2019 by order # N 2-354. The Project was also approved by the lenders, ADB approved the Project on August 1st and EBRD on October 2nd 2019.
12. Conditions of Approval from MoEPA include the implementation of EMPs, shall not disturb the water supply network of the communities, vibration monitoring, washing of vehicles tyres before coming on the road, submission of technical report on the Inventory of Stationary Sources of Atmospheric Air Pollution and their Emission, noise level monitoring, protection of rivers and proper design of water structures, mitigation measures to protect critical habitats and floral and faunal species in compliance with the international conventions and Red list of Georgia, installation of avalanches fences, protection of cultural heritages and prohibition for dumping of waste in Kazbegi National Park etc.

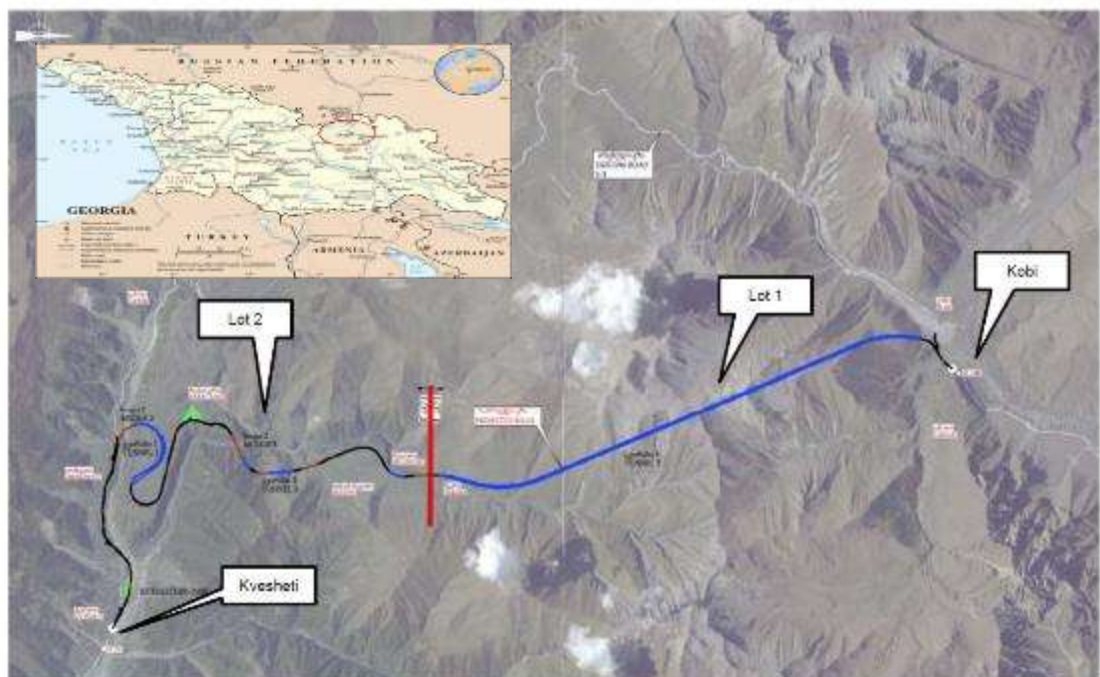
2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

13. Due to its geographic location, Georgia's role as a major transit country is momentous. Transport of goods into and through Georgia has increased over the past 10-15 years. Almost two-thirds of goods in Georgia are transported by road, and haulage by domestic and international truck companies is very evident on the country's highways. Many of the roads are, however, poorly equipped to cope with the volume of traffic and the proportion of heavy vehicles, and factors such as insufficient dual carriageways, routing through inhabited areas and inadequate maintenance and repair, hinder throughputs and increase transit times. This creates difficulties for haulage companies and their clients, truck drivers, Georgian motorists and local residents.
14. The Government of Georgia (GoG) has launched a program to upgrade the major roads of the country. The program is being managed by the Roads Department (RD) of the Ministry of Regional Development and Infrastructure (MoRDI). As a part of the program, upgrading of Kvesheti-Kobi section of the E117 is planned. This section includes the construction of 9 km long main tunnel that will cross the Caucasus ridge bypassing the existing road that connects Kvesheti to Kobi through Gudauri area and the Jivari pass. The project is located in Dusheti and Kazbegi municipalities, Mtskheta-Mtianeti region in the central northern part of Georgia (see Figure 1).

15. As for the residents of the Khadistskali gorge – currently the villages are poorly accessible in winter. According to official statistics (ref census 2002 and 2014) the decrease in community is significant. The decisive factor of decrease in population is the poor accessibility in winter especially for the localities at the higher altitude. The residents have to walk a long distance (for Tskere – around 7km) for basic food and medication. No first aid facilities are available in the area and no opportunity for children from the valley to remain in the villages and attend school. The road will improve access to the settlements in particular those located higher in the gorge. Better access together with other benefits, ensured for permanent residents of the mountainous settlements under the national legislation, can be considered as one of the ways for reversing migration from the area.
16. Kvesheti Kobi road section with six junctions and three service roads will play an important role in the development of Kazbegi and Dusheti municipalities by facilitating the communities of Kvesheti, Bedoni, Tskere and Kobi by providing year-round access to markets, educational institution, health facilities of capital Tbilisi and increase the tourist attraction in Trege valley.

Figure 1: Location of Project Area



17. The length of the new alignment is 22.7 km and will be divided into two construction packages, or 'Lots' as follows
 - Lot 1: Tskere – Kobi: Chainage KM 12.7 – KM 22.7 (10 km)
 - Lot 2: Kvesheti – Tskere: Chainage KM 0.0 – KM 12.7 (12.7 km)

Lot 1 Summary

18. The Tskere-Kobi portion of the Project road, also referred to as 'Lot 1', includes 8.86 km long tunnel with two cut and cover sections and a junction connecting to the existing road near Kobi. More specifically Lot 1 includes:

- 178 m long section of road from Tskere to the south portal of Tunnel 5;
- Tunnel 5: 8.86 km long bidirectional, 2 lane tunnels (max. gradient 2.35%);
- Two cut and cover (C&C) sections of Tunnel 5 (200m –south portal and 8m – north portal) to protect from avalanches and move entrance portal farther from the Tskere;
- 9.062 km emergency gallery parallel to Tunnel 5 and 17 connections to the main tunnel (6.4 meters wide);
- Technical buildings next to the north and south portals – the buildings include facilities building, pumping station and ventilation room;
- 0.8 km long section of road connecting the north portal of the tunnel with existing road. The alignment has been adapted to the current road with a maximum gradient of 4.2 % to keep on using the existing bridge (bridge length 42m, height 6m); and
- 214 m long local road diversion.

Lot 2 Summary

19. The Kvesheti – Tskere section, or 'Lot 2' includes 2.5 km of tunnels and 1.5 km of bridges. The main elements of this section are:

- Kvesheti bypass road (length 3.2 km),
- Bridge 1 (length 27.8m, height 14m, 2 lane)
- Bridge 2 over the Aragvi river (length 435.28m, height 62m, 3 lanes)
- Tunnel 1 (length 1540.64m, 2 lanes) with gallery (1092m) (New Austrian tunneling method- NATM)
- Bridge 3 – Arch bridge over the River Khadistskali (length 426m, height 164m, 3 lane)
- Tunnel 2 (length 193.42m, C&C, 3 lane)
- Bridge 4 over the left tributary of River Khadistskali river (length 147.80m, height 26m, 3 lane)
- Tunnel 3 (length 388.38m)
- Bridge 5 (length 322m, height 55m, 3 lane)
- Tunnel 4 (length 299m, C&C, 3 lane)
- Bridge 6 (length 218m, height 48m, 3 lane)
- Five grade junctions are planned (KM0.3, KM1.7, KM3.1, KM7.7, KM10,5) and 3 service roads.

20. Technical features of the alignment considered during detail design include:

Lot#1

Road class	International
Design speed	80 km/hr.
Outside Total width (paved)	12 m
Lane width	3.5 m
Min shoulder	2.5 m
Min road side	1 m
Structures Total width	15 m

Lane width	3.5 m
Min clearance	2.5 m
Min way side	1.5 m
Tunnel Total width	12.5 m
Lane width	3.5 m
Min shoulder	1.5 + 1m median
Min sidewalk	0.75 m
Number of Junction	05

Lot#2

Design speed	80 km/hr.
Outside Total width (paved)	12 m
Lane width	3.5 m
Min shoulder	2.5 m
Min road side	1m
Structures total width	15m
Lane width	3.5 m
Min clearance	2.5 m
Min wayside	1.5 m
Tunnel Total width	12.5 m
Lane width	3.5 m
Min shoulder	1.5 + 1m median
Number of Junctions	01
Min sidewalk	0.75 m
Number of Junctions	01

2.2 Project Contracts and Management

21. Information related to the project execution is given in Table 1:

Table 1: Project Information

Employer	Road Department of Georgia, Ministry of Regional Development and Infrastructure of Georgia
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Funding Source	Asian Development Bank (ADB) European Bank for Reconstruction and Development (EBRD)
“Project Management and Construction Supervision Contractor (PMCSC) (Engineer)	UBM
Contractor	Lot# 1: CRTG (China Railway Tunnel Group Co. Ltd.) Lot# 2: CRCC(China Railway 23rd Bureau Group CO. Ltd)
Contract Number	KKRP/CW/CP-01R, 02R
Contract date	Lot# 1 05.09.2019 Lot# 2 15.08.2019
Commencement Date of Works	October 01, 2020.
Contract Period	Lot#1: 48 months (1460 days) Lot#2: 36 months (1080 days)
Original Completion date	Lot#1 30-09-2024 Lot#2 16-09-2023
Expired time	272 days
Remaining time	Lot # 1: 39 months Lot#2: 27 months
Defects Notification Period	2 years
Contract Price (GEL)	Lot#1: 909,024,280.61 GEL Lot#2: 316,370,802.91 GEL

22. The TOR for the “Project Management and Construction Supervision Contract (PMCSC) contains the following tasks for the environmental specialists:

- Ensure that the provisions of the approved Environmental Management Plan are reflected in the Contractor’s specific environmental management plan(s) (SEMPs) prior to its acceptance by the PMCSC, the Employer and ADB & EBRD, and thereafter ensure that the Contractor complies in every respect with the provisions of the SEMPs;
- Preparation and implementation of Biodiversity Monitoring and Evaluation Program (BMEP) and contract with the organizations such as universities and NGOs in order to commission surveys to be completed as a part of implementation of BAP
- Protection of critical habitats to ensure that there is no net conservation loss or net conservation gain during the project implementation

- Conduct environmental trainings and briefings to provide awareness to ADB SPS 2009 and EBRD performance requirements (PRs elaborated in EBRD ESP 2014) and national environmental requirements.
 - Protection of cultural heritages in accordance with ADB SPS 2009, EBRD PR 8 and Georgian Law on cultural heritage 2007 updated in 2018, especially, Article 36 regarding buffer zones, perimeter of physical security of cultural heritage;
 - Develop an environmental auditing protocol for the construction period, regularly supervise the environmental monitoring, and submit the Monthly EMR and Semiannual EMR based on the monitoring data and laboratory analysis reports. Monthly EMR will be included as an annex to the Consultant's Monthly Progress Report;
 - Develop a program for hands-on training of Contractor's staff in implementing the SEMP;
 - Conduct post-construction environmental audit and prepare post-construction environmental audit report.
23. Obligation of the contractor, to safeguard, mitigate adverse impacts and rehabilitate the environment is addressed through environmental provisions in the FIDIC conditions of contract for construction, MDB harmonized addition – June 2010 and special clauses included in the contract related to environment, especially FIDIC clause 4.18 (protection of environment), 4.8 (safety procedures), 6.4 (labour laws), 16.3 (cessation of work/ remedial work), 2.3 b (employer's personnel), 4.21 (progress report) are important in this regard.
24. The Contract for Project Management and Construction Supervision Contract (PMSCS) was awarded to UBM on June 24,2019 for three phases of the project:
- Phase 1: Design review, to be completed in a period of three months and submitted to RD.
- Phase 2: Construction supervision and contract administration. The construction period is 36 months for Lot#1 and 48 months for Lot#2.
- Phase 3: Defects Notification Period, two years.
25. Summary of civil works contracts and works' progress is provided in Table 2. All awarded contracts included EMPs cleared by ADB and any conditions of applicable national EIA clearance by MoEPA. Subclause 4.18 in the contract KGRP/CW/CP-01R and KGRP/CW/CP-02 R contains all the information related to protection of environment and inclusion of the EIA and EMP in the contract.

Table 2. Summary of Civil Works Contracts and works' progress

Package	Contractor	Scope	Signed	Approval Date			Environmental personnel		Civil Work		Progress as of	
				SSEMP	COVID-19 HSMP	ERP	Environmental officer	Health and Safety officer	Start	End	31 Dec 2020	30 Jun 2021
Lot 1	CRTG	Tskere – Kobi: Chainage KM 12.7 – KM 22.7 (10 km) including 178 m long section of road from Tskere to the south portal of Tunnel 5; Tunnel 5: 8.86 km long bidirectional, 2 lane tunnels (max. gradient 2.35%); Two cut and cover (C&C) sections of Tunnel 5 (200m – south portal and 8m – north portal) to protect from avalanches and move entrance portal farther from the Tskere; 9.062 km emergency gallery parallel to Tunnel 5 and 17 connections to the main tunnel (6.4 meters wide); 0.8 km long section of road connecting the north portal of the tunnel with existing road.	05.09.2019	12-06-202	26-11-2020	26-11-2020	Paata Chankotadze	Vladimer Melia	October 01, 2020.	30-09-2024 (Planned)	2.18 %	14.5 % (Emergency tunnel progress)
Lot 2	CRCC	Kvesheti – Tskere: Chainage KM 0.0 – KM 12.7 (12.7 km) Including construction of 6 bridges, 4 tunnels and 6 grade junctions	15.08.2019	12-06-202	27-11-2020	27-11-202	Levani Giorgadze	Giorgi Mikiashvili	October 01, 2020.	16-09-2023 (planned)	-	1.5%

Note: The Month/Years in brackets are planned schedule.

COVID-19 HSMP = COVID-19 Health and Safety Management Plan, ERP = Emergency Response Plan, SSEMP = site-specific environmental management plan

26. Contact details of ADB, EBRD, CC, “Project Management and Construction Supervision Contractor (PMSCS) and RD representatives are given in Table 3 below:

Table 3: Main Environmental Staff of ADB, EBRD, RD, PMSCS and CC

Organization	Position	Name
ADB	Senior Environmental Specialist, Head Office,	Duncan Lang dlang@adb.org
	ADB/RETA International Environmental Safeguards Consultant	Keti Dgebuadze Tel: +995 322 250619 Mob: +995 577 232937 E-mail: ketdgeb@yahoo.com kdgebuadze.consultant@adb.org
	Associate Safeguards Officer Georgia Resident Mission	Nino Nadashvili +995 595 070442 nnadashvili@adb.org
EBRD	Principal Social Advisor Environment and Sustainability department	Nurzhan Dzhumabaev Cell:+44 7881013425 Email: dzhumabn@ebrd.com
	Principle Advisor, Environmental and Social - EBRD	Catherine Edet edetc@ebrd.com
Client/ Borrower	Environmental Specialist of RD	Luiza Bubashvili likabubashvili@yahoo.com Cell:595 219 141
	Head of Environmental Unit of RD	Gia Sopadze sopgia@gmail.com Cell: 599 939 209

"Project Management and Construction Supervision Contractor (PMCS) (Engineer)	International Environmental Specialist	Kashif Bashir Cell: +995 558 151173 Email: bashir.kashif@gmail.com
	Environmental Expert	Nika Sopadze Cell: +995 597 728871 Email: nikasofadze@hotmail.com
Contractor	Project Manager	Lot#1 Cen Daoyong Cell: +995558237339 Email: cen.daoyong@crtg.cn
		Lot#2 Shen Miye Cell: 577 952 873 Email: 527123038@qq.com
	Environmental Specialist	Lot#1 Paata Chankotadze Phone: +995599181753 Email: paatachank@yahoo.com
		Lot#2 Levani Giorgadze Cell: +995571491188 Email: levanigiorgadze90@gmail.com

*Note: The above table only includes the main environmental staff. The PMCS also has in place Cultural Heritage Monitors and both Contracts both have Ecological Clerk of Works amongst other environment focused roles.

27. Under the Contract, the Contractor shall comply with all applicable national and local environmental laws and regulations as well as applicable respective standards under the Contract. The Contractor shall:

- Establish an operational system for managing environmental impacts;

- Develop the Specific EMPs (SEMP) as well as other location specific and topic specific EMPs by identifying environmental risks arising from the Works, the mitigation measures to be applied, and monitoring to be carried out;
 - Implement the required mitigation measures and monitoring;
 - Take any corrective or preventative actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor implementation of the EMP/SEMP; and
 - Submit quarterly monitoring reports to the PMCSC/RD as set in the EIA.
28. The Contractors, CRTG for Lot#1 and CRCC for Lot#2, are responsible for implementation of EMP/SEMP throughout the project during construction phase. The “Project Management and Construction Supervision Contractor (PMCSC) UBM (Engineer) is responsible to monitor the implementation of EMP/SEMP by the Contractor at all its active construction sites and project associated facilities.
 29. Responsibility of daily management for environmental monitoring and implementation of the SEMP is given to the Environmental Protection Managers of the contractors CRTG and CRCC. Each of the Environmental Managers have direct authority from the Project Manager to give instruction to all site staff regarding environmental issues.
 30. Both the contractor hired HS Specialist required for every 50 workers fulfilling the requirement of Article 7 “Organizing and Managing H&S” of Organic Law of Georgia on Labour Safety. HS specialist are available onsite on daily basis and responsible for maintaining safety and protection against HS accidents and maintaining the HSE log book to record near misses and accidents. Moreover, CC for lot#1 has established and maintaining the first aid facilities and appointed medical practitioner (Lasha Gagulia) at the Kobi campsite.
 31. At Lot#1 three national HS specialist: Vladimer Melia (Safety and Health Manager), Akaki Malania (Safety specialist) and Giorgi Kimeridze (Safety Specialist) are at site. In addition to that two International HS specialist: Xu Shaoliang (HSE Engineer) and Ren Jingshen (Safety Engineer) are available at Lot# 1Kobi site.
 32. CC for lot# 2 hired three national HSE specialist Giorgi Mikiashvili, Irakli Mikiashvili and Mikheil Loseliani. They are available at site.
 33. Contractors for Lot#1 has hired Lela Bachashvili as Ecological Clerk of Works (ECoW); while, CC for Lot # 2 has hired Tamta Kapan. Ecological Clerk of Works (ECoW) of each contractor would be responsible for the implementation of the Biodiversity Action Plan (BAP) and ensure that all the workers are aware of the sensitivity of the site in ecological perspective and will carry out preconstruction surveys for identification of critical habitats and key species.
 34. Both the Contractors for Lot#1 & 2 have hired cultural heritage specialists: Mr. Zviad Kviciani and Mr. David Sul Khanishvili respectively.
 35. The organizational charts for key management staff of CRTG and CRCC are given below in figures 2A & 2B respectively:

Figure 2A: Contractor (CRTG) Project Management Staff for lot#1

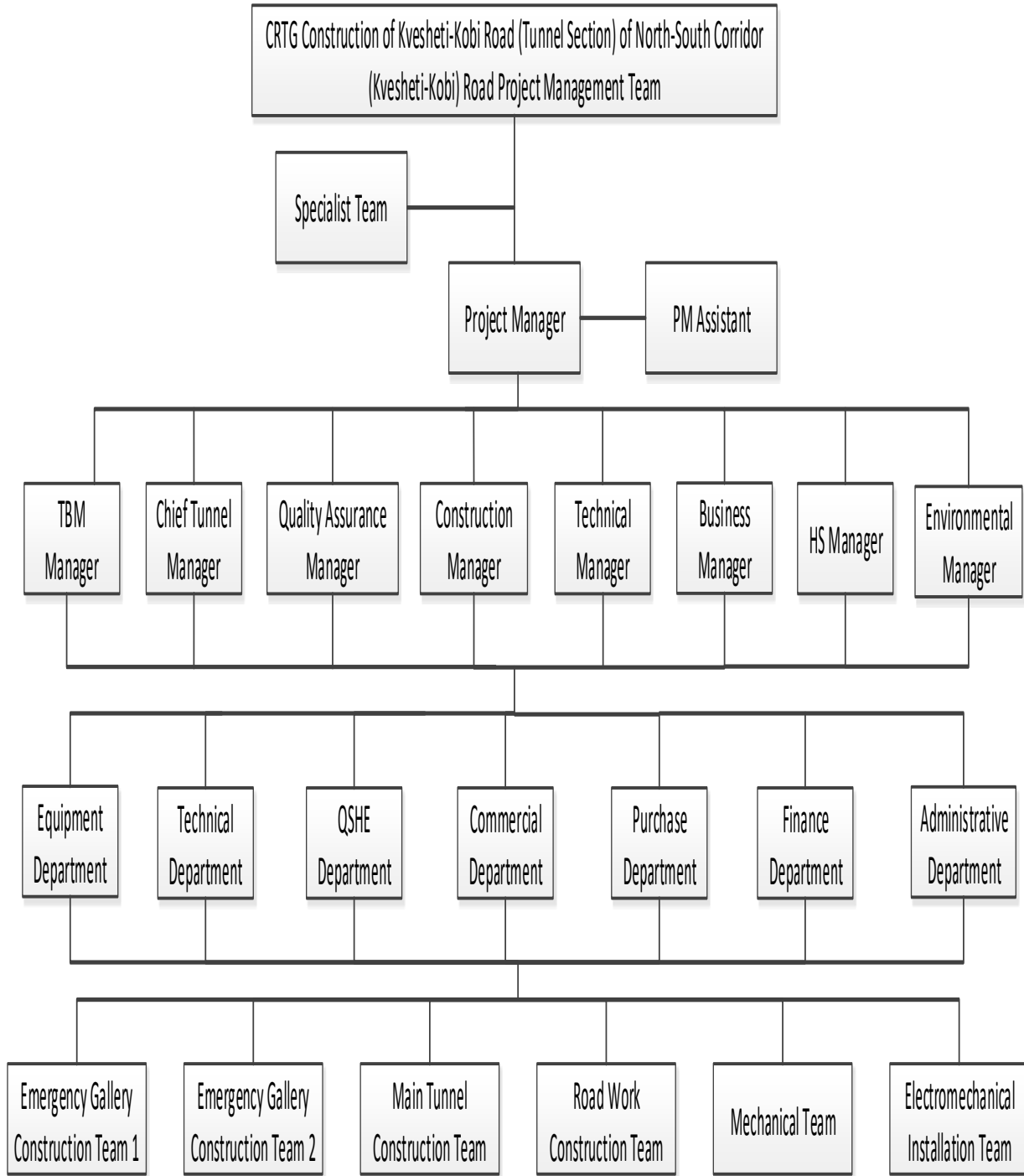
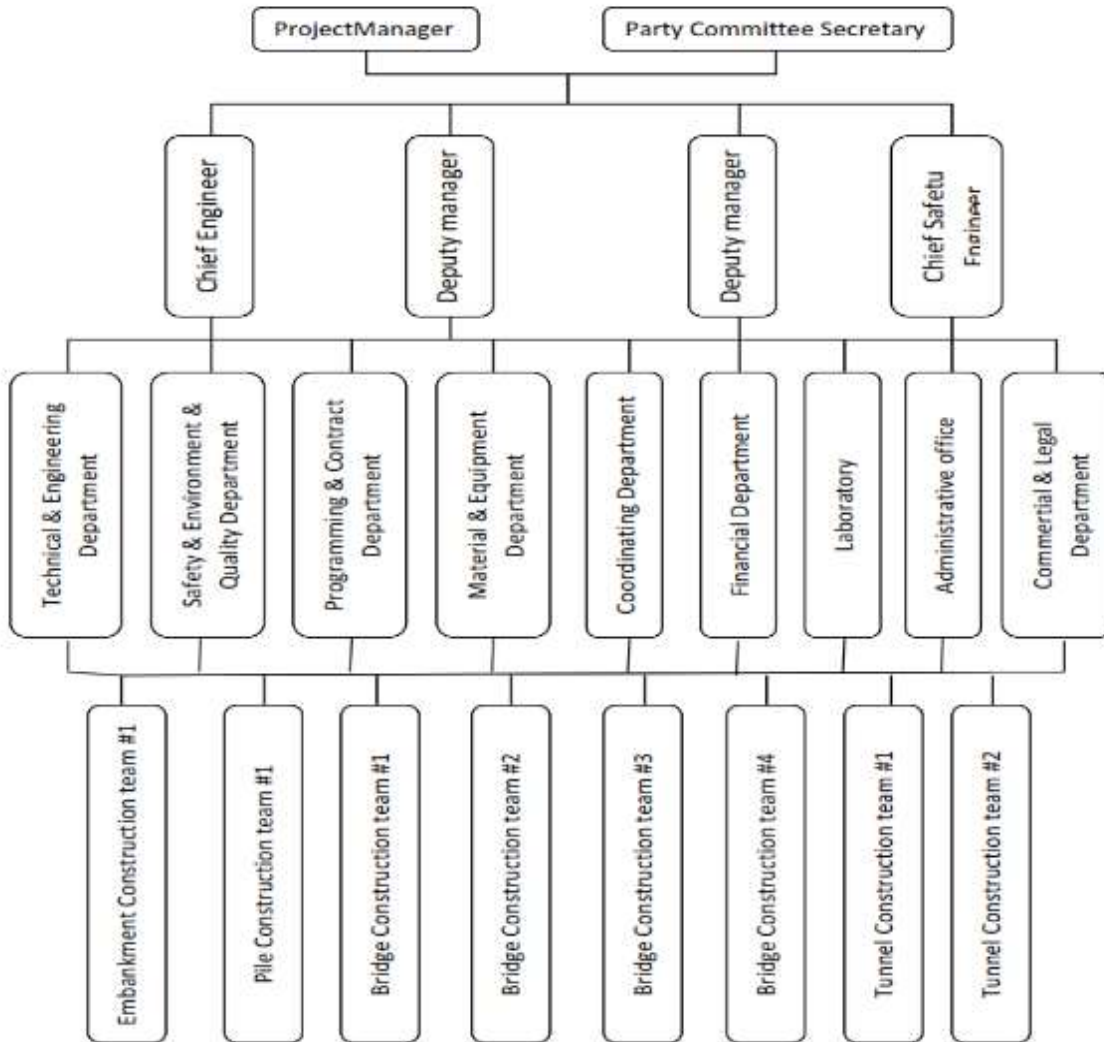


Figure 2B: Contractor (CRCC) Project Management Staff for lot # 2



2.3 Project Activities During Current Reporting Period

Based on Employer's letter # N2-05/10497 dated: 23-09-2020, PMCSG notified the Contractors through letter # 2020-09-UBM-CRTG-160 dated: 23-09-2020 that according to the subclause of 8.1 of the General Conditions of Contract (GCC), PMCSG hereby gives the CC notice to commencement of work and October 01, 2020 has been set up the date for the commencement.

Lot#1:

- **General Items:**
 - Contractor's equipment mobilization - 126 sets (unit of machinery / equipment).
 - TBM design and manufacturing - 100%.
 - Gas pipeline relocation design and approval - 100%.
 - Plans and MSs preparation and approval - 98%.
- **Tunnelling:**
 - Main Tunnel TBM excavation and support – 0m.
 - Pre-Tunnel and Post-Tunnel excavation and support - 15m.
 - Main Tunnel north portal C&C excavation and support – 18.4m.
 - Main Tunnel south portal C&C excavation and support - 0m.
 - Main Tunnel north portal borehole drilling and grouting for fore poling – 100%.
 - Main Tunnel south portal borehole drilling and grouting for fore poling - 0m.
 - Emergency Gallery-N-S D&B excavation and preliminary support – 1287.5m.
 - Emergency Gallery-S-N D&B excavation and preliminary support - 0m.
 - Emergency Gallery north portal C&C excavation and support – 18.4m.
 - Emergency Gallery south portal C&C excavation and support - 0m.
 - Emergency Gallery north portal borehole drilling and grouting for forepoling - 100%.
 - Emergency Gallery south portal borehole drilling and grouting for forepoling - 0m.
- **Bridge:**
 - BRI-7 rehabilitation 0%.
- **Roads:**
 - K12+720-K12+900 Road slop excavation - 0m³.
 - K12+720-K12+900 Road subgrade construction - 0m³.
 - K12+720-K12+900 Road pavement construction - 0m³.
 - K21+968-K22+751 Road embankment construction - 0m³.
 - K21+968-K22+751 Road pavement construction - 0m³.
 - Local Road LRD-12.7 construction - 0m.
 - Local Road LRD-12.9 subgrade and pavement construction - 0m.
 - Local Road LRD-13.1 construction - 0m.
 - Local Road GJ-22.3 subgrade and pavement construction - 0m.
 - Local Road EAO-12.7 construction - 0m.
 - Local Road EAO-22.5 construction - 0m.
- **Operation Area:**
 - OPA-12.8 slope excavation and support - 0m³.
 - OPA-22.0 slope excavation and support - 0m³.
 - OPA-12.8 Facility Building construction - 0%.
 - OPA-12.8 Pump Station construction - 0%.
 - OPA-22.0 Facility Building construction - 0%.
 - OPA-22.0 Pump Station construction - 0%.
- **Retaining Wall:**
 - RWL-12.6 Rockery Wall construction - 0 m³.
 - AWL-12.7 Anchored Concrete Wall construction - 0 m³.
 - CWL-12.7 Cantilever Concrete Wall construction - 0 m³.
 - RWR-12.9 Rockery Wall construction - 0 m³.

- RWR-21.9 Rockery Wall construction - 0 m³.
 - **Construction of Batching Plant #1, Segment Plant, Crusher and other construction facilities.**
 - Batching Plant #1, Segment Plant, Crusher Plant – 100%, TBM installation 70%
36. Progress of works carried out by Contractor for Lot#1 during the reporting period is summarized in table 4A below:

Table 4A: Construction progress during reporting period for Lot#1

WORK DESCRIPTION	DIMENSION	DESIGN	ACTUAL	%	CUMULATIVE
Bill No.2 Preparatory Works					
A) Demolish					
Demolition of building and bridges	m ²	351	0	0	
Demolition of reinforced or mass concrete	m ³	350	0	0	9.5
B) Site Preparation					
General setting out (Repetitive survey by CC for setting out reference points and to confirm the bench marking of the project site for works)	set	1	0	0	1
Site clearance	m ²	55000	0	0	108420
Cutting trees of more than 0.1 m diameter (No red list species uprooted)	set	1	0	0	1
C) Utilities Relocation					
Gas pipeline D700 mm	m	834	0	0	834
Gas pipeline D1200 mm	m	797	0	0	797
D100 cast pipe	m	116	0	0	116
Temporary division of fiber cable	m	920	0	0	
Division of single mode fiber cable	m	920	0	0	
Trench excavation and filling for pipes	m	540	0	0	
D) Surveys					
Additional geotechnical investigation	m	360	0	0	
Bill No.3 Earthworks					
A) Excavation					
Mechanical excavation	m ³	61900.34	0	0	
Blasting(<20%) and ripper excavation	m ³	135785.20	0	0	

Excavation by blasting	m ³	12876.36	0	0	
Excavation by pre-splitting blasting	m ³	850	0	0	
B) Filling					
Embankment construction with material from excavations on site	m ³	276,226.12	0	0	
Embankment construction with material from borrow pits	m ³	4500	0	0	
Filling in spoil area, distance <2km	m ³	2135532.76	142687.92	6.7	166032.92
Filling in spoil area, distance 2km~10km	m ³	548192.76	0	0	
Riprap protection	m ³	43576.10	0	0	
Filling on C&C structure	m ³	144672.77	0	0	
B) Slope support and protection					
Spray concrete on slopes	m ³	91.58	0	0	
Slope protection with wire mesh	m ³	915.84	0	0	
Passive bolts for slope protection	M	465	0	0	
Bill No.4 Road Pavements					
Asphalt surface course	t	26740.68	0	0	
Asphalt base course	t	7168.59	0	0	
Tack coat	m ²	142587.77	0	0	
Prime coat	m ²	46296.97	0	0	
Crushed rock base course	m ³	5303.27	0	0	
Frost blanket course	m ³	17506.74	0	0	
Concrete pavement	m ³	9938.7	0	0	
Bill No.5 Drainage					
A) Longitudinal Drainage					
Triangular ditch, 0.4m width	m	1400.7	0	0	
Trapezoidal ditch, 2m width	m	585	0	0	
Trapezoidal ditch, 1m width	m	730	0	0	
Precast channel for drainage of spills from the tunnel	m	18136	0	0	
Plain pvc pipe ø 350 mm	m	18196	0	0	

Sewer manhole	set	353	0	0	
B) Cross-drainage					
Reinforced concrete pipe on concrete bed ø 400 mm	m	134	0	0	
Precast siphon manhole	set	302	0	0	
Reinforced concrete pipe on concrete bed ø 1800 mm	m	190	0	0	
C) Spoil Area Drainage					
Drainage for existing water courses	m	1723.66	0	0	
Bill No.6 Tunnel 5					
A) South Portal Tskere					
French drain construction	m	2099.76	0	0	
Passive bolt for slope protection	m	9,866.88	0	0	
Steel mesh for support	m ²	5776	0	0	
Cable anchor for slope protection	m	7038	0	0	
Reinforced concrete	m ³	1010.8	0	0	
Sprayed concrete	m ³	685.2	0	0	
Umbrella micro pile ø 101 mm	m	705	0	0	
Reinforced concrete in C&C section	m ³	13375.17	0	0	
Corrugated steel bars in passive reinforcement	kg	1832374.35	0	0	
PVC waterproofing	m ²	15,269.07	0	0	
B) North Portal Kobi					
Passive bolt for slope protection	m	1976	0	0	1976
Cable anchor	m	475.8	0	0	475.8
Sprayed concrete	m ³	132.47	0	0	132.47
Umbrella micro pile ø 101 mm	m	1020	0	0	1020
Reinforced concrete in C&C section	m ³	642.33	0	0	
Corrugated steel bars in passive reinforcement	kg	99561.03	0	0	
C) Underground Tunnel 5					
Main Tunnel excavation and support by TBM	m	8860	0	0	

Pre-Tunnel and Post-Tunnel excavation and support	m	30	7.5	25	15
Emergency Gallery excavation and preliminary support	m	8854.59	1081.8	12.2	1287.5
Emergency Gallery invert construction	m	8854.59	0	0	
Emergency Gallery lining construction	m	8854.59	0	0	
Cross Passages excavation and support	set	18	1	5.6	1
Traffic substructure construction	m	8860	0	0	
Ventilation structure construction	m	8860	0	0	
Bill No.7 Bridge 7- Rehabilitation					
Bridge 7 rehabilitation	set	1	0	0	
Bill No.8 Retaining Walls and Other Structures					
Rockery Wall RWL-12.6	set	1	0	0	
Rockery Wall RWR-12.9	set	1	0	0	
Rockery Wall RWR-21.9	set	1	0	0	
Anchored Concrete Wall AWL-12.7	set	1	0	0	
Cantilever Concrete Wall CWL-12.7	set	1	0	0	
Bill No.9 Road Signaling, Marking and Safety Barriers					
Main roads	m	10031.16	0	0	
Emergency Gallery	m	9068	0	0	
Local roads	m	390	0	0	
Bill No.10 Tunnel Facilities					
Power supply	set	1	0	0	
Lighting	set	1	0	0	
Ventilation	set	1	0	0	
Fire fighting	set	1	0	0	
Security, monitoring and control	set	1	0	0	
Operation control center	set	1	0	0	
Infrastructures	set	1	0	0	
Bill No.11 Technical Buildings					
Facilities Building Tskere	set	1	0	0	

Pumping Building Tskere	set	1	0	0	
Facilities Building Kobi	set	1	0	0	
Pumping Building Kobi	set	1	0	0	
Facilities	set	1	0	0	
Bill No.12 Road Equipment					
A) Infrastructure (Ducts)					
Duck bank	m	1350	0	0	
Cast iron manhole	set	44	0	0	
B) Medium Voltage					
Switching center	set	6	0	0	
Three-phase line	m	9500	0	0	
C) Road Lighting					
Main roads	m	963.16	0	0	
Local roads	m	390	0	0	
D) Telecom					
Fiber optic network	set	1	0	0	
Lan multiservice network	set	1	0	0	
Bill No.13 Environmental Measures					
Top soil excavation	m ³	51004.09	0	0	27294
Distribution of top soil	m ³	50000	0	0	
Manual seeding	m ²	150000	0	0	
Planting of trees, shrubs and plants	lump-sum	1	0	0	
Hydro-seeding of green slopes	lump-sum	1	0	0	
Special measures and treatments during construction	lump-sum	1	0	0	
Noise barriers	PS	1	0	0	
Soil stabilization treatments	lump-sum	1	0	0	
Inspection, monitoring, control and reports	lump-sum	1	0	0	
Fencing H=2.0 m	m	120	0	0	
Asbestos PPE According to EMP	lump-sum	1	0	0	
Bill No.14 Temporary Works and Diversions					

TD-13.1	SET	1	0	0	
TD-22.3	SET	1	0	0	
Bill No.15 Local Road Diversions, Service Roads and Emergency Access to OPAs					
LRD-12.9 (TSEKERE AXIS)	SET	1	0	0	
LRD-13.1	SET	1	0	0	
EAO-12.7	SET	1	0	0	
EAO-22.5	SET	1	0	0	

37. Construction Permit for the campsite has already been obtained from MoESD. Approval for the Kobi Campsite Layout Plan from MoEPA is in process. RD received comments from MoEPA on Construction Camp Layout Plan for Kobi Campsite on 02-12-2020 and RD submitted the reply on 31-12-2020 through letter# N1 2913/01 by addressing the comments from MoEPA. In response to comments from MoEPA on June 4, 2021, Letter # N5653/01, the contractor has submitted the Geological Survey report to combat potential risk of avalanches at campsite to PMCSC through letter# 210525-178-CRTG-UBM. The last comments from MoEPA has been responded on 24-06-2021. MoEPA required some additional information related to the protection measures against the avalanches hazard to campsite and translation of geological report. All the other approvals are also linked with the campsite approvals as all the documents for other project temporary facilities were also submitted altogether with the same letter to MoEPA.

38. PMCSC has approved version G of the Kobi Campsite Layout Plan through letter 2021-03-UBM-CRTG-344 dated:17-03-2021.

Lot# 2

39. Progress of works carried out by Contractor for Lot#2 during the reporting period is summarized below:

- Cut and cover section of exit portal of T1 (Km5+317-Km5+452)

Item	Completed this month	Total completed	Note
excavation of soil and rocks	38000m ³	48000 m ³	
Bolt support on front slope (Φ=40mm)	37*6=222m	222m	
Bolt support on front slope (Φ=25mm)	3*21+1.5*84 =189 m	189 m	
drainage pipe installation on slope=52mm)	36*1.5=54m	54m	
slope support with shotcrete (C30/37)	101m ³	101m ³	

Steel mesh support (150 X 150 X 8)	346+390=706 m ²	706 m ²	The overlap of steel mesh is not included.
The fence with steel tube on foundation pit	340m	340m	

- Topsoil of 6300 m³ has been stripped and the topsoil stored at KM5 + 460-KM6 +800 along the main alignment.
- Clearing of topsoil (KM7 + 000-KM8 +560) has been completed in other places except for the place of cultural relics.
- Under Pass 0.7 KM, a total of 2 sections of floor poured, which are respectively the third section of the second row and the first section of the second row, with total of 150 cubic meters of C30/37 concrete poured and a total of 32.4t of steel (B500C) installed. The pouring of wing wall cushion is completed at culvert exit, with C16/20 concrete of 11.2m³.
- The slope protection of P3 of B2 is completed with 18 bolts, a total of 18×12=216m, 16 drainage pipes, a total of 16m, 72 m² of steel mesh, 16 m³ of shotcrete, 500 m³ of backfilling for P4, and 17m of drilling for P1.
- The slope protection of T1 tunnel entrance is completed with 67 bolts, a total of 67×3=201m, 33 drainage pipes, a total of 33m, 1280m² of steel mesh, 173 m³ of shotcrete, and 68 m³ of cut-off ditches construction.

2.4 Information of Personnel Working on Construction Site

40. Overall staff hired by the contractor CRTG and CRCC up to June 2021 and working at site are given below in Table 5A & 5B respectively:

Lot#1 (CRTG Contractor)

Total number of employees - 532

Foreign Staff - 275

Local Georgian staff (total) – 257

Table 5A: Information of personnel working at site during reporting period (Lot#1)

#	Position	Contractor		Subcontractor		Sum
		Foreigner	Local	Foreigner	Local	
1	Project Manager	1	-			1
2	PM Assistant	1	-			1
3	Chief Tunnel Manager	1	-			1

4	TBM Manager	1	-			1
5	Deputy TBM Manager	2				2
6	Technical Manager	1	-			1
7	Construction Manager	-	1			1
8	QA/QC Manager	1	-			1
9	HS Manager	-	1			1
10	HS personal	3	2			5
11	Environmental Manager	-	1			1
12	ECoW	-	1			1
13	Construction Engineer	-	-			-
14	Technical Department	26	1			27
15	Designer	1	-			1
16	Finance & Administration	8	3			11
17	Commercial Engineer	3	2			5
18	Foreman	18	-			18
19	Repairman	3	3			6
20	Mechanical Department	32	-			32
21	Driver	7	47			54
22	Skilled Labour	159	24			183
23	Unskilled Labour	7	170			177
24	Community Liaison Officer		1			1
	Total	275	257			532

Lot# 2 (CRCC Contractor)

Total number of employees - 194

Foreign staff - 132

Local Georgian staff (total) - 62

Table 5B: Information of personnel working at site during reporting period (Lot#2)

#	Position	Contractor		Subcontractor		Sum
		Foreigner	Local	Foreigner	Local	
1	Project Manager	1	0	-	-	1
2	Site Manager	6	0	-	-	6
3	Construction Engineer	1	0	-	-	1
4	Engineer staff	0	0	-	-	0
5	Technical office	9	0	-	-	9
6	Technicians	0	0	-	-	0
7	Skilled Labour	23	12	-	-	35
8	Unskilled Labour	8	4	-	-	12
9	Driver	2	0	-	-	2
10	Operator	21	19	-	-	40
11	Designer	0	0	-	-	0
12	Finance & Administration	5	0	-	-	5
13	Safety Officers	2	1	-	-	2
14	Environmental Specialist	2	1	-	-	2
15	Foreman	7	1	-	-	8
16	Repairman	2	0	-	-	2
17	Secretary	0	0	-	-	0
18	Security	0	0	-	-	0
19	Forest Expert	0	1	-	-	1

20	Mechanical Department	5	0	-	-	5
21	Tunnel works crew	38	21	-	-	59
22	Community Liaison Officer	-	1	-	-	1
23	Ecological Clerk of Works	-	1	-	-	1
24	Cultural Heritage Experts	-	2	-	-	2
	Total	132	62	-	-	194

41. The graphical presentation of number of foreign and local staff hired by the contractor CRTG and CRCC and working at site is shown in the figures 3A & 3B respectively.

Figure 3 A: CRTG Personal at site as of June 2021 (lot#1)

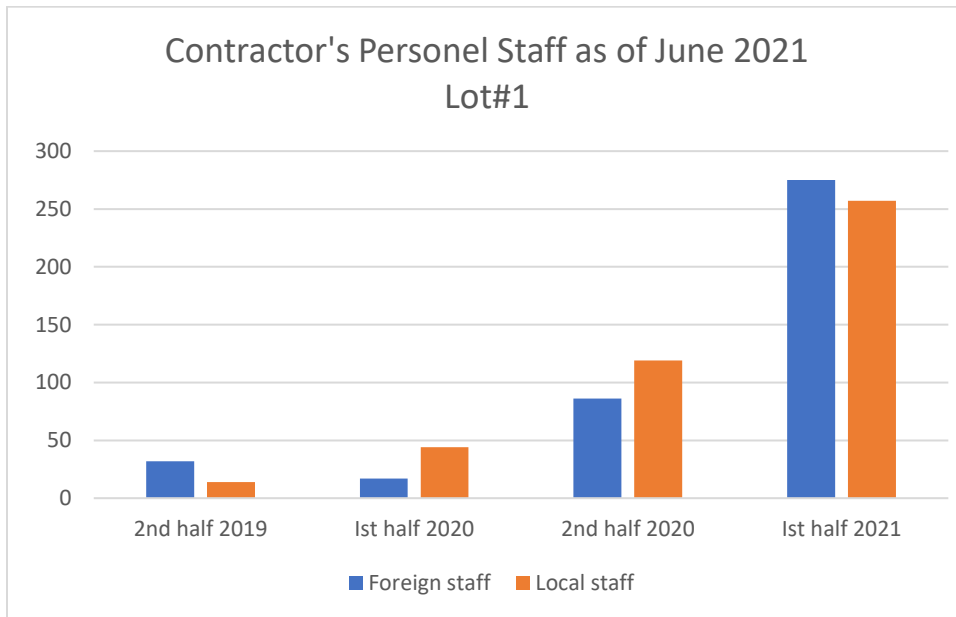
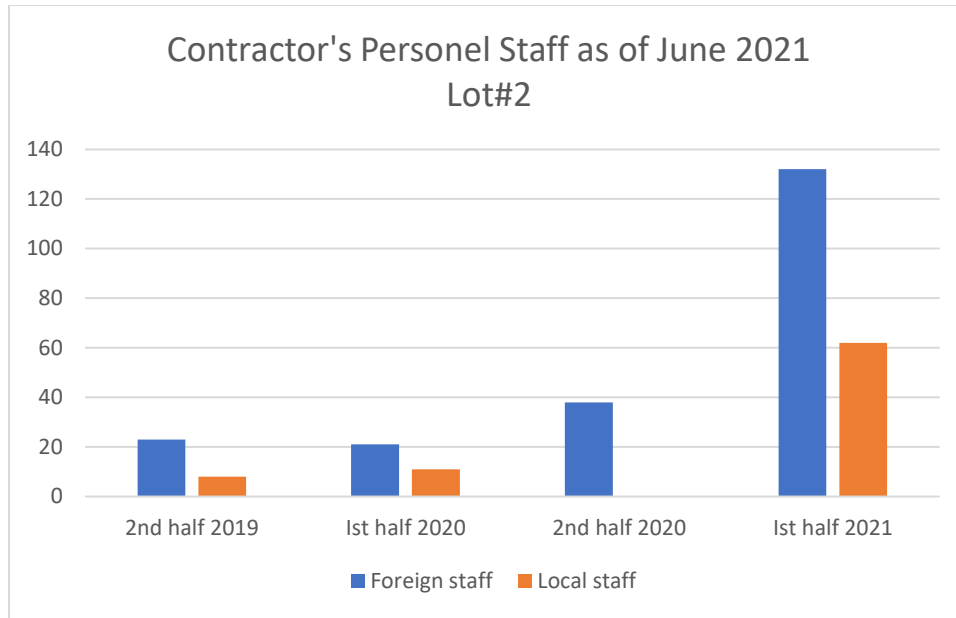


Figure 3 B: CRCC Personal at site as of June 2021 (lot#2)



42. Information regarding the mobilization of “Project Management and Construction Supervision Contractor (PMSCS) staff is given in the Table 6.

Table 6: Information of PMSCS (Engineer) Staff and Mobilization Status (June 2021)

NO	Name of Team Member	Position held	Mobilization Status
International Staff			
8	TURGUT DURMAZ (CP01,CP02)	Senior Occupational Health and Safety Specialist	Mobilized
10	ABDUL HAMEED (CP01,CP02)	Resettlement/ Social Development Specialist	Mobilized
11	KASHIF BASHIR (CP01,CP02)	Senior Environmental Specialist	Mobilized
National Staff			
10	NIKOLOZ SOPHADZE (CP01,CP02)	Environment Specialist	Mobilized
11	TAMAR JAVAKHI (CP01,CP02)	Resettlement/ Social Development Specialist	Mobilized
12	DAVIT KVIRKVELIA (CP01,CP02)	Senior Occupational Health and Safety Specialist	Mobilized
13	ZAZA DEVDARIANI (CP01,CP02)	Road Safety Engineer	Mobilized
Non-Key Staff			
9	NIKOLOZ TSKVITINIDZE (CP01, CP02)	Cultural Heritage Expert	Mobilized

2.5 Description of Any Changes to Project Design

43. The contractor for lot#1 wrote the PMCSC regarding the problem with the design drawing of the TBM setting out through letter# 2001109-0268-CRTG-UBM dated 09-11-2020. PMCSC responded the contractor to submit the probable design solution for the said problem so that PMCSC can evaluate (reference letter # 2020-11-UBM-CRTG-240 dated 26-11-2020). The Contractor submitted his design solution via letter #210113-0014-CRTG-UBM dated 13-01-2021 and PMCSC approved the solution through letter #2021-02-UBM-CRTG-310 dated 10-02-2021.
44. The Contractor for lot #1 submitted the problems which may resulted from the original design gap injection through letter #201207-0289-CRTG-UBM dated 07-12-2020. PMCSC responded the Contractor to submit the detailed solution with a method statement via letter #2020-12-UBM-CRTG-263 dated 24-12-2020. The contractor submitted the MS of gap injection in TBM tunnel through letter #210326-0087-CRTG-UBM dated 26-03-2021. PMCSC asked for the financial proposal through letter #2021-04-UBM-CRTG-377 dated 17-04-2021. The Contractor submitted the modified MS and the financial proposal through letter #210629-0181-CRTG-UBM dated 29-06-2021.
45. The Contractor for lot 1 submitted the variation proposal for traffic substructure through letter #201003-0223-CRTG-UBM dated 03-10-2020. PMCSC stated he had started to review the technical advantages and disadvantages and requested for some clarification for the cost calculation through letter #2020-10-UBM-CRTG-201 dated 23-10-2020. The Contractor submitted the clarification and support documents via letter #210111-0011-CRTG-UBM dated on 11-01-2021. PMCSC requested for clarification for joints and time of construction via letter #2021-02-UBM-CRTG-313 dated 17-02-2021. The Contractor submitted the modified design solution through letter #210326-0088-CRTG-UBM dated 26-03-2021. PMCSC commented design error and proposed box culvert solution via letter #2021-04-UBM-CRTG-381 dated 26-04-2021. The Contractor submitted the updated design solution via letter #210604-0154-CRTG-UBM dated 04-06-2021. PMCSC commented on the cost calculation via letter # 2021-06-UBM-CRTG-441 dated 30-06-2021.
46. The Contractor submitted transportation arrangement in Emergency Gallery through letter #210112-0012-CRTG-UBM dated 12-01-2021. PMCSC requested financial proposal and project risk mitigation via letter #2021-02-UBM-CRTG-317 dated 18-02-2021.
47. The Contractor submitted the proposal of extension buried tunnel (cut and cover section) to avoid residential building at Tskere side through letter #210422-0114-CRTG-UBM dated 22-04-2021. However, this may cause some geological risk and PMCSC asked for geotechnical investigation-calculation and cost comparison via letter #2021-06-UBM-CRTG-407 dated 02-06-2021.

2.6 Description of Any Changes to Agreed Construction Methods

48. No changes to the agreed construction methods were approved during the reporting period. However, PMCSC warned the CC through letter # 2020-11-UBM-CRTG-217 dated 11-11-2020 and 2020-11-UBM-CRTG-241 dated 26-11-2020 that CC for lot#1 is using the lattice girders without elephant foot in rock support class-4. The matter was also

discussed in the progress meeting on 24-11-2020. CC for lot#1 is required to submit the method statement for lattice girder manufacturing and clarify the time and the method to complete the missing part of the lattice girder already installed in the emergency tunnel. Furthermore, PMCSC also highlighted the gaps at the crown and demanded the method statement to fill out these cavities. The Contractor submitted the MS for lattice girder through letter # 201208-0292-CRTG-UBM dated 08-12-2021 and finally approved by PMCSC via letter #2021-01-UBM-CRTG-299 dated 29-01-2021.

49. PMCSC through letter# 2020-11-UBM-CRTG-250 dated 04-12-2020, warned the CC for lot#1 regarding the scaling being carried out by excavator bucket is not acceptable and it should be carried out by hydraulic rock breaker mounted on the excavator or backhoe loader to remove the shattered or loose rock according to subclause 11.4.24 of technical specification. PMCSC highlighted also in the meeting on 08-07-2021 that the scaling should be carried out before shotcrete; otherwise, there would be a risk of falling of loose rock. CC need to prevent the risk of the falling of the loose rock.
50. At TUN#5 North portal there was a landslide due to slope failure. CC for lot1 need to rehabilitate that by slope protection work by constructing retaining wall and controlling the water flow causing the slope failure. Otherwise, private land would be disturbed creating the chances for complaint from the landowner. CC to provide more anchor bolts as the distance in between anchor bolt is more than that in the design.

3. ENVIRONMENT SAFEGUARD ACTIVITIES

3.1 Description of Environment Safeguards Activities

51. **General** - During the daily monitoring, the PMCSC's environmental specialists check the environmental impacts caused by the construction activities and the compliance with the requirements of EMP and conditions of contracts.
52. **Biodiversity** – The Project Management and Construction Supervision's international environmental expert is responsible to prepare Biodiversity Monitoring and Evaluation Program (BEMP) and monitor the implementation of Biodiversity Action Plan (BAP) along with the contractor's Ecological Clerk of Works (ECoW).
53. A standalone Project "Biodiversity Action Plan (BAP)" for those specific species or habitats of greater note has been prepared. The BAP will help ensure no net loss, or if required, net gain of natural habitats and support notable species of conservation importance. The responsibility for the implementation of the BAP is both with the PMCSC and Contractor who will outsource specific components of the BAP to external organizations, such as conservation societies, NGOs or universities.
54. PMCSC during the meeting on February 19, 2020 advised both the contractors to hire ECoWs for biodiversity survey before start of construction activities. CC for lot # 1 has hired Lela Bachiashvili; while, CC for the Lot#2 hired Tamta Kapandze as ECoW in June 2021.

ECoW of the Contractor for Lot#1 carried out the preconstruction biodiversity survey for lot#1 in July-August 2020 and CC for Lot# 2 Carried out Preconstruction biodiversity survey in June 2021(Survey report attached as Annex-9).
55. **Cultural Heritage** - Cultural Heritage (CH) Monitors of "Project Management and Construction Supervision Contract (PMCSC) and contractors shall ensure the protection of cultural heritages in the Project Area of Influence (AoI) in accordance with the Georgian Law of Georgia on Cultural Heritages and coordination with The Ministry of Culture and Monument Protection of Georgia.
56. No earthworks were carried out during the first quarter of the year 2021 due to heavy rains in the Project area. However, in April 2021 archaeologist from NACHP started archaeological excavation works at plateau (Lot 2) and completed the excavation work by June 2021. All CH sites has been demarcated, and signs have been posted for the CH sites. fenced and demarcated. First version of the interim report 2 for cultural heritage survey has been submitted by NACHP and Cultural Heritage sites monitoring are monitored by PMCSC CH specialists.
57. **Non-compliance** - In case the non-compliance is detected (with the photo evidence) it would be recorded, and the Contractor will be informed in written by issuing the Non-Compliance Report (NCR) to take corrective actions. Contractor is required to take the corrective action during the time period mentioned in the N. PMCSC's environmental expert will follow up for the corrective action and inspect the site. If during the inspection the Contractor fails to satisfy about the corrective actions, another NCR will be issued. There are twelve (12) NCRs issued to the Contractors out of which two have been closed

officially. Before issuing NCR, the issues are being highlighted through E&HS weekly reports and based on these CC is providing Corrective Action Reports to close these issues and if not resolved PMCSC is issuing the NCR to CC.

58. **Reporting** - The PMCSC's environmental specialists prepare the monthly and semi-annual reports that would be submitted to the RD. These reports depict the ongoing construction activities, environmental issues and the status of compliance. Contractors is submitting the quarterly EMR as set in the EIA for lot 1 and lot 2.
59. **Site Visits** - Environmental specialists of the contractor and the PMCSC conduct weekly site visits to monitor the compliance of EMP. In addition to that HSE specialists of contractor and PMCSC monitor the compliance of Personal Protective Equipment (PPEs), traffic safety and the other safety related issues on daily basis. Daily Health, Safety and Environmental (HSE) report is the part of Daily Quality Control (QC) Report.
60. Activities carried out by consultant during the monitoring period (international and national, respectively) is provided in Table 7 below.

Table 7: Environmental Safeguards Activities Carried out During Reporting Period (Jan – June 2021)

Environmental Safeguard Activities
The International environmental expert (Kashif Bashir) of Supervision Consultant (UBM)
<ul style="list-style-type: none"> - Field activities : Monitoring of the non-compliances related to construction works including switching ON for tunnel ventilations while workers inside the tunnels, Tunnel water discharge from the tunnel 5 through the sedimentation tank, dust emissions, noise generation activities, wastewater discharge from construction activities, access road conditions, drainage at the Batching Plant, oil spills, topsoil storage, provision of drip trays to generator and machines with the risk of oil spill, concrete washout spill, chemical spills at site, provision and enforcement to wear PPE and other HSE related tasks, water sprinkling at access roads, waste handling at campsites and other project related facilities, sewage handling, arrangements to avoid river water pollution, and issuing the NCRs for non-compliances observed with the help of National expert. Noted the good practices and corrective action taken by the CC both on lot# 1 and lot#2 by the Contractors. - Review of SAEMR. Prepared the Semi-annual report based on the non-compliances observed and NCRs issued during the reporting periods, corrective actions taken by the contractors and further recommendations made by PMCSC for the upcoming quarters of the years. - Ensure the corrective actions are implemented by the deadline. Followed up with the CC for the Corrective action during the weekly progress meeting and by writing letters for the compliance. - Coordination with RD and the lenders, attended meeting with client, lenders and contractors.
The national environmental expert (Nikoloz Sofadze) of Supervision Consultant (UBM)
<ul style="list-style-type: none"> - Field Activities: Prepared the Checklist, monitored the campsites and active construction sites with CC environmental officer, gave instruction for the non-compliances observed in



the field and issued NCRs along with corrective actions to be taken. Prepared the weekly HSE monitoring report. Ensured the instrumental monitoring is being carried out by the certified laboratory for air, noise, ground water, surface water and vibration on monthly basis.



- Monthly EMR: Coordinated with International Expert for preparation of monthly EMR and reviewed the CCs EMR and Instrumental monitoring reports.
- Ensure the corrective actions are implemented, followed up with the CC in weekly progress meetings to take corrective actions and replied the letters from RD and CC.



3.2 Site Audits

61. On February 11, 2021 and June 2021 ADB Mission team accompanied by RD and UBM team visited the site to check the ongoing construction activities and environment compliance. The team highlighted the non-conformances at the site and required corrective actions and process to be followed for managing compliance.
62. Frequent sites visit were being carried out by the PMCSC environmental experts and TL of the PMCSC of the active construction site at Tunnel #5 north portal and emergency gallery and Lot 2 to monitor the compliance of mitigation measures suggested in the EMP.
63. The method adopted for inspection include visual inspection, interview with workers and community and checking the accident records, permits obtained, daily and weekly quality control reports.
64. Identified non-conformance of the EMP and SEMP with corrective actions required and status of action during the reporting period (Jan-June 2021) are given in Table 8.

Table 8: Identified Non-Conformances (January - June 2021)


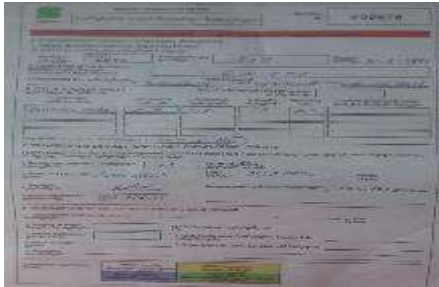
ID#	Affected Location	Date	Issue raised	Mitigation Required	Estimated time	Corrective Actions	Status of Action
1	North portal Kobi	Jan 2021	<ul style="list-style-type: none"> • Drip trays not provided under the oil drums and water reducing chemical containers • Hazardous waste containers are not provided at the site to store hazardous material. • Spill kits to be provided by the CC at the site 	<p>CC for lot#1 should provide dip trays, under all oil drums, chemical containers</p> <p>CC to provide hazardous waste containers at site</p> <p>Cc to provide spill kits at the site</p>	Immediately	<p>CC provided the spill kit at the site and distributed these at the site near the oil contained facilities .</p> <p>Containers for hazardous waste are provided at the site</p> 	<p>Open</p> <p>CC to complete requirements and provide the drip trays for the chemical containers which are in use.</p>



						 <p>Drip trays for drums are provided by cutting the used chemical containers to provide secondary containment</p> 	
2	Campsite Lot 1	Jan 2021	Waste scattered in front of engineer's office in Kobi campsite	CC for Lot#1 should arrange proper waste disposal areas according to lay out plans	Immediately	Waste bins installed with plastic bins in it and Containers were provided from where municipality Compactor is carrying the waste on daily basis	Closed

							
3	North portal Kobi side segment plan territory	Jan 2021	Sedimentation tank required to treat the tunnel water coming out from the emergency gallery .	CC for lot#1 should provide detail drawings and locations, where and how the sedimentation tank will be arranged	Immediately	Sedimentation Tank with the capacity of 640 m ³ / hr. provided to treat tunnel water consisting of three sections. The overall treatment system includes five ponds in series starting from collector to the sedimentation tank and then water passes through the three settling	Closed However, as volumes have increased further





					<p>ponds across the road and sludge from these sedimentation tanks and ponds is being collected on regular basis and disposed of in Spoil Disposal Area # 1</p>  	<p>requirements to improve management of tunnel water are on-going and sediment management are required.</p>
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4	North portal Kobi side camp	Jan 2021	Provision of waste delivery receipts to PMCSC	CRTG should provide the record to PMCSC of handing over the waste to subcontractors	One week	Delivery receipt provided to the PMCSC and attached as Annex 11 	Closed
5	North portal Kobi side camp	Jan 2021	Oil spill observed at several locations of about 2 to 3 liters due to leakage from spare parts and dripping of oil during refilling of diesel in to trucks.	CC for lot#1 should collect the contaminated soil, store in the hazardous material storage area and hand over to the subcontractor for hazardous waste collection	immediately	Contaminated soil was removed and stored in hazardous storage area. It was taken by the sub-contractor Medical Technology LLC in June 2021 responsible for collection, transportation and treatment of the hazardous waste. License shown in the picture below	Closed



						<p>የግብርና ሚኒስቴር ስምምነት ቁጥር 17/06-15</p> <p>ቀን 2021</p> <p>የግብርና ሚኒስቴር ስምምነት ቁጥር 17/06-15</p> <p>የግብርና ሚኒስቴር ስምምነት ቁጥር 17/06-15</p> <p>የግብርና ሚኒስቴር ስምምነት ቁጥር 17/06-15</p> <p>የግብርና ሚኒስቴር ስምምነት ቁጥር 17/06-15</p> <p>የግብርና ሚኒስቴር ስምምነት ቁጥር 17/06-15</p> <p>የግብርና ሚኒስቴር ስምምነት ቁጥር 17/06-15</p>	
6	North portal Kobi site	Jan 2021	Paint buckets left at the site on the ground	Paint bucket need to be collected, stored in hazardous waste area and handing over to the subcontractor	Immediately	 <p>Paint buckets collected in hazardous storage area. These were taken by the subcontractor in June,2021</p>	Closed

							
7	North portal Kobi site	Jan 2021	CC TV cameras installed but warning signs are missing 	CC to put the warning signs stating the area is being monitored by cameras	Two weeks	The surveillance cameras are installed in campsite The warning signs provided with the Cameras 	Closed
8	North portal Kobi site	Feb 2021	Snow between campsite and offices blocking the access	CC to remove snow on daily basis for the safety of pedestrians	Immediately	The snow was removed by loader immediately	Closed

							
9	Lot#2	Feb 2021	Oil Spill due to improper refueling of Dumper Truck from the diesel tanker for lot #2. 	CC to provide secondary containment for refueling and trucks should get the fuel from the nearest fuel station. CC to collect the contaminated soil, store in the hazardous material storage area and handover to subcontractor	One month	Currently CC for lot# 2 arranged drip trays for oil containing facilities and installed new refueling facility at Plateau near BP# 2 	Closed

							
						<p>CC collected the contaminated soil and handed over to the subcontractor hired for collecting hazardous waste.</p>	
10	Lot#1 TUN# 5 Kobi	Feb 2021	During winter workers were warning hands by burning wood near tunnel portal.	CC to provide heaters inside the cabin near tunnel portal	Two weeks	<p>Heating facility provided for the workers inside the Cabin close to tunnel 5.</p> <p>Training provided to the workers to restrict the open burning of wood.</p>	Closed

							
11	Lot#2 Camp 2	Feb 2021	<p>Waste scattered on site and there is no proper waste disposal area</p> 	<p>CC for Lot#2 to arrange the waste disposal area and scattered waste should be collected immediately</p>	<p>Collect and waste immediately and arrange waste disposal arrangement and bins in two weeks</p>	<p>Waste bins are provided on the Site. Toolbox trainings are conducted to the staff about waste management, its issues, etc.</p> 	Closed

							
12	North portal Kobi	Feb 2021	<p>TBM workshop construction is also in progress. The workshop area was fenced with tapes to avoid accident of population and workers, but safety measures at some trenches should be improved.</p> 	<p>ADB Mission advised the Contractor to erect secure robust safety barriers around the whole perimeter of opened trenches of TBM workshop area</p>	March 2021	<p>Barricade with warning tape improved around the trench to prevent falling hazard</p>  <p>Currently TBM also moved to that Area so risk removed.</p>	Closed

							
13	North portal Kobi	Feb 2021	<p>During the site visit the following non-conformities with regard to waste management good practice were observed:</p> <ul style="list-style-type: none"> i) rubbish bins were not sufficient for the project waste volumes; ii) no plastic bags were provided inside the waste bins; iii) no Material Safety Data Sheet (MSDS) and no fire extinguishers observed nearby; iv) a register of hazardous materials on site was not available; v) chemicals are stored in the open space without 	Waste management and good housekeeping practices according to waste management plan	One month	<p>Rubbish bins: Additional 10 bins (105cm*120cm*95cm) for household waste provided with 1.2 m³ capacity</p> 	<p>Open</p> <p>CC to provide Plastic bag in each container. Currently plastic bags are being provided in the bins installed in engineer's office</p>

			<p>rain protection, without drip trays;</p> <p>vi) waste containers at batching plant were not placed at the special dedicated area with roofing and frost and snow can damage the containers</p> <p>vii) no drainage system is arranged around the hazardous storage area at the crushing plant and in case of spill hazardous liquid substance can pollute the soil.</p> 			<p>20 bins(70cm*45cm*30cm) with 0.1 m³ capacity were placed in accommodation area</p>  <p>8 bins (90cm*50cm*35cm) with 0.16 m³ capacity on construction area for hazardous and inert waste.</p>  <p>All bins are kept clean and washed when necessary.</p>	
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The MSDS is available in the office and attached. Fire extinguish installed for flammable material




Hazardous material was removed from the Site, the documentation is available on the Site.

Chemicals in plastic containers are placed on a concrete base and covered, Furthermore the chemicals are stored in a warehouse, Drip trays for oil barrels are in use.

					 	
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					 <p>Waste bins are placed under the covered space</p> <p>Bunds have been built around the hazardous material storage area at the crushing plant to capture and contain the chemical spill in case of spillage. The floor of the storage area is impermeable and built by concrete .</p>	
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14	North portal Kobi side	Feb 2021	Sewage treatment plant (STP): The Contractor has prepared a Wastewater Management Plan. At the time of the site visit a sewage treatment plant (STP) consisting with two reservoirs with capacity 100m ³ applying biological treatment method was constructed and the sewage generated on the site comprising sanitary wastewater (sewage) and domestic wastewater (wastewater from kitchens, showers, washing facilities) conveyed to the STP for treatment). At this stage the STP is closed by concrete blocks but soon it will be closed with a roof. Fencing is also should be installed around the reservoir. In the future, the treated sanitary wastewater will be discharged into the Narovani River which flows adjacent to the Accommodation	Sewage to be treated to meet the National and IFC requirements. CC required to obtain the approval from MoEPA ASAP.	One month	<p>Treated water from the wastewater treatment plant is not discharged into the river, as there is still no MoEPA approval for the maximum permissible levels of pollutants discharged into the river from the WWTP. The contractor removes waste water from the tank by the subcontractor "Sanitary ltd". The documentation is available on the Site.</p> <p>Discussed in detail with CC in weekly progress meeting on 9-06-2021. CC replaced the old treatment plant with the new on at Septic tank which was not working properly. Cesspool truck is carrying out the sewage</p>	Open


Camp. Sludge will be pumped out and discharged into the Municipal wastewater collector. Currently, the STP does not have an oil and grease separator, which should be separately arranged for treatment of kitchen wastewater. At present, contractor is preparing report of maximum allowable discharge levels for discharged pollutants into the river Narovani to be submitted to MoEPA in February 2021 for approval. After MoEPA's approval treated wastewater can be discharged into the river Narovani after testing to meet Project standards.








Currently sewage truck also carrying the wastewater from the gutter for kitchen separately: however, CC is ready to build an oil grease trap near the kitchen

						
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15	North portal Kobi side camp	Feb-April 2021	<p>Rainwater drainage was partially constructed at the time of the site visit. No progress has been observed for completing the planned works. The rainwater runoff will be collected and drained to a basin (not constructed yet). The network will be equipped with sand traps (though not installed yet). The basin will be equipped with a 3-stage oil-water separator, the collected rainwater after passing through the oil-water separator will be discharged to the river. The discharge point is currently unknown. Contractor plans to resume rainwater drainage construction as soon as weather conditions will be improved.</p>	CC to build the drainage system for the campsite	Two weeks	<p>. CC has built the hard floor by concreting the floor of the campsite and provided the drainage ditches to carry the stormwater . Even after heavy rain water is being absorbed by the soil very quickly. However, some water ponding was observed along the access road close to E117 Highway and CC is pumping that water, when required, and spraying this water on the access road.</p> 	<p>Open Kitchen wastewater r is disposed through septic tank and wastewater r being collected by LTD Sanitary .</p> <p>Oil trap to be installed for kitchen wastewater r.</p>
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16	North portal Kobi side camp	Feb-April 2021	<p>Workers accommodation: Accommodation conditions of workers at the camp site of contractor is poor and not in line with the requirements of ADB and IFC. The following non-compliances with regard to hygiene were identified at the site:</p> <p>i) in some cases, there is not enough space for living,</p> <p>ii) rooms are equipped only with beds, no drawers and no closet;</p>	Workers and working conditions to be according to IFC and ADB requirements	One Month	<p>1) Contractor plans to provide some more dormitories for the Contractor's employees. Currently, each dormitory (about 20 m² room) is accommodated with 4 residents and is equipped with the double deck bunks (with enough clear space between the lower and upper bunk of the bed).</p>  <p><i>New Constructed Dormitory</i></p> <p>2) Contractor has provided the drawers and cabinets in some rooms. The same is required for all room.</p>	Open In progress
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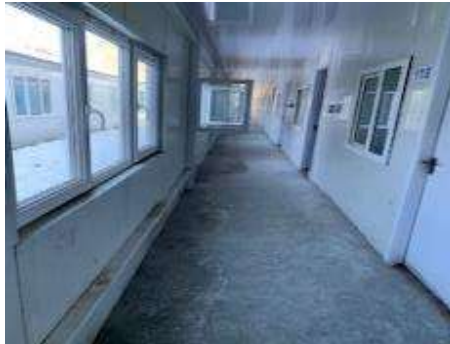
			<p>iii) clothes washing room is not equipped with washing machines;</p>			 <p><i>Room with Cloth Wardrobe.</i></p> <p>3) The facilities for washing and drying the clothes are equipped with sinks with hot and cold water. CC provided two washing machines which are in operation for the workers in laundry room.</p>	
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			<p>iv) conditioning system is not installed and cleanliness were not kept;</p> <p>v) bathroom area, toilets and clothes washing area are located over 200 m away from the accommodation rooms;</p>			 <p><i>Washing facility</i></p> <p>4) Contractor has hired 5 persons for cleaning to ensure cleanness of the dormitories. As the construction camp is not located in the hot weather zone, the highest temperature will not exceed 25°C. Contractor does not plan to provide air conditioning system, the dormitories are provided with windows and could be naturally ventilated; In order to provide enough heat in cold weather, heating radiators are installed in each dormitory.</p> <p>5) Contractor provided toilets and bathrooms for each row of the accommodation rooms (16 rooms in each row) and they are located in about 30 m from the farthest accommodation room;</p>	
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			vi) in one of the rooms stray dog was observed;		<p>All toilets are being cleaned and sterilized regularly. CC provided the covered walkway in front of every line of the dormitory rooms so that the workers should not be exposed to cold winter while approaching the toilets.</p>  <p><i>New Constructed Lavatory and Bathroom for Dormitories</i></p> <p>6) CC ; has hired the licensed company British Pest Control Association (BPCA) to collect the stray dog and stray dogs have been taken by them.</p>
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vii) in two rooms electric stoves for cooking were observed . ADB Mission required CC to improve workers' accommodation conditions maintaining good housekeeping and prohibiting presence of stray dogs and electric stoves in the room.






7. Contractor has arranged the separate kitchen for Chinese staff, Georgian staff and engineer with cooking staff. kitchen/canteen area for local staff; .





							
17	North portal Kobi site	Feb - April 2021	Besides some improvements regarding the H&S the following non-conformity issues related to occupational health and safety	CC to ensure the safe work practice , provision of First aid arrangements and ambulance service	One month		Open Ambulance to be at




		<p>practice were observed during the site visit:</p> <p>i) Not all workers wearing PPE (some not wearing a helmet and/or safety boots);</p> <p>ii) Power cables are not installed according to safety requirements;</p>			<p>1) The appropriate PPE including fall arrest harness are distributed to all of workers, SHE department will supervise and enforce the workers to wear PPE on site at all time.</p>  <p>2) Power cable are installed properly on site</p>	<p>the site all the time;</p> <p>All sites to be fenced;</p>
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			<p>iii) Construction camp and other facilities are not fenced and restricted from unauthorized entry, therefore there is a possibility that the local community may enter the project areas without wearing PPE;</p>			<p>3) Security guard hired and performing their duty to restrict the unauthorized entry and trespassing. Fence for the campsite has been completed, although fencing for difference sites still pending. .</p>
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			<p>iv) Visitors undergo safety inductions; however, they are not informative or always happen;</p>		 <p>4) All of the visitors are to be given safety introduction before visit site.</p> 	
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			<p>v) Currently, doctor is available and medical facility is arranged on site, but ambulance is not mobilized yet, which is necessary, especially for on-going blasting activities for tunnel north portal construction works, therefore no arrangement available for transporting of injured workers to hospital;</p>			 <p>5) The doctor is on duty at site, Ambulance provided by "Mkurnali 750303" Ltd and was at site up to June2021. Currently it has been sent back to the company for updating the facilities in the ambulance.</p> 	
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					<p>Each work site is equipped with one certificated first aider</p> <p>First aid room is established and approved</p> <p>Daily Tool Box Talking is conducted to workers</p>  <p>6) Bio toilets are installed on site for employees</p>	
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			vi) Bio toilets are not available on the construction locations.				
18	North portal Kobi Crushing plant	March 2021	The fence around the trench is damaged and covered by snow posing the hazard 	CRTG has to repair and reinstall the fences	Immediately	The fencing is re-installed . No open trench seen at the site 	closed



19	Campsite Kobi site	March 2021	<p>Kitchen inspection is not performed by the contractor. The contractor has to start hygienic inspection of the kitchens, canteens, food storage areas on a weekly basis. The inspection must be conducted by CRTG's doctor and HSE manager</p>	<p>CC for Lot#1 to improve hygienic conditions in the kitchen, tidy and clean kitchen. The inspection must be conducted by CRTG's doctor and HSE manager. After each inspection CRTG has to prepare report with photo evidences and it should be submitted to the PMCSCs on weekly basis.</p>	One week	<ol style="list-style-type: none"> 1) The regularly week inspection of kitchen is performed by doctor and HS manager 2) The screen window is installed to prevent the entrance of Flies and mosquitoes 3) The ground is covered by hard flooring 4) The daily cleaning is being performed by designated persons 	Closed
20	North portal Kobi side	March 2021	<p>Waste scattered at the site. Cleanliness and tidiness are very low standards all throughout the construction areas and Campsite. Housekeeping shall be improved.</p> 	<p>CC for lot#1 to remove the waste from the site and adopt good housekeeping practices.</p>	Immediately	<p>Cleaning staff is hired, housekeeping is improved</p>	closed

							
21	North portal Kobi side camp	March 2021	Almost all contractor's personnel are not equipped with proper PPE. The welders are working without special PPE; All workers are not using safety boots; none of them using ear protections in the emergency tunnel, to combat the noisy drilling activity.	CRTG should provide the PPES according to the nature of jobs for head-to-toe protection and enforcement to wear the PPEs through supervisors	One week	Special PPE s provided to welders according to the nature of Jobs Safety boots are provided to all of workers 	Closed



							
22	North portal Kobi side camp	March 2021	<p>The unsafe act was observed during the site inspection in the construction area, where preparation works for TBM is ongoing. Two persons were controlling the load by hand rather than using ropes as per good practice.</p> 	<p>The contractor to stop the unsafe act and should instruct its personnel to control the load with ropes. CRTG has to improve HSE supervision on sites to Prevent similar disorders. The lifting activity must be performed according to safe lifting procedure</p>	immediately	<p>The unsafe activity was stopped immediately</p> <p>The safe lifting procedures were shared with the workers</p> <p>The OSHA company conducts rigger man training to lifting team</p> <p>The matter is being highlighted in daily Tool Box Talking</p> 	closed

							
23	Lot#1	April 2021	<p>Hazardous waste scattered on the ground</p> 	CC to store the hazardous material in the designated area for hazardous waste and to be collected by Ltd. sanitary	Two weeks	CC stored the hazardous material in Hazardous storage area and removed by the LTD Sanitary	Closed
24	Lot#1 Kobi Emergency Tunnel	April 2021	<p>Missing Emergency Lights</p> <p>Emergency lights are missing in the emergency tunnel. CRTG has to install Emergency lights through the tunnel</p>	CC to provide Emergency lights in the emergency tunnel immediately	immediately	<p>Emergency lights provided in the tunnel</p> 	Closed


							
25	Lot # 1 TUN 5 (Pending from Previous Report)	May 2021	Refueling Facility Needs to be maintained Properly causing safety risk and rain water around the Tank 	Refueling facility needs to be provided with roof and a wall to restrict the entry of stormwater inside	One Month	Discussed in detail with CC in weekly progress meeting on 9-06-2021 	Open CC started working on that
26	Lot 1	June 2021	Fugitive dust emission due to traffic on E-117 around the construction site	CC to carryout water sprinkling on regular basis	Immediately	Water truck continuously sprinkling water at E-117 highway and the active construction sites including segment factory area, batching plant and crushing plant.	Closed



							
27	Lot 1	June 2021	Excavator working close to undiscovered grave along the bank of river Narvani can cause damage to the grave	CC to install the fence along the grave	Immediately	CC installed the fenced around the grave immediately after pointed out by PMCSC	Closed




							
28	June 2021	Lot 1 Campsite	<p>Gas Cylinders were placed in the cage near kitchen without fire extinguishers and warning signs</p> 	<p>CC to provide warning signs and Fire extinguishers for Cylinders Cage</p>	Immediately	<p>CC provided the fire extinguishers and warning signs at the cage where cylinders placed for cooking and fenced it from the front.</p> 	Closed

29	June 2021	Lot 1 Kobi site	<p>Flag man not performing their duty actively while vehicles crossing the E-117 highway</p> 	Flag man to be on duty during the working hour	Immediately	<p>Advised the flagman to be present outside the security cabin; however, enforcement is required</p> 	closed
30	BP Lot 1		Concrete flooring required at the BP	CC to provide the hard-concrete floor at the batching plant site	One Month	CC started to build the drainage system, upgrade the concrete washout facility, and drainage system with the retaining walls at BP	Open In progress




							
31	BP Lot 1	June 2021	Crackes in the foundation structure of Silos for Batching Plant	CC to repair the cracks and strength the structure based on distributed load on the foundation	One month	Cracks repaired by CC 	Closed






							
32	Behind Segment Plant Lot# 1	June 2021	CC collected the topsoil from temporary storage areas and collected behind segment factory; however storage does not meet the legal requirements	CC need to separate the scrap yard from the topsoil storage areas and fencing the soil with curtain to avoid the soil erosion with proper drainage	One week	CC stored the topsoil at one location behind segment factory. Provided the fence, signage installed. Silt fence required to avoid soil erosion. Scrap need to be separated from the topsoil by demarcating the area for the scrap	Open In progress





							
33	Crushing Plant Lot 1	June 2021	Fugitive dust emission due to accidental closure of water sprinkler system of crusher	Regular inspection for water sprinkler system is required	One week	Water sprinkler system restored in a minute to normal conditions	Closed





							
34	Kobi Site Lot 1	June 2021	CC to provide guard rail on old bridge being used by CC on Baidara river near segment Plant	CC to provide the guard rail for safety of human and vehicle passing from the bridge	One month	CC provided the guard rail to the bridge	Closed
							
35	Kobi Site Lot 1	June 2021	No stairs provided for safe access to the warehouse at batching plant	CC to provide retaining wall and	Two weeks	CC provided the access to warehouse and constructed the	Closed





			. Retaining wall also required to avoid soil erosion	access warehouse to		retaining wall and drainage at BP# 1 	
36	Lot 2 Access roads	June 2021	Dust on Gauduri Access road for Lot 2 Capm 2 and north portal for tunel 1 	Regular sprinkling of water at access road especially near to residences	Immediately	CC carrying out the regular water sprinkling 	Closed
37	Lot 2 Camp 2	June 2021	Waste scatterd 	Waste need to be collected and hard flooring of stripped land required	2 weeks	Area cleaned and CC build the concrete floor 	Closed


38	Lot 2 BP 2	June 2021	<p>Storage of hazardous Material</p> 	<p>CC to store the drums at the hard floor and provide drip trays</p>	2 weeks	<p>Drums on Hard floor and covered by Tarpaulin, Advised CC to provide drip trays at site and provide under the drums while shifting oil. CC started providing drip trays for generators, machines.</p> 	Closed
39	Lot 2 BP 2	June 2021	<p>Rebar Cutting Machine oil leakage and welding workshop on stripped/ bare land</p> 	<p>Rebar cutting machine to be shifted on hard floor and repaired for the oil leakage and welding workshop need to be shifted</p>	2 Weeks	<p>CC shifted the rebar facility to hard floor</p>	Closed

							
40	Lot 2 BP 2	June 2021	Unsafe slabs placed at Batching Plant 	Slabs need to be shifted at appropriate location	One week	Slabs shifted to appropriate place 	Closed
41	Lot 2 BP 2	June 2021	Workers not wearing appropriate PPEs according to nature of job 	CC to provide PPEs according to nature of job and enforcement to wear it from head to toe protection	Immediately	Full set of PPEs provided for the welding activity 	Closed
42	Lot 2 BP 2	June 2021	Access Ladder for water reservoir	Access ladder with hand rail required	One week	Access Ladder provided with handrail, Area Fenced	Closed

							
43	Lot 2	June 2021	<p>Unsafe lifting operation for concrete slab</p> 	<p>Safe lifting procedures required with training of the workers involved</p>	One week	<p>Safe working procedures adopted at BP 1 Lifting training provided to the staff The mentioned equipment was removed from the site.</p> 	Closed
44	Lot 2 Camp 2	June 2021	<p>Oxygen Cylinders Placed on the Ground</p>	<p>Cylinders to be placed in vertical position in cage and special trolley should be used for welding purpose</p>	One week	<p>Cylinders placed in cage and locked. Special trolley provided for welding purpose</p>	Closed

							
45	Lot 2 Camp 2	June 2021	Poor house keeping in parking Area 	CC to build the hard floor, clean the area, waste need to be removed, generator required drip trays	One month	Concrete floor, Old tiers removed, Covered the tires 	Open In Progress
Status of Open issues from the Previous reporting Period							
1	TUN# 5 North portal Kobi Batching Plant	Dec 2020	Oil spill observed at several locations, Fuel tank placed at the batching plant does not meet the fuel storage and safety requirement	Fuel tank should be placed at hard surface, covered, surrounded by bund wall and oil sump as a secondary	Jan 2021	CC for lot#1 shifted the fuel tank according to safeguard requirement. However, the NCR was not closed due to lack of covering the facility	Open In progress

				containment to contain the spill			
2	TUN# 5 North portal Kobi Engineer's office	Dec 2020	Unfinished lavatories at engineer's office with poor ventilations and handwash facilities and signage 	CC to ensure the lavatories in good condition with sufficient quantity of hot water	One week	Exhaust Fan installed  CC appointed engineer to speed up the progress and constructed the toilets and provided the handwashing facility and marked the signs CC insured to install the ventilation fans after transportation from Tbilisi . Sufficient hot water is being provided at campsite.	Closed

							
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3.3 Issues Tracking (Based on Non-Conformance Reports)

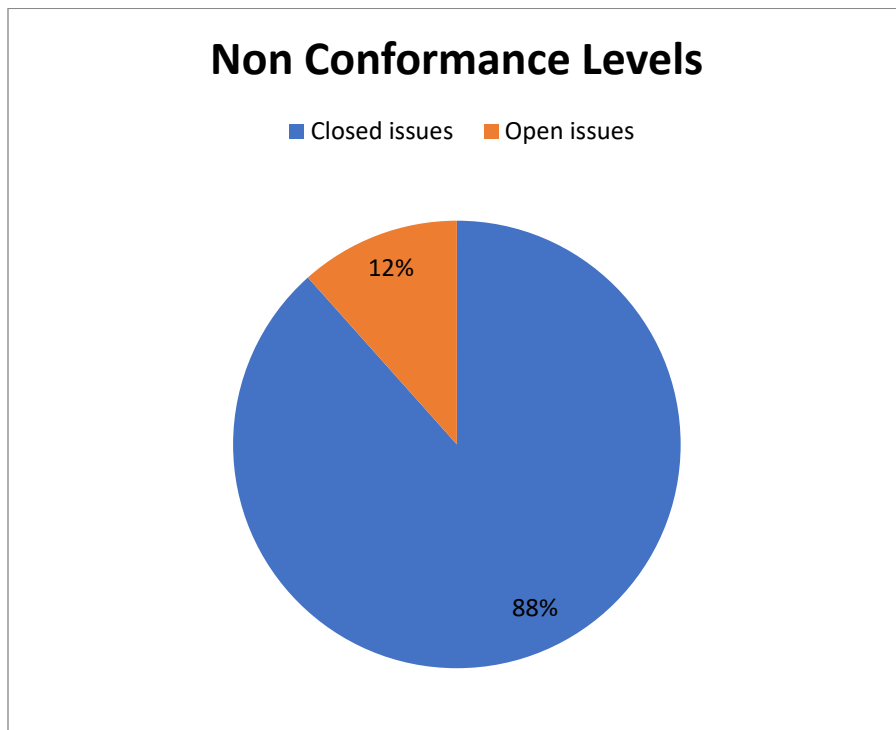
65. Description of issues tracked during the reporting period is given in the Table 9.

Table 9: Summary of issue tracking during the project (January – June 2021)

Total number of issues for the Project	69
Number of open issues (for next Q)	10
Number of closed issues (during project life)	59
Percentage closed	88 %
Issues opened this reporting period	09
Issues closed this reporting period	36

66. Data on the number of closed and open issues is presented in Figure 4. This data is based on the issues that were observed and have been closed or remained open during the Project.

Figure 4: Non-Conformance levels during the Project



67. Out of sixty- nine (69) issues during the project life, fifty-nine (59) issues were closed and ten (10) of them were partially mitigated or corrective action in progress requiring further improvement. Table 9 shows the number of emerged and closed issues during the reporting period. The contractor showed willingness to resolve the issues, especially, related to take measures to fight against COVID 19 by hiring the Doctor, screening of the workers, regular disinfection by spraying and providing the face mask.
68. Issue regarding the safe procedures for refuelling and covering of diesel tank is still in progress at Lot 1 batching plant since December 2020 although contractor started some progress by adding one more diesel tank. CC for lot#1 improved hygienic conditions at campsite, safety measures and safe working conditions at the site, improved ventilation and lighting, safe installation of electric cables, treatment of tunnel water, access to emergency tunnel, added waste bins and spill kits, installed water sprinkling system at crushing plants, regular water sprinklings at access roads and E-117, appointment of flagmen, providing the guard rail at bridge on river Baidara, fencing of heritage sites.
69. These issues have been reported to contractor through NCRs, weekly inspection reports and required Corrective Action. Furthermore, discussions are being made about best practices to be adopted during progress review meetings and minutes of meetings are officially recorded to follow up.

3.4 Trends

70. Most of the violations observed during the reporting period requiring special attention to resolve include: requiring drip trays for placing oil drums and hazardous material for secondary containment, topsoil storage, cracks in the foundations of BP silos at Lot#1, safe lifting operations at segment plant, oil spills, Odour from the septic tank, covering and development of safe procedures for refuelling facility at lot#1, Placement of Oxygen cylinders and handling during the welding job, Improvement of housekeeping at campsite and active construction sites, enforcement to wear PPES, obtaining the respective permits and approvals from the concerned authorities, provision off drip trays for the generators, sewage handling, and appointment of additional Environmentalist at lot#2. The issues are being highlighted in the joint HSE inspection report carried out by environmental specialist and HS specialist and notified to CC to take corrective actions. Violations are being gradually fixed and after the PMCSC's observations, the contractor takes respective endeavours and apply the mitigation measures to resolve the issues.
71. Corrective actions are being taken by the contractors to fix the non-compliances highlighted during the previous reporting period and current period related to HSE conditions improvements, waste storage and burning of waste at the site, oils spills at the site, sewage handling, topsoil storage, improving campsite situation and river protection. CC is reporting the follow up actions to PMCSC as attached in Annex 4.
72. Contractor for Lot#1 has positive attitude regarding progress of development and for environment compliance; however, CC for lot# 2 has slow response for construction progress and for tasks related to environment, especially during the transition period due to outbreak of Covid-19.

73. Both the contractors have positive attitude to combat with COVID-19 pandemic disease by adaptation of safe measures, disinfecting the workplaces and provision of PPEs including face mask and hand disinfection machines at various location.

3.5 Unanticipated Environment Impacts or Risk

74. During the slope protection work at the top of TUN# 5 in June 2021, spring water caused slope failure and collapse of the material on the ground. During the joint site inspection of PMSC and the CC for lot#1 decided to build the retaining wall to control the water and movement of material to avoid the land acquisition for rehabilitation work.
75. In addition to that continuous outbreak of Covid-19, the fourth wave in the world causing serious consequence to human health, and in terms of increasing cost of the project and slow development progress. Both the contractors taking actively protective measures against COVID-19. and following the recommendations related to COVID -19 issued by relevant Authorities. Both the Contractors distributed “Coronavirus Protection Manual” among the staff, and providing the PPEs, face mask, disposable hand sanitizer, and disinfecting the working areas regularly. CCs ensuring to take temperature for everyone twice per day. The record for temperature checking and screening of workers for the Covid-19 tests is being maintained in a separate journal/ file and being updated on daily basis.
76. In accordance with the Asian Development Bank (ADB) Safeguard Policy Statement 2009 (SPS) and the loan or grant agreement between ADB and the borrower, the borrower is required to assess implications of unanticipated risks and impacts under the project; and to identify and implement necessary risk mitigation measures. Taking in to account the unanticipated event of outbreak of pandemic infectious disease of COVID 19 causing large number of people sick and reported deaths, travel restrictions, lockdowns, workplace hazard , and facility closures globally. CC for lot#1 prepared Risk Assessment Covid-19, Updated COVID-19 Protection Plan. In addition to that Emergency Response Plan (ERP) and Occupational and Community Health and Safety Management Plan were also updated and all these documents submitted to RD as per requirement of ADB in November 2020. CC for Lot #2 has updated the Covid-19 Protection Action Plan and submitted to RD on December 01, 2020.

4. RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of the Monitoring Conducted During Current Period

77. The contractor for lot#1 has hired the certified laboratory Girgili LLC laboratory and carried out instrumental monitoring for noise, vibration, air, surface water and ground water quality testing for the reporting period January-June 2021 on monthly basis.
78. CC for Lot# 1 has installed 4 camera traps along Narvani River and near the tunnel portal in Kobi to capture the movement of faunal species (see Photo # 49, Annex-1)
79. CC for Lot#2 did not carry out monthly instrumental monitoring during the reporting period and hired the LTD “Exam laboratory of Sanitary, Hygiene and Medicine Ecology Research university of G.Natadze” to carry out instrumental monitoring and started work on site in the first week of July 2021.

80. For Lot#1, the sampling location for air, noise and vibration and water quality were selected considering the ongoing construction activities shown in Figure 5. The objective was to evaluate the potential impacts on the environmental sensitive receptors resulting from the construction activities. The results of the instrumental monitoring are given in tabular form while, details are given in Annex 3.

Figure 5: Location of sampling points on the northern site of the project (Jan – June 2021)



Ground Water Quality Monitoring

81. Ground water testing was carried out during Jan to June 2021 and samples were collected from the well located on the upper part of the accommodation camp (coordinate 459946.172E 4711509.980N). The ground water test results as indicated in table 10 were compared with Georgian Acceptable Limits (resolution of the Georgian government #58 on the "Approval of technical regulations of potable water"). All the tested parameters are within the National Acceptable Limits and ground water is not contaminated in terms of chemical or microbiological contamination. Ground water is being used for drinking purpose at the campsite. Bottled water is being used for drinking purpose in offices and is being supplied by CC on regular basis.

Table 10: Groundwater Test Results for Lot 1 during the reporting period

Parameters	Measuring Unit	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Maximum Permitted Limits
Odor	ball(score)	0	0	0	0	0	0	<2

Taste	ball(score)	0	0	0	0	0	0	<2
Color	Gradus Celsius	0	0	0	0	0	3	<15
pH	-	8.22	8.43	7.95	7.95	7.97	7.93	6-9
Turbidity	NTU	0	0	0	0	0	0	<2
Chloride (Cl-)	mg/l	14.2	6.50	6.23	6.23	1.05	4.19	250
-2 Sulphate (SO ₄)	mg/l	17.4	13.4	12.4	12.4	12.6	13	250
TPH (total petroleum hydrocarbons)*	mg/l	0.001	0	0	0	0	0	0.1
Total Coliforms	CFN in 300 ml	ND	ND	ND	ND	ND	ND	Not permissible
Escherichia coli	CFU in 300ml	ND	ND	ND	ND	ND	ND	Not permissible
Sulphite reducing clostridia, Clostridium perfringens	CFU in 100 ml	ND	ND	ND	ND	ND	ND	Not permissible

Surface Water Quality

82. During the reporting period, the surface water samples were collected from the River Baidara¹. Surface water samples were collected from the 150-meter upstream (459159.890E 4711681.290N) and 150 meters downstream (459256.423 E 4711930.030N) of the construction activities being carried out at the segment plant. The objective for the sampling was to evaluate potential impact on river water quality due to construction activities. The results as indicated in Table11 show that there is no difference in the river water quality at 150 meters upstream and downstream from the construction activities.

83. The Values of BOD5 <5 at sampling locations of the river show that there is no waste stream/ sewage entering the River Baidara parallel to construction activities. The values

¹ During reporting period CC took sample from Bidara river due to onsite construction activities near segment plant. July 2021 sampling is being carried out from Tergi River and results would be presented in next report.

of Dissolved Oxygen (DO) Levels greater than 5 mg/ l indicate healthy stream for aquatic organisms.

84. pH values around (7-8) throughout the season reveals that River Baidara water is healthy for the Aquatic microorganisms as normally aquatic organism are severely stressed below 5.5 (acidic in nature). Moreover, at this pH(7-8) certain toxic minerals such as aluminium, lead, mercury, are insoluble and relatively harmless.

Table 11: Surface water results (Jan-June 2021)

Measurement in Jan 2021							
Location: Point #1: Riv. Baidara Kobi near Segment Factory							
#	Parameters	Point# 1		Baseline Result from EIA	Unit	Applicable Standard MAC	IFC indicative values for treated sanitary sewage discharge
		Upstream 150 meters	Downstream 150 meters				
<i>Physical & Chemical Tests</i>							
1	Turbidity	<2	<2	6.0	NTU	N/A	-
2	pH	8.13	8.17	7.70	pH	6.5-8.5	6-9
3	Conductivity	56.2	56.5	23.3	mS/m	N/A	-
4	Dissolved Oxygen	7.96	7.94	9.0	mg/l	≥4	-
5	BOD 5	<5	<5	3.2	mg/l	6	30
6	COD	<3	<3	<3	mg/l	30	125
8	TPH	0.001	0.002	<0.04	mg/l	0.3	-
<i>Microbiological</i>							
9	Total Coliform bacteria	3	ND	3200 (MPN in 1000 ml)	MPN in 100 ml	-	400

Noise

85. During the reporting period, sampling locations for noise levels were selected to evaluate the impact on the residential area of Kobi village due to construction activities at TUN#5 North portal. The average equivalent noise levels (LAeq) recorded are indicated in Table 12 with location detail and compared with the day time and night time IFC limits 55 dB(A) and 45 dB(A) respectively for the residential areas.

Table 12: Average equivalent noise levels result during the Reporting period

Location	Average Equivalent Noise level (LAeq) Measurement dB(A)						IFC Standard (BA)
	Jan 2021	Feb 2021	March 2020	Apr 2021	May 2021	Jun 2021	
Day Time							
Residential Area of Kobi Village	54.1	54.7	54	54.9	51.2	41.8	55
Night Time							
Residential Area of Kobi Village						45	45
Almasiani Village						46	45

86. Overall, the LAeq results vary between 42 dBA to 55 dBA. These results are in the range of IFC standard 55 d(BA) for residential area during the day time. The night levels in June in Village Almasiani were 46 dBA just slight increase from the standard which is 45 dBA. The main source of noise was the crushers and due to unloading of material from the Dumpers truck. However, PMCSC advised the CC to stop crushing activities after 10:00 P.M.

Vibrations

87. Vibration results were monitored at three sampling points: VM#1 (459644.69E 4711611.34N) St. George Church and VM#2 (459637.44E 4711609.84N) Kobi village and VM# 3 Residence in Almasiani Village except January when these were monitored in the first two points.

88. Results of the vibrations as indicated in the table 13 reveals that the vibrational levels are insignificant and within the permissible range of the criteria set in the EIA and conditions of contract. However, in February 2021, the exceedance of the values for PPV than the reference value of DIN 4150-3 standard was observed 37 times in 22 days at the Church mainly in the direction of Y axis. The time intervals for exceedance were compared with the blasting time (Comparison given in Annex-#3 of the Vibration monitoring report for February 2021). However, the time intervals for blasting and exceedance of PPV values dose not match with each other; Therefore, the exceedance of the values is anticipated to be due to movement of avalanches in the area during that intervals in February 2021.

89. According to the criteria set in EIA based on BS 6472 and German standard DIN 4150-3: 1999 for damage to structures, there is no damage likely to structure building due to vibration at PPV less than 5 mm/sec (for most standard residential buildings), risk of cosmetic damage may occur from 5-15 mm/sec and risk of structural damage at PPV greater than 15. For buildings of poor structural integrity, a level of 2.5mm/sec is more appropriate and has been used for the project.

Table 13: Vibrational Monitoring Results (Jan – June 2021)

Location	Peak Particle Velocity (PPV) mm/sec		
	Longitudinal (X)	Transitional (Y)	Vertical (Z)
Measurement in Jan 2021			
VM#1 Kobi Village	0.18	0.21	0.17
VM#2 St. George Church	0.14	0.19	0.17
Measurement in Feb 2021			
VM#1 Kobi Village	0.16	0.17	0.24
VM#2 St. George Church	4.99	9.1	1.13
VM# 3 Residence in Almasiani Village	0.20	0.15	0.58
Measurement in March 2021			
VM#1 Kobi Village	0.19	0.21	0.2
VM#2 St. George Church	0.35	0.45	0.35
VM# 3 Residence in Almasiani Village	2.45	2.35	5.85
Measurement in April 2021			
VM#1 Kobi Village	0.47	0.26	0.55
VM#2 St. George Church	0.77	0.8	0.3
VM# 3 Residence in Almasiani Village	0.57	0.24	0.71
Measurement in June - July 2021			
VM#2 St. George Church	0.28	0.3	0.29

*Note: According to CC the lab equipment was sent to Germany for calibration during May and June 2021 and VB monitoring started again from June 23, 2021

Air Quality Monitoring

90. Dust levels were measured during the reporting period to determine the impact on air quality due to ongoing construction activities at Tun# 5 north portal. The air quality monitoring sampling location and test results are summarized in Table 14. The Sampling was carried out for dust levels at a point near to the Segment plant (coordinate 459307E, 4711741N). The other criterial pollutants including NO_x, SO₂ and CO concentration levels were measured at the coordinates 459494 E 4711616 in Kobi village close to residential area.

91. During the reporting period main emission source were the construction activities being carried out at the tunnel 5 portal, and the movement of heavy vehicles. The construction works for Tunnel# 5, Segment factory, were in progress during the reporting period.
92. PM₁₀ levels including the concentration levels of NO₂, SO₂, CO and dust levels as indicated in Table 13 are within the national limits for air quality in Georgia and IFC guidelines for 24 hrs. CC for Lot# 1 carrying regular water sprinkling at site without break.

Table 14: Air Quality Monitoring Results (January- June 2021)

Measurement in January 2021				
Indicator	IFC Guidelines (Averaging Period)	Georgian Standards (Averaging Period)	Unit	North portal TUN#5 Kobi Village
Sulphur Dioxide (SO ₂)	20 (24 hrs.) 500 (10 min)	50 (1 hr.)	µg/m ³	27
Nitrogen Dioxide (NO ₂)	200 (1 hr.)	200 (1 hr.)	µg/m ³	39
Carbon Monoxide (CO)	-	10(Max daily or hourly mean) ^c	mg/m ³	4.328
Particulate Matter (PM ₁₀)	50 (24 hrs.)	50 (24 hr.)	µg/m ³	14
Particulate Matter (PM _{2.5})	25 (24 hrs.)	25 (1 year)	µg/m ³	13.5
Measurement in February 2021				
Indicator	IFC Guidelines (Averaging Period)	Georgian Standards (Averaging Period)	Unit	North portal TUN#5 Kobi Village
Sulphur Dioxide (SO ₂)	20 (24 hrs.) 500 (10 min)	50 (1 hr.)	µg/m ³	0
Nitrogen Dioxide (NO ₂)	200 (1 hr.)	40 (1 hr.)	µg/m ³	38
Carbon Monoxide (CO)	-	10 (Max daily or hourly mean) ^c	mg/m ³	2.430

Particulate Matter (PM ₁₀)	50 (24 hrs.)	50 (1 hr.)	µg/m ³	2.8
Particulate Matter (PM _{2.5})	25 (24 hrs.)	25 (1 hr.)	µg/m ³	2.8
Measurement in March 2021				
Indicator	IFC Guidelines (Averaging Period)	Georgian Standards (Averaging Period)	Unit	North portal TUN#5 Kobi Village
Sulphur Dioxide (SO ₂)	20 (24 hrs.) 500 (10 min)	50 (1 hr.)	µg/m ³	17
Nitrogen Dioxide (NO ₂)	200 (1 hr.)	40 (1 hr.)	µg/m ³	42
Carbon Monoxide (CO)	-	10 (Max daily or hourly mean) ^c	mg/m ³	0.980
Particulate Matter (PM ₁₀)	50 (24 hrs.)	50 (1 hr.)	µg/m ³	2.9
Particulate Matter (PM _{2.5})	25 (24 hrs.)	25 (1 hr.)	µg/m ³	1.7
Measurement in April 2021				
Indicator	IFC Guidelines (Averaging Period)	Georgian Standards (Averaging Period)	Unit	North portal TUN#5 Kobi Village
Sulphur Dioxide (SO ₂)	20 (24 hrs.) 500 (10 min)	50 (1 hr.)	µg/m ³	42.3
Nitrogen Dioxide (NO ₂)	200 (1 hr.)	40 (1 hr.)	µg/m ³	16.3
Carbon Monoxide (CO)	-	10 (Max daily or hourly mean) ^c	mg/m ³	0.980

Particulate Matter (PM ₁₀)	50 (24 hrs.)	50 (1 hr.)	µg/m ³	2.9
Particulate Matter (PM _{2.5})	25 (24 hrs.)	25 (1 hr.)	µg/m ³	1.7
Measurement in May 2021				
Indicator	IFC Guidelines (Averaging Period)	Georgian Standards (Averaging Period)	Unit	North portal TUN#5 Kobi Village
Sulphur Dioxide (SO ₂)	20 (24 hrs.) 500 (10 min)	50 (1 hr.)	µg/m ³	16
Nitrogen Dioxide (NO ₂)	200 (1 hr.)	40 (1 hr.)	µg/m ³	31
Carbon Monoxide (CO)	-	10 (Max daily or hourly mean) [°]	mg/m ³	0.775
Particulate Matter (PM ₁₀)	50 (24 hrs.)	50 (1 hr.)	µg/m ³	2.3
Particulate Matter (PM _{2.5})	25 (24 hrs.)	25 (1 hr.)	µg/m ³	1.8
Measurement in June 2021				
Indicator	IFC Guidelines (Averaging Period)	Georgian Standards (Averaging Period)	Unit	North portal TUN#5 Kobi Village
Sulphur Dioxide (SO ₂)	20 (24 hrs.) 500 (10 min)	50 (1 hr.)	µg/m ³	27.6
Nitrogen Dioxide (NO ₂)	200 (1 hr.)	40 (1 hr.)	µg/m ³	16.1
Carbon Monoxide (CO)	-	10 (Max daily or hourly mean) [°]	mg/m ³	0.623

Particulate Matter (PM ₁₀)	50 (24 hrs.)	50 (1 hr.)	µg/m ³	2.7
Particulate Matter (PM _{2.5})	25 (24 hrs.)	25 (1 hr.)	µg/m ³	2.4

^bIFC guidelines for 24 hours are being used except NO₂ as standard is available for one-hour averaging period

^c For CO Georgian National standard is 10mg/ m³ µg/m³) maximum hourly or daily basis. For EU, the standard is 10 mg/m³ for 8 hours. For USEPA the standard is 10 mg/m³ (9 ppm) for 8 hrs. and 44 mg/ m³(35 ppm) for one hour. There is no IFC standard for CO.

4.2 Summary of Monitoring Outcomes

93. The contractor for lot#1 has hired the certified laboratory Gergili LLC laboratory and carried out instrumental monitoring for noise, vibration, air, surface water and ground water quality testing for the reporting period January-June 2021 on monthly basis. While CC for Lot 2 started monitoring from July 2021.
94. There is no effect of construction activities on river Baidara as revealed by the water testing at 150 m upstream and 150 downstream of construction activities
95. River Baidara water quality tests reveal that the stream water is good for aquatic organisms with pH ranging from 7-8 and the BOD, COD and the test results reveal that there is no mixing of sewage/ waste in the river water parallel to construction activities.
96. Overall, at Kobi site, the LAeq results vary between 46 dBA to 47 dBA. These results are in the range of IFC standard (55 d(BA) for residential area during the day time and there is no significant vibration due to construction activities. The night time noise levels measured in June 2021 are very close to permissible limits and PMCSC advised CC to not use the crushers at the night time.
97. Dust levels and gaseous pollutant levels including NO₂, SO₂, CO in village Kobi are within the national limits for air quality in Georgia and IFC guidelines for 24 hrs other than for SO₂ in June 2021 (likely as a result from local coal/heater burning) which is below the Georgian standard but higher than the IFC guidelines. IFC has the only one-hour standard for NO₂. For other pollutant including SO₂, PM₁₀, PM_{2.5}, standards for 24 duration were used.
98. Status of compliance with environmental safeguards related covenants in the Project's Loan Agreement signed between Government of Georgia and ADB on 20 June 2019² is summarized in Table 15.

Table 15. Loan Agreement Compliance Status

Schedule	Paragraph	Covenant	Compliance Status
7	38	<u>Environment</u>	SEMP for both lot#1 and Lot # 2 has been approved

² ADB. Loan Agreement (Ordinary Operations [Concessional]) for Loan L3803: Georgia: North–South Corridor (Kvesheti–Kobi) Road Project (20 June 2019). <https://www.adb.org/sites/default/files/project-documents/51257/51257-001-pam-en.pdf>

		No physical works will be allowed prior to approval of the SEMP by the construction supervision consultant and RD.	
7	39	The EMP, which also defines the institutional arrangements and responsibilities for its implementation, will be included in the bidding documents, and in the ensuing contracts. The SEMP will be implemented under close monitoring provided by the construction supervision consultant and the service of environment and social issues of the RD. The RD will submit semiannual environmental monitoring reports to ADB for disclosure on the ADB website. The capacity building of the RD environment specialist, the contractors and supervision consultants will also be conducted through Central and West Asia Department's ongoing regional TA.	Being complied with EMP as a part of bidding documents and Technical Specification. RD submitting Semiannual monitoring report and all the set forth measures in EIA, Conditions set by MoEPA, and National Legislations are addressed in the SAEMR This is the 4th Semiannual Monitoring Report
9	53	<u>Safeguards Monitoring and Reporting</u> Project performance monitoring. RD will require the Engineer to (i) collect additional data from relevant agencies, including local governments and statistics bureaus, (ii) to measure the performance indicators at inception, at completion, and 3 years after project completion; and (iii) report key findings quarterly to ADB through the project's quarterly project reports.	Ongoing
9	54	Compliance monitoring. RD will provide an annual report on the project's compliance with legal, financial, economic, environmental, social and other covenants.	Ongoing Audited Project Financial Statements (27 August – December 31 2019) is published on ADB website in November 2020
4	55	Safeguards monitoring. RD will monitor the implementation of the environment and resettlement action plans. The semi-annual report will include the status of these plans. The EMP will be monitored and reported to ADB bi-annually with the assistance of	RD submitting Social Monitoring Semiannual Report describing the Implementation status of LARP And

		<p>supervision consultant team, the performance and results of which (through EMP reports) will be uploaded in ADB website. Construction environmental monitoring is a day to day process, which ensures that departures from the EMP are avoided or quickly rectified, or that any unforeseen impacts are quickly discovered and remedied. Specific actions in the EMP that are to be monitored are included in the EIA.</p> <p>In addition to the above, BAP implementation will also need to be monitored and this will be reported within the bi-annual environmental monitoring reports. If there are any unforeseen safeguards impacts or incidents these will be reported to ADB immediately for necessary action. RD will engage individual consultants for periodic inspection and reporting on safeguard matters.</p>	Semi Annual Environmental Monitoring Report describing the status of implementation of The EMP and its site specific and Topic specific Plans is being submitted to ADB and published on ADB website after approval .
9	57	Evaluation 57. Within six months of physical completion of the project, RD will submit a project completion report to ADB.	Not applicable at this stage
9	58	<p>Reporting 58. The RD will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; and (iii) a project completion report within six months of physical completion of the project. To ensure that projects will continue to be both viable and sustainable, project accounts and the executing agency audited financial statement together with the associated auditor's</p>	<p>RD providing Semiannual reports for social Monitoring and Environmental Monitoring on the format prescribed by ADB applicable at this stage. Currently the project is at construction stage and commencement was October 2020.</p> <p>Procurement Plan for KKR published in June 2019</p>

		report, should be adequately reviewed. The RD will also be responsible for submitting to ADB quarterly safeguards monitoring reports to ADB for approval and disclosure on the RD and ADB websites.	
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4.3 Material Resource Utilization

99. As for June 2021, following materials were mobilized on site by the Contractor for Lot#1:

Table 16: Material mobilization

No.	Material	Quantity	Unit
1	Concrete	3736	m ³
2	Rebar	1532.5	t
3	Section steel	823.6	t
4	Steel plate	143.8	t
5	Cement	10960.6	t
6	Concrete brick 20*20*40cm	41589	pcs
7	Concrete brick 10*20*40cm	17052	pcs
8*	Sand	22510	m ³
9**	Gravel	62311	m ³
10	Diesel	608	t

Note: Gravel comes from the quarry near village Nogkau license MoEPA # 1003237 and quarry near village Kverno Okrokana #1002961 in Kazbegi Municipality along River Terji

4.4 Waste Management

100. CC for lot#1 has developed a detailed waste management plan. The Contractor has signed an agreement with the Kazbegi Municipality regarding provision of the waste containers, collection and transportation of household waste. In addition to that the contractor has signed an agreement with the licensed company – Medical Technology LLC for collection, transportation and treatment of the hazardous waste, and the agreement for collection, transportation and treatment of used tires has been signed with the licensed company- Tire Recycling Company (TRC Ltd). Temporary hazardous waste storage area has been arranged since October 2019 at the segment plant/crusher in village Kobi. Different types of hazardous waste are kept in the restricted area (fenced on impervious base with roof) before transporting by the licensed waste transportation/treatment company. Information regarding the generation of waste during reporting period is given in the Table 15.

Table 17: Waste management

#	Domestic/Hazardous Waste & Sewage	Estimated Volume	Storage Area	Licensed Company
1	Household waste	110 m ³	Camp sites, Workshops, Construction sites	Kazbegi Municipality
2	Sewage water	670 m ³	Wastewater treatment plant	Ltd. Sanitary
3	Used tires	8 m ³	Temporary waste storage area at the Workshop	TRC Ltd.
4	Hydraulic and used oil	220 liter	Temporary waste storage area at the Workshop	Medical Technology LLC
5	Waste paints and varnishes	15 kg	Temporary waste storage area at the Workshop	Medical Technology LLC
6	Chemical additive tanks	107 pcs	Temporary waste storage area at the Workshop	Medical Technology LLC
7	Oil drums	47 pcs	Temporary waste storage area at the Workshop	Medical Technology LLC
8	Used food oil	61 litter	Camp separate wastebaskets	Medical Technology LLC
9	Printer tonner	4.7 kg.	Temporary waste storage area at the Workshop	Medical Technology LLC

10	Absorbents (e.g. oil filters, polluted clothes and materials)	170 kg.	Temporary waste storage area at the Workshop	Medical Technology LLC
11	Medical Waste	60 liter	Temporary waste storage area at the Workshop	Medical Technology LLC

101. Contractor for Lot# 2 has signed agreement with Ltd “Medical Technology” for the collection of hazardous waste. Dusheti Municipality Services Company is collecting the Household waste from the lot# 2.

4.4.1 Current Period

102. The main source that generates the big amount of the waste is earthworks, specifically: excavation of the soil and rock soil material excavated from the tunnels. Estimated calculations for spoil generation at Lot#1 and Lot#2 after adjusting the fill material to be used are given below:

Estimated spoil generation for Lot #1: 2,156,749 m³

Estimated spoil generation for Lot #2: 1,473,339 m³

Total estimated spoil generation for both Lot#1 and Lot#2: 3,630,088 m³

103. Currently both the contractors are in a process of getting respective permits from the concerned authorities and fulfilling the Lender’s requirements for spoil disposal areas.

104. At Lot#1 Currently, the main sources that generate the big amount of the waste is slope and tunnel construction, specifically: excavation of the soil and rock material excavated from the north portal slope and tunnels. Estimated calculations for spoil generation and excavated material up to June 2021 are given below:

Excavated spoil material up to June 2021: 166,032.92 m³

Estimated spoil reuse for embankments and TBM foundation: 166,032.92 m³

Spoil needs to be disposed of: 0 m³, during current reporting period.

105. The Contractor’s submission of spoil disposal plan site 1 version B on 19-9-2020 was approved by the PMCSC and submitted to the Ministry of Environmental Protection and Agriculture. The version C modified according to the Ministry’s comments was submitted on 26-11-2020. The Contractor’s submission of spoil disposal plan site 2 version A on 21-12-2020 was approved by the PMCSC and submitted to the Ministry of Environmental Protection and Agriculture on 25-12-2020. The ministry commented via letter N4434/01 dated 05-05-2021 (see Annex-11).

106. At Lot#2 up to June 2021, 48000 m3 of spoil material was generated from the excavation of TUN# 1 exit portal and that material was used for the access roads and for the embankment of the corridor at plateau. Leftover material was stored in the RoW.

4.5 Health and Safety

107. CRTG, the contractor for Lot#1, has mobilized National HS specialist Vladimer Melia contact #+995574060001 and one Chinese HS specialist Xu Shaoliang contact # +995574130718 with two national HS Specialist and two other Chinese HS specialists for the night shift; While, CRCC, the contractor for lot#2, has mobilized national HS specialist Mr. Giorgi Mikiashvili Contact # +995 599130067, Irakli Mikiashvili and Mikhael Ioseliani. The Georgian National legislation requirement (Article 7 “Organizing and Managing H&S” of Organic Law of Georgia on Labour Safety) shall be met for the appointment of HS staff i.e., up to 20 employees – one responsible person, 20 to 100 – one officer (special background required) and >100 - two officers required. The ratio of HS Specialists and number of employees will be maintained as 1: 50.
108. These HS specialists would be available on their respective sites and their responsibilities include: maintaining safety and protection against HS accidents; provide H&S training including daily toolbox training sessions at each work site; approve H&S Plans for specific work activities; conduct routine site inspections and issue internal stop notices, if necessary, for unsafe activities; maintain H&S statistics log books for near misses, as well as incidents; and provide H&S input to Contractor reports. Sample for HSE log book is attached as Annex-5.
109. PMSCS’s National HS Specialist Mr. David Kvirkvelia is responsible for safety audits and preparation of safety inspection reports and review the health and safety related documents submitted by the contractors for both lot 1 and lot 2.

4.5.1 Community Health & Safety

110. No traffic related accident was recorded during the reporting period.
111. Contractor CRTG has appointed flagmen to control the traffic while vehicles entering and exiting the construction site. Road markings, signage for awareness of road users and smooth flow of traffic was also arranged by the Contractor. Moreover, CRTG has appointed one water truck to clean the E-117 highway regularly on a daily basis. CRCC has to set and implement the same standard.

4.5.2 Occupational Health & Safety

112. Daily safety inspection of construction site is being conducted by HSE representatives as a continuous process.
113. HSE representatives preparing related safety documentation for the project such as: HS work procedures, RA for each activity as a part of method statements.
114. Contractors are providing the PPEs to the Workers; however, enforcement to use is lacking.

115. Both Contractors prepared and implement COVID 19 protective action plan. All employees were tested and it is ongoing regularly.

116. According to the data in July 2021, CRTG CC for Lot#1 has 35 infected personnel out of 520. All infected persons are transferred to Corvid Hotels. CRCC for Lot# 2 has only one infected person out of 138, the mentioned person is isolated in the camp #2.

117. Particulars of the accidents that occurred during the reporting period are given below in the Table 18 A and 18 B for lot#1 and lot# 2 respectively.

Table 18 A: Works related accidents reported during the reporting period Lot# 1

#	Date	Description	Measures Taken	Follow up
1	09-06-2021	During fasten rebar for Segment, Mr. Bejan slipped down and got scratch on his left eyebrow. First aid was done by CRTG doctor (Lasha Gagulia)	1)the internal safety training was conducted to workers 2)supervising the activity at all time	1) Daily Tool Box Talking is conducted by safety officer and site supervisor 2) clear safety access at all time
2	26-06-2021	Incident occurred on 26 June 2021 at Kobi construction site, approximately at 2 pm, while assembling the head of TBM, somehow employee's left leg slipped and fell down from a height of about 1.5 meters. The cause of the incident was the negligence of the employee and violation of safe working at heights procedure (missing guardrails, platform, safe access and fall protective equipment).	1) The incident was communicated with the personnel through TBT as a lesson learned; 2) The safety officer was mobilized at all time to supervise the activity; 3) The elevator platform was mobilized for workers to ensure safe access at height;	1) The Daily Tool Box Talking is conducted to workers 2) Risk Assessment is shared to workers at all time 3) The necessary PPE is provided to workers 4) Safety officer supervises at site all time

			4) The construction supervisor was instructed permanently control the workers involved in high-risk activities.	
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Table 18 B. Works related accidents reported during the reporting period Lot 2

#	Date	Description	Measures Taken	Follow up
1	19.06.2021	The worker (name:Liao Zhongming, age:43) was cut by the color steel tile around on his knee area in Batching Plant No.1. The wound is 3cm in the length and 3mm in the depth.	Once it happened, the patient was immediately transferred to camp clinic. Our doctor appropriately binds the wound up and stop the bleeding. Then on 20 June 2021, the patient is vaccinated by the tetanus vaccine in Dusheti Hospital to prevent the infectious.	1) The training “safe use of hand and electrical tools” was conducted for the workers;

118. Trends related to the accidents reported during the reporting period are given in Table 19 A and 19 B for lot#1 and Lot#2 respectively.

Table 19 A: Types of accidents reported (January – June 2021) LOT1

Accident Type	Reporting Period (Jan – June 2021)	Total (from commencement)
Near Miss	10	10
Accident Minor	2	2
Accident Major	0	0

Table 19 B: Types of accidents reported (January – June 2021) LOT2

Accident Type	Reporting Period (Jan – June 2021)	Total (from commencement)
Near Miss	4	4
Accident Minor	1	1
Accident Major	0	0

119. Contractors actively taking protective measures against COVID 19. and following the recommendations related to COVID-19 issued by relevant Authorities. Contractors distributed “Coronavirus Protection Manual” among the staff, and providing the PPEs, face mask, disposable hand sanitizer, and disinfecting the working areas regularly. CC ensuring to take temperature for everyone twice per day. All the infected person has been kept in isolation.

4.6 Trainings

120. CC for Lot# 2 provided the following trainings during the reporting period:

- Daily Toolbox Talking
- Working at height training
- Lifting and rigger training
- Hot work training
- Scaffold training
- Firefighting training
- First aid training

121. CH Training for Lot 2 is planned to be conducted in the beginning of July.³

³ Training was held on July 5, 2021 at the CRCC office. 27 employees have attended the training.



122. As reported by the CC for Lot #1, the following trainings were carried out by contractor during the reporting period on regular basis including the refresher training course for all the employees.

- Safety Induction trainings
- Visitor's orientation
- Firefighting training
- Check air content in tunnel
- Weekly H&S inspection
- Daily Toolbox Talking
- First aid training
- Weekly Safety Training
- Weekly Mass Toolbox Talking
- Welding and Cutting safety
- Safe work procedure of lifting
- Working at height training
- Code of Conduct
- Electrical safety
- Safe Blasting procedures

123. Training records along with attendance sheets are Annexed as Annex-7.

4.7 Grievance Redress Mechanism and Complaints

124. Grievance Redress Committees (GRCEs) at Municipality levels were established during the EIA study with the office order from RD. For Lot#2 GRCE for Dusheti municipality is based in Kvesheti; while, for Lot#1 GRCE for Kazbegi Municipality is based in Kobi village.

125. In response to RD letter# N2-12/3725 dated: 25-03-2020, The contractor for Lot #1 submitted through letter # 200330-0021-CRG-RDMRDI the name of the candidates for

grievance resolution committee: Lela Bachiashvili (+ 995 593132361, lelabachi@yahoo.com) and Liang Hongjun (+995 557466348, liang.hongjun@crtg.cn)

126. For the PMCS, for social concerns. Ms. Tamar Javakhi, (Contact : +995 599613196, javakhitako@gmail.com) are the focal Person ; and for environment, Mr. Nikoloz Sopadze, (Contact : +995 597728871, nikasofadze@hotmail.com) were nominated.
127. As informed by CC for Lot #2 Song Linzhi (Maxim) phone number + 995 577036926 is responsible for the resolution of complaints.
128. To address the issues of compensation, RD involved Levan Samkharauli National Forensics Bureau who will make re-assessment to establish a new rate. The complainants related to land acquisition, access restriction and acquiring of remaining land plots have been sent by RD to the design consultant IDOM consulting and Gamma Consulting, responsible for LARP preparation, for further review.
129. Grievances Received & Redressed up to Reporting Period at Level 1 (GRCE): As of 30 June 2021, 25 grievances (5 categories) have been received by GRCE at Level 1. People mostly apply concerning loss of access road to their remaining portions of the land plot. GRCE also received 8 grievances regarding “Damage to infrastructure/assets”, 4 of which have been resolved and closed. Currently, as construction activities have not yet fully commenced all land plots have access road. In one case access road to the one land plot will be used by the Contractor’s equipment to access the Site. In this regard, letter was dispatched to the Contractor with the instruction to maintain the access road in good condition. As for remaining cases construction of access road is possible and preparation of a detailed design is required. All cases are being processed by the PMCSC team.
130. Grievances Received & Redressed up to the Reporting Period at Level 2 (GRCN): A total of 37 persons have submitted 5 categories of grievances to the GRCN at level 2, out of which 19 grievances have been resolved as of 30 June 2021. People now mostly (16 Nos.) are requesting inclusion in the acquisition list out of which 7 cases are closed. Compensation rates have been disputed by 10 Aps, out of which 8 cases have been resolved. Status of resolution of grievances is summarized in Table 20 A & Table 20 B; while detailed GRM Complaints Log is given as Annexure-6.
131. In addition to the above, three complaints were also received by CRP of ADB and EBRD (see Annexure-6).

Table 20 A: Summary of the grievances by category with the status of Resolution received by GRCE

#	Nature of Grievances	No of Total Grievances	Result		Remarks
			Open	Closed	
1	Damage to infrastructure/assets	8	4	4	2 Close cases are from Lot 1

2	Loss of access road	13	13	0	All cases are from Lot 2. All land plots have access now.
3	Disturbance by noise and vibration	1	0	1	
4	Recruitment/Employment	2	2	0	One is from Lot 1 and the other from Lot 2
5	Other	1	1	0	
	Total	25	20	5	

Table 20 B: Summary of the grievances by category with the status of Resolution received by GRCN

#	Nature of Grievances	No of Total Grievances	Result		Remarks
			Open	Closed	
1	Compensation Rate	10	2	8	-
2	Inclusion in LARP	16	9	7	-
3	Loss of access road	6	6	0	-
4	HSE concerns	1	0	1	-
5	Other	4	1	3	-
	Total	37	18	19	

5. FUNCTIONING OF SEMP

5.1 SEMP Review

132. PMCSC approved SEMP for both Lot#1 on 12-06-2020 and Lot#2 on 25-05-2020 respectively and the no objection has been given by ADB/EBRD in November 2020 with the condition that SEMP is a 'live document' and will need to be updated throughout the construction period, whenever required, due to arise of unforeseen potential impacts.

133. SEMP status is being reviewed regularly in joint E&S weekly meeting between the lenders, RD and PMCSC. An Action Tracker Environmental & Social Management System

has been developed by ADB and has been provided to the PMCS use and take forward to support their management of the project. The tracker will be updated on regular basis to speed up the process of development of safeguard documents, getting the respective permits/approvals from the relevant authorities, meeting the conditions set in the EIA approval from MoEPA, compliance with the suggested mitigation measures set in the EMP, and resolution of the complaints from the project affected communities and workers.

5.2 Preparation of Topic Specific Plans

134. The updated status for the approvals of site specific and topic specific plans for both lot#1 and lot# 2 up to June 2021 is given in the Table 21 A and 21 B.

Table 21 A: Updated approval status for the site specific and topic specific plans for Lot#1

No.	Plans	Revision	Approval by PMCSC	Approved By RD
1	SEMP	E	10/8/2020	Approved
2	Topsoil Management Plan	D	12.11.2020	Approved
3	Waste Management Plan	B	8-04-202	Approved by MoEPA
4	Waste Water Management Plan	C	24.07.2020	Approved
5	Noise Control Plan	D	02.12.2020	Approved
6	Air Quality Management Plan	B	23.07.2020	Approved
7	Construction Vibration Management Plan	B	23.07.2020	Approved
8	Spill Management Plan	D	23.10.2020	Approved
9	Occupational and Community Health and Safety Plan	D	20.10.2020	Approved
10	Labor and Working Conditions Management Plan	D	24.08.2020	Approved
11	Traffic Management Plan	A	06.05.2020	Approved
12	Emergency Response Plan	E	06.11.2020	Approved
13	Ground Water Management Plan	D	23.10.2020	Approved
14	Reclamation/Land Restoration Plan	B	10.07.2020	Approved
15	Biodiversity Management Plan	G	23.12.2020	Approved
16	Tunnel Blasting Plan	C	22.06.2020	Approved
17	Cultural Heritage Management Plan	D	10.08.2020 Required to update based on NACHP reports	PMCSC sent some comments on 21-07-2020 based on Interim

				reports by NACHP
18	Local Content Management Plan	E	02.11.2020	Approved
19	Spoil Disposal Plan	E	SDA 1 approved SDA 2 not approved	SDA1 submitted to MoEPA
20	Asphalt Plant Management Plan	N/A	-	-
21	Concrete Batching Plant Management Plan	B	Approved	Final approval required by MoEPA
22	Construction Camp Layout Plan	G	Approved by PMCSC 17-03-2021 .	CC submitted the last response to comments from MoEPA on 24-06-2021
23	Construction Camp Management Plan	D	16.11.2020	Approved
24	OHS Plans for Tunnels	C	24.08.2020	Approved
25	Accommodation Option Risk Assessment	E	07-02-2021	Approved
26	Code of Conduct (for workers)	C	18.08.2020	Approved
27	Tunnel Transition Plan	-	-	-
28	Biodiversity Monitoring and Evaluation program	A	Under review by Lenders	-

Table 21 B: Updated approval status for the site specific and topic specific plans for Lot#2

No.	Plan	Revision	Approved by PMCSC	Approved by RD
1	SEMP	D	20.10.2020	Approved
2	Topsoil Management Plan	B	21.05.2020	Approved
3	Waste Management Plan	B	19.12.2020	Approved by MoEPA
4	Waste Water Management Plan	CC to submit	-	-
5	Air quality Management Plan	A	27.08.2020	Approved
6	Noise Control MP	1v.	13.05.2020	Approved
7	Spill management Plan	A	19.02.2020	-
8	Traffic Management Plan	C	02.11.2020	Approved
9	OHS Management plan	A	11.05.2020	Approved

10	Labor and Working Condition MP	A	27.10.2020	Approved
11	Code of Conduct	A	4.10.2020	Approved
12	Emergency Response Plan	A	20.04.2020	Approved
13	Ground water MP	A	20.10.2020	Approved
14	Recultivation/Land restoration.	A	12.06.2020	Approved
15	Biodiversity MP	A	Under revision by CC. CC to include preconstruction Biodiversity survey and EIA conditions	-
16	Vibration MP	B	21.04.2020	Approved
17	Tunnel Blasting Plan	CC to submit yet	-	-
18	Cultural Heritage MP	B	14.10.2020	CC to update based on recommendation by NACHP
19	Spoil Disposal Plan	E	Under revision by CC	-
19	Local Content MP	B	Under revision by CC to update the TOC	-
20	Accommodation option risk assessment	B	24.10.2020	Approved
21	Camp Management Plan	A	Under revision by CC	-
22	Concrete Batching Plant MP	A	31.10.2020	MoEPA approval being waited for BP#2 For BP#1 site rejected by MoEPA
23	Asphalt plant MP	-	-	-
24	Bridge Construction plan	CC to submit it yet	PMSCS advised to submit it ASAP	-
25	Tunnel transition Plan	-	-	-

5.3 Permitting Status

135. The updated status for the approvals and permits from MoEPA and other relevant authorities as per requirement of National legislation and requirement of the EIA for both lot#1 and lot# 2 up to June 2021 is given in the Table 22 A and 22 B.

Table 22 A: Updated status for the National Permits/ Approval from MoEPA and other relevant authorities for Lot#1

#	Item	Current Status	Comment
1	Camp site layout plan	Under Completion	Revised document submitted to Engineer by CC on 25-06-2021 addressing the avalanches hazard and will be submitted to MoEPA after engineer approval
2	Campsite 2 layout Plan Tskere	Under Completion	Submitted to Engineer; however, engineer has comments
3	Forest use agreement The tree cutting permit No 11/67971	Approved	Approved
4	Approval of construction or upgrade activities	Approved	Approved by Ministry of Economy and sustainable Infrastructure for Campsite Kobi
5	Transportation permit	Approved	Approved from Ministry of Internal Affairs for oversized and over weight
6	Spoil disposal approval – Environmental Decision	Under Completion	Kobi site: SDA1(A) Under the review by MOEPA SDA2 (B) is not approved by UBM
7	Permit to use explosives	Approved	Issued by the Ministry of Sustainable Development and Infrastructure
8	Construction permit	Approved	Approved by Public Law Legal Entity Technical and Construction Supervision Agency
9	Locations of accommodation camp, batching plant and crusher	Under Completion	under the revision by MOEPA
10	Emissions of hazardous substances in to ambient air from stationary sources for batching plant	Under Completion	Under the revision by MOEPA and will be resubmitted, if required, after approval of layout plan for BP
11	Waste Management Report	Approved	Approved by MoEPA
12	Maximum Permissible discharges of Pollutants discharged to Surface Water	Under Completion	Under the revision by MOEPA for Campsite and also required for Tunnel water (Need two weeks)
13	Water extraction	Under Completion	Required documents have been drafted and will be submitted after getting the permit for camp, crusher and BP
14	Quarries	Not Relevant Yet	CC getting the material from third party. CC to get the license from quarry Operator
15	Access road to Quarries	Approved	CC Obtained the permission from Kazbegi Municipality for access road to quarries near Kenobi village
16	Explosive Storage Area	Under Completion	MoEPA require detailed Project on 22/07/2021 . Provide the detailed information regarding Narvani River Flow and hydrological Characteristics

Table 22 B: Updated status for the National Permits/ Approval from MoEPA and other relevant authorities for Lot#2

#	Item	Current Status	Comment
1	Camp site layout plan	Under Completion	Approved by UBM conditionally and submitted to MoEPA CC to revise the layout plans taking in to account the wastewater and stormwater discharge. MoEPA gave comments for campsite 1& 2 and BP#2 for screening documents for wastewater treatment plant, management for oil separator, car wash facility, drainage system from oil separator, emissions information, and status of land. Comments received on 19/8/2021 Screening document for wastewater camp 1, Geotechnical information submitted to engineer in last week of August
2	Forest use agreement The tree cutting permit No 11/67971	Approved	Approval granted for RoW and Access roads
3	Tree cutting permit from the national agency of state property No 11/66281	Approved	-
4	Tree cutting permit order No 2598/S	Approved	-
5	Approval of construction or upgrade activities	Approved	Approved from Ministry of Economy and Sustainable Infrastructure
6	Transportation permit	Approved	Approved from Ministry of Internal Affairs for oversized and over weight
7	Spoil disposal approval – Environmental Decision	Under Completion	Under review by CRCC, CC submitted revised N2 at Plateau SD on 23/8/2021. Engineer asked to submit also the screening documents for the Donors
8	Permit to use explosives	Approved	Public Law Legal Entity Technical and Construction Supervision Agency
9	Construction permit	Approved	Approved by Public Law Legal Entity Technical and Construction Supervision Agency
10	locations of accommodation camp, batching plant and crusher	Under Completion	MoEPA rejected the location of Batching Plant#1 due to a house close to the location
11	Emissions of hazardous substances in to ambient air from stationary sources for batching plant	Under Completion	Documents submitted to engineer for BP#1 and BP#2 in Georgian language
12	Waste Management Report	Approved	Approved by MOEPA

13	Maximum Permissible discharges of Pollutants discharged to Surface Water	Under Completion	To be obtained by MoEPA prior to any discharge in to the River
14	Water extraction	Under Completion	CC preparing the documents
15	Quarry Near Bridge 2	Approved	Approval granted from MoEPA, Govt Mining Agency
16	Preconstruction Biodiversity Survey	Approved	Approved by MoEPA on 22/07/2021

6. GOOD PRACTICES

6.1 Good Practices

Lot#1

- CC for lot#1 installed the ventilation system which is properly working and provided the lights inside the emergency tunnel
- CC collecting the sludge from the sedimentation ponds and disposing in SDS# 1 across the E117 highway opposite to TBM Machine on daily basis.
- CC for lot#1 fenced the cultural heritage sites in the project Aol
- CC installed the water sprinkling system at the crushing plant
- CC installed four camera traps of which three along the Rivers and one at the hill near the tunnel 5 portal
- CC collecting the solid waste on daily basis from the bins and maintain the practice, cleanliness of the campsite is being improved on daily basis
- Water sprinkling is being carried out on regular basis. One water truck spraying water continuously on access roads and active construction site
- CC replaced the malfunctioning wastewater treatment plant and started collecting the sewerage on daily basis.
- Regular disinfection spray at the campsite and construction site

Lot 2

- Deep excavation fenced at the TUN # 1 exit at Plateau
- CC provided concrete washout facility for concrete trucks at BP# 2
- Workers provided drinking water at active construction sites at TUN# 1, Culvert section etc.
- Covering of raw material with tarpaulin sheets when not in use
- Regular sprinkling of water on branch line to suppress the fugitive dust emission

- Oxygen cylinder are kept in a fenced area in vertical position and trolley provided to hold cylinder while in use
- CC provided the Bio Toilets, where required;
- Stored the used tyres in demarcated area; however, required to cover these to avoid mosquitoes breeding
- CC installed the alarm system at camp 2
- Both the Contractors for Lot#1 & 2 arranged the testing for Covid-19 and actively taking protective measures against COVID 19. and following the recommendations related to COVID -19 issued by relevant Authorities

7. SUMMARY AND RECOMMENDATION

7.1 Summary

136. CC for lot # build the tunnel water treatment facility to collect the sediments, oil, wire mesh, and waste material and collecting the sludge on regular basis. PMCSC advised the CC for lot#1 to scaling being carried out by excavator bucket is not acceptable and it should be carried out by hydraulic rock breaker mounted on the excavator or backhoe loader to remove the shattered or loose rock according to subclause 11.4.24 of technical specification to avoid the risk of falling of loose rocks. Furthermore, at TUN#5 North portal there was a landslide due to slope failure that needs to be rehabilitated with slope protection work by constructing retaining wall and controlling the water flow causing the slope failure and reducing the distance between the rock bolts. PMCSC has advised the CC for Lot#1 to monitor the toxic gases in the tunnel by providing the toxic gases monitoring system with the dashboard at the entrance of the system highlighting the pollutant levels and alarm system to ensure the safe entry of the workers in the Emergency tunnel⁴.
137. Based on data provided by CC for lot#1, 520 employees were screened out for PCR test during the first week of July. Test results were positive for 35 persons and these employees were transferred to hotel for isolation.
138. CC for lot#2 has completed the Preconstruction/ prework biodiversity surveys and has hired the certified laboratory for instrumental monitoring as per Appendix- B of the EIA. CC for Lot# 2 provided the concrete washout facility at BP# 2, installed the grey water treatment system at BP#2 and providing the drip trays for Generator and oil containing machines. CC for lot#2 need to find out designated areas for topsoil storage areas to collect the topsoil stored at patched along access roads and ECoW has completed the survey to mark the locations for topsoil storage.
139. Based on data provided by CC for lot#2, 138 employees were screened out with PCR test during the first week of July. Test results showed only one positive case and that

⁴ Issues regarding tunnels were highlighted during the end of June and details will be provided in the next report.

employee was transferred to camp # 2 isolated area built by CC by fencing the designated area for Covid-19 positive cases.

7.2 Recommendations

140. Following bullets summarize the new recommended mitigation measures which are required to be adopted by both the contractors for Lot#1 and Lot#2 in the 3rd. and 4th quarter of 2021 to meet the requirement furnished in the EMP:

Lot 1

- CC to provide the dust monitoring and toxic gases monitoring system at the entrance of emergency tunnel to measure the concentration of dust and toxic gases including CO, CO₂, H₂S, NO_x Dust etc. Q3- Q4 2021
- CC required to collect the contaminated soil on regular basis in case of oil spill and store it in hazardous waste storage area for collection by Medical Technology Q3-Q4 2021
- CC to remove oil spill from the boiler room and oil spill kits should be present at the boiler room for all the time and drip trays required for refueling Q3-Q4 2021
- CC to provide the plastic bag on all the containers provided at the site Q3-Q4 2021
- CC to provide the gate for the camp as soon as possible and take the dogs out from the camp and restrict the entry of the dogs Q3-Q4 2021
- Proper metal/ plastic drip trays should be provided for secondary containment. Contractor needs to manufacture these and to provide for generators, spare parts, chemical containers and under the drums while using for refilling Q3-Q4 2021
- CC to demarcate the area for storage of scrap material and must be separated from topsoil behind segment factory Q3-Q4 2021
- CC to provide the solution for the pumping of the tunnel water as about after 1.6 km the gravity flow direction will decline towards south (Tskere side) and water needs to pump out for dewatering the tunnel Q3-Q4 2021
- CC to speed up the process of approval for temporary facilities from MoEPA by submitting the response to comments without delay Q3-Q4 2021

Lot 2

- Off road driving should be strictly restricted by the roads and vehicle should not be parked in designated parking areas to avoid the disturbance to vegetation Q3-Q4 2021
- CC provided the PPEs; however strict enforcement required to wear the full set of PPEs based on the requirement of the Job Q3-Q4 2021
- Patches of the stored top soil needs to be collected at one place according to Georgian laws and topsoil management plan Q3-Q4 2021
- CC to Install the camera traps at the sensitive habitats Q3-Q4 2021
- CC to hire the environmental specialist to speed up the process of getting the approval of MoEPA and meet the conditions set in the approval of EIA and CC for lot#1 and Lot#2 to complete all the management plans and layout plans and get it approved by PMCSC, RD and Lenders Q1- 2021, Q3- Q4 2021




- CC to provide the pullies for the flood channels crossing the access road 2 along the River Aragvi to avoid the water pollution caused by the tires of vehicles Q3- Q4 2021
- CC to remove the contaminated soil at different location and stored in a hazardous waste storage area. Q3- Q4 2021
- CC to provide designated topsoil storage areas and collect the patches of soil and stored according to Georgian legislations and topsoil management Plan Q3- Q4 2021
- CC to carry out water sprinkling on regular basis at branch line and other access road especially near the residences of village Zakatkari Q3- Q4 2021

141. Following are the recommendations made in the ADB mission note after the site visits carried out in June 2021.

- Spoil Disposal Plans for site A and B to be approved by the MoEPA;
- Cultural Heritage Management Plan to be finalized and approved;
- Track record system to be improved by the CC, PMCSC and PIU including issuance of non-compliance letters for the contractor, when necessary, with recommended solutions and specific deadlines for each action;
- Workers' accommodation conditions to be improved at Kobi accommodation camp site maintaining good housekeeping and prohibiting presence of stray dogs and electric stoves in the room;
- Contractor to arrange oil and grease separator for treatment of kitchen wastewater;
- Contractor to mobilize ambulance, especially for on-going blasting activities for tunnel north portal construction works, therefore no arrangement available for transporting of injured workers to hospital;
- Contractor to continue conducting of biodiversity surveys within AoI seasonally for fauna according to the phonological characteristics, and for flora in April-August 2021. The nearest survey is planned in spring 2021.
- Contractor to conduct pre-construction survey for the explosives' temporary storage area under Lot 2

ANNEXES

Annex 1: Project Pictures

#	Picture	Description
1		Ventilation system inside the emergency gallery
2		Signage for the construction along E117
3		CH across the road Info Displayed and site fenced

4



Disinfection of the site and campsite

5






Info provided for Otter species for workers awareness

6







Waste Bin placed at the campsite for collection by the municipality Compactor




7		Compactor truck to carry the solid waste
8		Sewage truck to carry the sewage from the septic tank
9		Material Covered with Tarpaulin at Lot#1




10	 <p>A photograph showing a stack of several yellow hazardous waste bins. The bins are stacked on top of each other, with some green bags visible behind them. The setting appears to be a warehouse or storage area with other materials in the background.</p>	Waste bins added for hazardous waste collection
11	 <p>A photograph of a group of workers wearing orange safety gear gathered in an open area. In the background, there is a building, a flagpole with a flag, and a sign. The ground is muddy and appears to be a construction or work site.</p>	Toolbox meeting before starting work in the morning
12	 <p>A photograph of a white water tanker truck parked on a gravel area. In the background, there is a large, green, sloping hillside and some industrial buildings. The scene is outdoors during the day.</p>	Regular water sprinkling at the E117 and site


13		<p>Oil spill in the refueling area due to improper refueling. NCR issued, CC submitted Corrective action but that was rejected by PMCSC</p>
14		<p>Hard floor required by paving the floor</p>
15		<p>Weekly meeting to discuss environmental issues, social and HSE issues</p>

16		Covered material storage area at BP for Lot#1
17		Overflowing waste from the Container at BP
18		Accidental oil spill in the tunnel due to malfunctioning vehicle




19		Oil Captured in the Container at the sedimentation tank lot#1
20		Water sprinkling at Branch line access road
21		Waste bins placed at camp 2
22		


23		Ambulance parked at lot 2 camp 1
24		Equipment removed from welding workshop at BP 2
25		Waste scattered near the camp 2

26		Waste removed area paved
27		Bridge at Argavi River for access road 2 to tunnel 1 portal
28		Covered material at TUN 1 entrance lot 2




29		Piling work to start at bridge 2 Pier 4
30		Generator need drip tray at Tun 1 entrance
31		Oxygen cylinder placed




32		Hazardous material covered at Camp 2
33		Wash out facility at BP camp 2
34		Paved floor at BP 2

35		Full PPEs for welding; however, need to change the place of welding workplace
36		Fire extinguishers at ware house
37		A view of BP# 2

38		Parking area workshop needs to be rearranged
39		Rearranged after 2 days
40		Welding workshop need to be shifted at lot 2 BP 2

41		Tunnel 1 exit Trench fenced
42		Hazardous waste storage area at camp 1 lot 2
43		Warning sign installed for the trench at exit portal tunnel 1

44		Generator requires drip tray and hard floor
45		Generator to be placed in drip tray
46		RD and ADB mission at Lot#1 in June 2021

47		Lot 1 Generators places in closed containers with all safety signs
48		Aerial Photograph of Lot 1 site
49		Camera Traps installed for faunal species along Narvani River and Near Tunnel Portal at Lot# 1

Annex 2: CC for Lot 1 Geological Condition Report

Geological Conditions for North Campsite

1. Geotechnical Survey

During the design stage, in order to obtain the data regarding the engineering-geological, hydrogeological and geotechnical properties of the ground, investigation boreholes were performed, from which sampling for laboratory testing was done with the purpose to be determined the physical-mechanical properties of the present lithological units along as Figure 1.



Figure 1 Borehole Drilling

The borehole drilling is performed by rotational method extracting the borehole core. The borehole core is placed in plastic or wooden boxes, after that, geological and geomechanical logging and photographing are performed, as well as sampling for further laboratory testing.

Where borehole walls were not stable, casing tubes were used. Samples taken from the borehole were placed into the special core boxes (wooden/plastic) with appropriate labeling and then were transported to the Contractor's geotechnical laboratory for testing purposes.

After completion of the drilling activities the core boxes were transported to the technical storage. During the drilling process engineering-geological documentation (BH logs) was being prepared describing each encountered stratum, sampling interval, SPT data, ground water level, etc.

The following information was recorded on the borehole logs:

- The project name;
- Location of boring;
- Boring log number;
- Method of drilling;
- Diameter of borehole;
- Name of Driller;
- Sheet number and total number of log sheets for the boring;
- Geotechnical description of soils/rocks;

- SPT data;
- Stratigraphical profile;
- RQD %;
- Weathering degree of rocks;
- Strength;
- Number of fissures, shape and roughness;
- RMR data;

Laboratory tests were carried on the samples taken from the boreholes.

The basic information for the depth of the boreholes, their coordinates, performed SPT, etc. is shown in following table.

Table 1 Borehole information near Kobi village

BH	Coordinates			Start-Finish Date	BH depth, m	SPT	Piezometer (Depth m)	Field Tests	
	X	Y	Z					Lugeon	Lefranc
B-22+860	459460.04	4711542.53	1984.44	04.08.17- 17.08.17	200	-	-	-	-
B-23+490	459771.58	4711909.53	1970	02.08.07- 07.08.17	30	7	-	-	1
B-23+600	460358.72	4711413.7	2034.44	28.09.17- 30.09.17	25	-	-	-	-

During the investigation works, soil and rock samples at certain depths have been selected and intact rock samples have been taken from the measurement points. For determination for the basic physical-mechanical properties of the present materials, all necessary laboratory tests have been performed according to the current standards.

The deep electrical resistivity tomography method is also used to determine the geophysical survey. Electrical resistivity of rocks is one of the most characteristic petrophysical parameter. Their values depend on the lithology, clay content, porosity, water content, salinity, etc., of the ground. By the application of this geophysical method through measurements conveniently collected on the surface, it is possible to get information regarding the resistivity distribution of the ground and to interpret such distribution to identify geological boundaries or local discontinuities like fault zones, among some other objective.

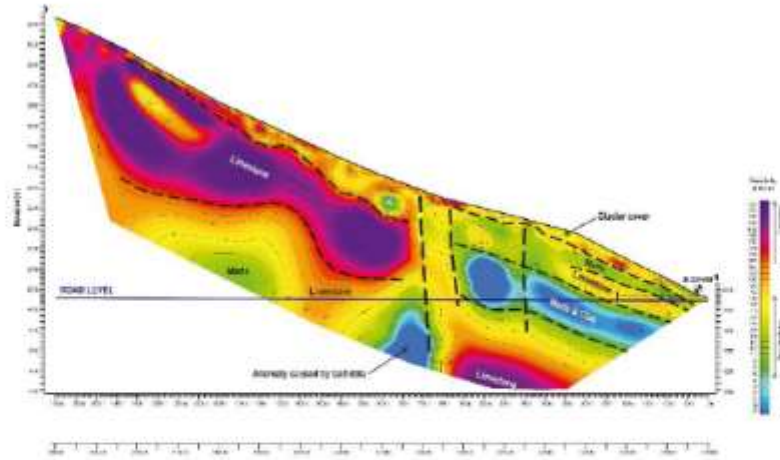


Figure 2 Deep ERT surveys along Gudauri Tunnel (North Tunnel side)



Figure 3 Deep ERT surveys along Gudauri Tunnel

Therefore, detailed engineering geological mapping, boreholes, trial pits, geomechanical stations, Seismic Profiles and profiles of ERT were carried to assess the geological and geotechnical profiles of the tunnel. The detailed engineering geological mapping and profiles of the north site is shown in below:



Figure 4 Engineering Geological and Geotechnical mapping of north site

2. Geological Setting

The region of the Kvesheti-Kobi road section is situated into the Black Sea – Central Transcaucasian terrain, a complex structure caused by the collision of the Afro-Arabian plate and the East European plate. In detail, the studied zone is situated into the Kazbegi – Tphan subterrain, characterized by preorogenic sequences from Jurassic to Cretaceous of a marginal sea environment (figure below).

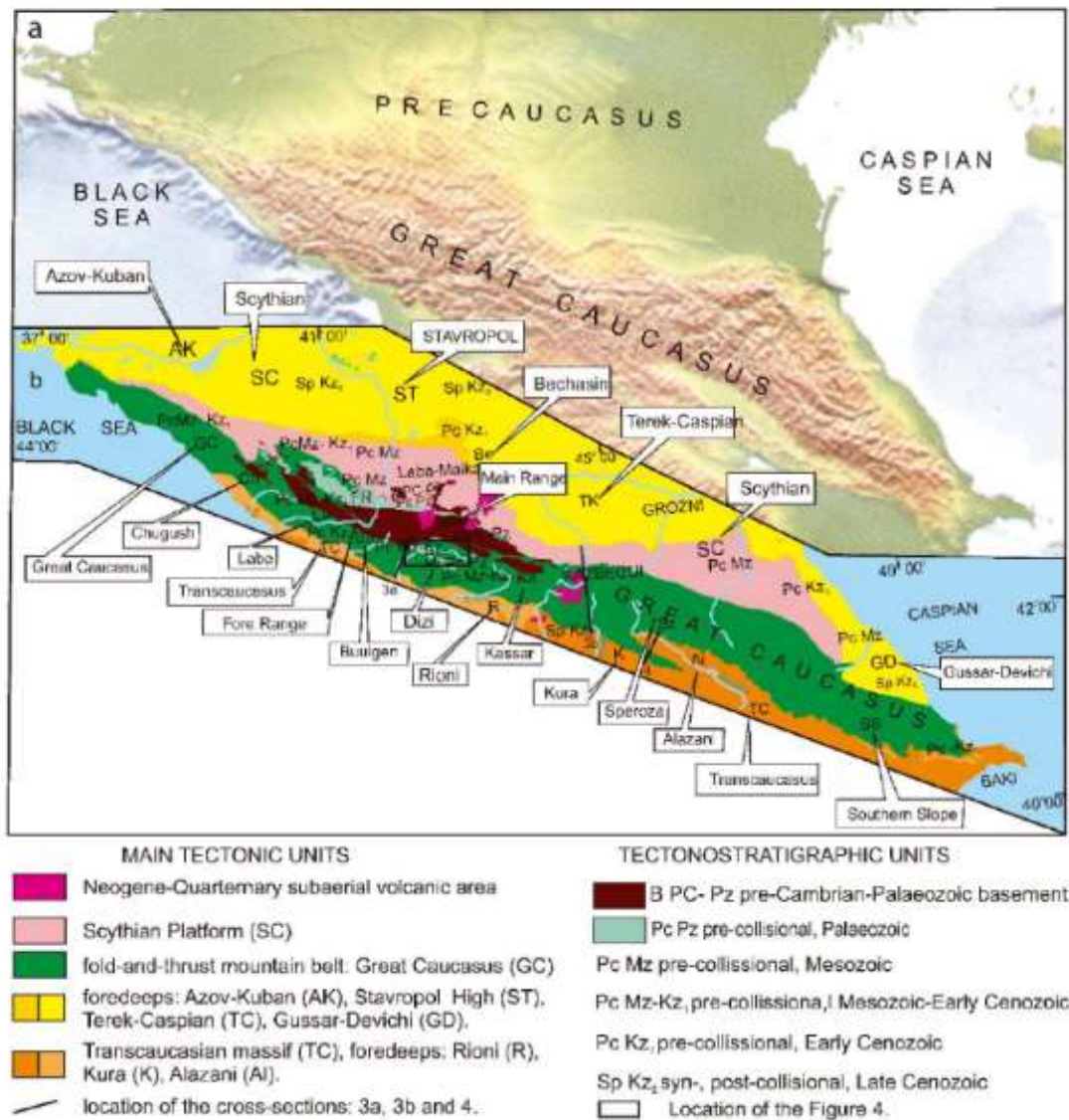


Figure 5 General overview of the tectonic units of the Great Caucasus (Adamia et al., 2014b)

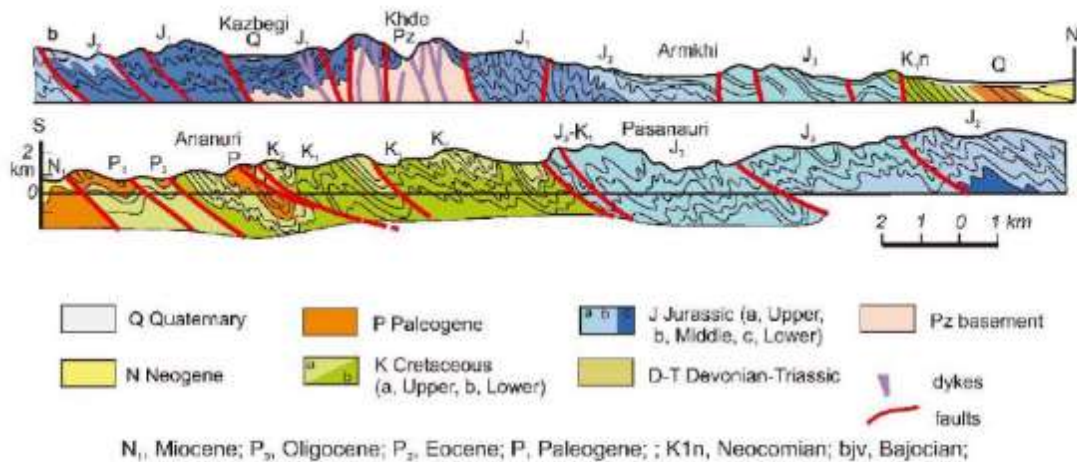


Figure 6 General section into the studied region showing the relations between the different geological units (Adamia et al., 2014b)

The studied section is characterized by the outcrops of a Mesozoic basement, covered by recent volcanic and quaternary sediments of different nature. The basement, is composed mainly by mudstones and shales in northern part. Deformational style of both parts is different, with a recumbent folding domain, with associated foliation in the north.

Two different units can be distinguished in the area; an older sequence, of a probably middle to Upper Jurassic age, composed by carbonates with interbedded scarce sandstone levels, and a younger sequence, of lower cretaceous age, characterized by the presence of carbonaceous black shales and calcareous sandstones.

3. Information for North site

According to the survey results mentioned above, it is belonging to Qal-f for the campsite, Crushing plant, and Batching plant, which include mostly sands and stones due to alluviation and partly marly clay especially for campsite.

For the territory of the Crushing plant and Batching plant, it is composed of Brownish-Grey sandy, slightly silty-clayey dense gravel and cobbles with boulders inclusions, saturated from 2.7m, while gravels and cobbles are rounded and subrounded. aQ₄ alluvial (0.0-14.5m). Meanwhile, for the campsite, the upper layer is slightly sandy, silty-clayey gravel (angular), lithologically composed by slate fragments.-fQ₄ fill. Based on the borehole log, the lower layer is composed of slightly weathered and moderately weathered, strong and medium strong, grey, slightly carbonaceous marly-slates. The surfaces of fissures are smooth and rarely rough, planar and stepped, and fissures are filled with silt and clay, iron oxides are observed at some parts. -I₃₀ Upper Jurassic. Oxfordian stage.

Taking into account the available results from the area in this unit "Qal-f", the unit weight ranges from 24 to 26 KN/m³. With the available results, a value of 25 KN/m³ is considered

representative. At the same time, the results from the campsite shows that the SPT ranges from 25 to 60 with the average value of 35, the unit weight from 16-21 KN/m³ with a representative value of 20 KN/m³.

In "Qal-f" Unit, the values of UCS strength are in the range 50 to 90 MPa, with an average value of 70 MPa got from the rock sampled near the batching plant.

Since there is no borehole and sample taken from this unit in the design stage, the unit weights and UCS values are got by the test in the Contractor's laboratory.

4. Negative geological processes (Mudflows, landslides and etc.)

Construction camp is located at left side bottom of the riv. Narovani valley on a 1st terrace of flood meadow. Camp is located 50 m away from the river and is totally secured from the negative impact of high water levels. Since the river at this location flows on its widespread river bed, its kinetic energy is minimal and non-hazardous. Impact of slope processes to Construction camp is less possible to occur as the camp is located in approximately 20~30m away from the bottom of the slope. In addition, bottom of the slope at this area is covered with woods where small-leaved tree species are common with average height of 8.12m, main trunk diameter of 0.2~0.3 m with the 2~3 spacing between the trees. Gradient of the slope is northward 40-50°, with considerably smooth terrain formed by locally common rock sediment layers (limestone, dolomites) with the small partitions. Their length and width in lower parts of the slope along with lithological structure of the slope does not allow large-scale mudflow processes to be developed. Therefore, Construction camp territory is completely safe in terms of mudflows. In regard of revealing landslide processes, it shall be said, that no past traces of landslides are found. Partial sliding of small sized surface layers does not pose a threat to the subjected territory.



Date: June 25, 2021

Our Ref: 210625-0178- CRTG-UBM
Your Ref:
To: UBM ULUSLARARASI BİRLEŞMİŞ MÜŞAVİRLER MÜŞAVİRLİK HİZMETLERİ A.Ş. 11 Apakidze Street Tbilisi
Attn: Mr. Arif Ozer, Acting Team Leader
CC: Roads Department of The Ministry of Regional Development and Infrastructure of Georgia (RDMRD). 12 Kazbegi Ave., 0160 Tbilisi, Georgia Mr. Levan Kupatashvili, Deputy Chairman

Contract No. KKR/CW/CP-01R: Construction of Kvesheti- Kobi Road (Tunnel Section) under North-South Corridor (Kvesheti-Kobi) Road Project

Subject: Submission of Geological Conditions and Survey Report of potential avalanche risk for Campsite#1

Dear Sir,

Please find enclosed submission of Geological Conditions and Survey Report of potential avalanche risk for the North Construction Camps located in village Kobi of Kazbegi municipality.

Given documents were reviewed by MoEPA and respective comments were issued on June 4, 2021 (ref. No. N 5653/01). The Contractor updated subjected documents in line with MoEPA's comments and now hereby submits them for your review and further proceedings.

Sincerely yours,

For and On Behalf of

CHINA RAILWAY TUNNEL GROUP CO., LTD. BRANCH IN GEORGIA

CEN DAOYONG

Project Manager



Enclosed with 2 annexes, 64 pages in total:

Annex 3: Instrumental Monitoring Test Results

Monthly Instrumental Monitoring for Lot#1



GERGILI LLC

**KVESHETI-KOBI HIGHWAY
ENVIRONMENTAL MONITORING
MONTHLY REPORT**

BY GERGILI LLC

JUNE, 2021



Gergili LLC

Address: Tbilisi, Georgia, Vazha-Pshavela, III quarter, building N7. ID Code: 202200787. Tel: +995 599 16 44 69,
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1. General Information

Project number: #190621

Date of the monitoring: 19.06.2021

Gergili LLC team undertakes monthly monitoring services for ambient air quality, noise, and water quality monitoring on Kvesheti-Kobi highway construction.

This report represents the results of the monitoring activities performed by Gergili team in June, 2021. The work was done according to the proposal prepared for Kvesheti-Kobi highway construction. The methodology and procedures follow international guidelines.

During the monitoring, the construction was in an active phase, all the technique was on and working. Therefore, the results of the monitoring activities represent the actual, full scale impact of the construction activities on the environment.

Monitoring activities included ambient air monitoring of the following parameters: PM10, PM2.5, NO_x, SO_x, and CO concentrations, surface and ground water quality analysis, and noise monitoring.

2. Description of the Performed Works

For June's monitoring, the sample of ground water was taken. There were 2 points for ambient air monitoring: 1 for CO and Particulate Matter, and 1 for SO_x and NO_x. Noise was measured at 1 point as well.

During the monitoring activities, Gergili team used Aeroqual Series 500 for ambient air monitoring (all parameters), water monitoring has not been done at the location, water was sampled and then analyzed in the lab. For noise monitoring, Triplet 3550 Sound Level Meter was used.

Each monitoring session lasted for 1 hour.

The monitoring took place on 19th of June, 2021. The weather was warm, +23/24 degrees Celsius. All the equipment were calibrated, cleaned and tested for the field work.

Table 2.1.1 GPS coordinates of the monitoring points

#	Monitoring Point Reference	Type Of Monitoring	E	N	Date
1	GWS #1	Ground Water	45996.2	4711510	19 th June
2	AAS #1	PM _{2.5} , PM ₁₀ , PM _{total} , CO	459307	4711741	19 th June
3	AAS #2	NO _x , SO _x	459494	4711616	19 th June
4	NM #1	Noise	459943	4711826	19 th June

Image 2.1.2 Monitoring points on Kobi-Kvesheti Construction site



3. Water Quality Monitoring

3.1 Ground Water Monitoring-GWS-#1

Water sample was taken from the well. The well contains drinking water which is collected from the mountain. The well is located above the construction camp.

Gergili team used sterile bottles for sampling. The samples were not examined/analyzed at the location. Instead, they were sent to the lab considering all the safety rules.

Table 3.1.1 Results of Ground Water Sample (GWS-#1)With Permissible Norms and Used Methods

Parameter	Measurement unit	Method used	Result	Maximum permissible limit
Organoleptic Parameters				
Color	degrees	GOST 23268.1-91	3	<15
Odor	OU	GOST23268.1-91	0	<2
Taste	TU	GOST23268.1-91	0	<2
Physical-chemical Parameters				
pH	-	ISO10523:2008	7.93	6--9
Turbidity	NTU	ISO 7024:1:2016	0	<2
Boron (B)	mg/L	LCK 307	0.023	0.5
Arsenicum (As)	mg/L	ISO 17378-2:2014	0	0.01

Cadmium (Cd)	mg/L	ISO 11047:1998	0	0.003	
Copper (Cu)	mg/L	HACH LANGE LCK 329	0.039	2	
Mercury (Hg)	mg/L	ISO 12846:2012	0.00017	0.006	
Nickel (Ni)	mg/L	HACH LANGE LCK 537	0.002	0.07	
Lead (Pb)	mg/L	HACH LANGE LCK 306	0.00019	0.01	
Selenium (Se)	mg/L	ISO 17379-2:2013	0	0.01	
Zincum (Zn)	mg/L	HACH LANGE LCK 360	0	3	
Cyanides (CN ⁻)	mg/L	HACH LANGE LCK 315	0.007	0.07	
Sodium (Na)	mg/L	ISO9964-1:1993	1.38	200	
TPH	mg/L	ISO 11504:2017	0	0.1	
sulphates (SO ₄ ²⁻)	mg/L	HACH LANGE LCK 153	13.0	250	
Chlorides (Cl ⁻)	mg/L	ISO9297:1989	4.19	250	
Microbiological Parameters					
Total Coliforms	cfu/300 mL	ISO9308-1:2014	Not Detecte d	Not permissible	
Thermotolerant Coliforms	Bacteria in 100 ð3	ISO 9308-2:1990	Not Detecte d	Not permissible	
Sulphite reducing Clostridia	Spores 20 in bð3	ISO 15213:2003	Not Detecte d	Not permissible	
Mesophilic aerobes and facultative anaerobes	37 °C	Cfu/mL	ISO 6222:2008	0	<20
	22 °C		ISO 6222:2008	0	<100

4 Air Quality Monitoring

4.1 Air Monitoring Point 1

Air monitoring point is located near the factory. At this location, carbon monoxide and particulate matter concentrations were evaluated. During the monitoring, construction works were in progress.

Image 4.1.1 Air Quality Monitoring Point 1



In order to evaluate dust particle concentration in the air, the team used Aeroqual Series 500, which includes PM10, PM2.5 sensor. The specific sensor is calibrated and tested for its accuracy and precision. CO concentration was also evaluated using Aeroqual series 500, with specific CO sensor which is also calibrated and tested.

Table 4.1.1 Dust Particles (PM10, PM2.5) and Carbon Monoxide (CO) Concentration Permissible Limits

Parameter	Time Interval	Maximum Permissible Concentration $\mu\text{g}/\text{m}^3$
PM 2.5	1 hr	25
	1 year	10
PM 10	1 hr	50
	24 hrs	50
	1 year	20
CO	8 hour mean	1000

Table 4.1.2 Dust Particles and CO monitoring results

Parameters	Minimum	Maximum	Average value of 1 hour measurements	Methods used
PM 10	1	3.8	2.4	Aeroqual SERIES 500-PM Sensor
PM 2.5	1	4	2.7	Aeroqual SERIES 500-PM Sensor
CO	0	1765	623	Aeroqual SERIES 500-CO Sensor

4.2 Air Monitoring Point 2

At the second location Nitrogen dioxide and Sulfur dioxide concentrations were monitored.

Image 4.2.1 Air Quality Monitoring Point 2



These parameters were also measured for 1 hour. Aeroqual Series 500 was on for an hour. For Nitrogen dioxide annual concentration measurements in the future, Gergili team will install diffusion tubes.

Table 4.2.1 Nitrogen Oxides and Sulfur Oxides Permissible Limits

Parameter	Time Interval	Maximum Permissible Concentration $\mu\text{g}/\text{m}^3$
NO _x	1 hour	200
	1 year	40
SO _x	1 hour	350
	24 hrs	125
	1 year	500

Table 4.2.2 Nitrogen Oxides and Sulfur Oxides Concentration Monitoring Results ($\mu\text{g}/\text{m}^3$)

Parameter	Minimum	Maximum	1 hr measurement mean value	Method used
NO _x	27	39	27.6	Aeroqual SERIES 500- Sensor
SO _x	0	33	16.1	Aeroqual SERIES 500-PM Sensor

5.Noise Level Monitoring

Noise level was determined at 1 location. The purpose of noise level monitoring is to determine how construction works affect the population. The noise level was determined using Triplet 3550 Sound Level Meter.

Image 5.1.1 Noise Monitoring Point



Image 5.1.2 Measurement on Noise Monitoring Point



Table 5.1.1 Noise Monitoring Results

Different Parameters of Noise Level	Result (Decibel)
LA_{eq}	41.8
LAF_{max}	51.7
LAF_{min}	40.2
LAF_{50}	43.7

6 Methodology and Instruments used

6.1 Air

For air monitoring, Gergili team used 4 different sensors of Aeroqual Series 500 (PM10/PM2.5, CO, NO_x, SO_x).

Image 6.1 Air Quality Measuring Instrument Aeroqual Series 500



were sent to the partner laboratories.

Image 6.2.1 Instrument used for several parameters (pH, Conductivity, Salinity)



Image 6.2.2 Instrument used for measuring many parameters- HACH LANGE DR3900 spectrophotometer



Image 6.3.1 Noise measurement instrument REED Instruments 9300





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Laboratory Ltd

ID Code : 405347469

Report № 1906211

Sample name and quantity-Ground water,3 Liters

Sampling place – well located close to the Kvesheti-Kobi Road

Client Name:China Railway Tunnel Group Co., Ltd.

Sample identification code:#19062021-1

Sampling date:19.06.2021

Sample Received in the laboratory :19.06.21

The analysis completed: 29.06.2021



„B-B-E“ Scientific-Research Laboratory Ltd

Report № 1906211

Parameter	Measurement unit	Method used	Result	Maximum permissible limit
Organoleptic Parameters				
Color	degrees	GOST 23268.1-91	3	<15
Odor	OU	GOST23268.1-91	0	<2
Taste	TU	GOST23268.1-91	0	<2
Physical-Chemical Parameters				
pH	-	ISO10523:2008	7.93	6--9
Turbidity	NTU	ISO 7024:1:2016	0	<2
Boron (B)	mg/L	HACH LANGE LCK 307	0.023	0.5
Copper(Cu)	mg/L	HACH LANGE LCK 329	0.039	2
Nickel(Ni)	mg/L	HACH LANGE LCK 537	0.002	0.07
Zincum (Zn)	mg/L	HACH LANGE LCK 360	0	3
Cyanide (CN ⁻)	mg/L	HACH LANGE LCK 315	0.007	0.07



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ID Code : 405347469

Report № 19062112

Sample name and quantity-Ground water,3 Liters

Sampling place – well located close to the Kvesheti-Kobi Road

Client Name:China Railway Tunnel Group Co., Ltd.

Sample identification code:#19062021-1

Sampling date:19.06.2021

Sample Received in the laboratory :19.06.21

The analysis completed: 06.07.2021

Contact Person: Nino Gogatishvili

Tel: +995 579-16-29-89

bbelab2019@gmail.com



„B-B-E“ Scientific-Research Laboratory Ltd

Report № 19062112

Physical-chemical Parameters				
Arsenicum (As)	mg/L	ISO 17378-2:2014	0	0.01
Cadmium (Cd)	mg/L	ISO 11047:1998	0	0.003
Mercury (Hg)	mg/L	ISO 12846:2012	0.00017	0.006
Lead (Pb)	mg/L	HACH LANGE LCK 306	0.00019	0.01
Selenium (Se)	mg/L	ISO 17379-2:2013	0	0.01
Sodium (Na)	mg/L	ISO9964-1:1993	1.38	200
TPH	mg/L	ISO 11504:2017	0.00	0.1
sulphates (SO ₄ ²⁻)	mg/L	HACH LANGE LCK 153	13.0	250
Chlorides (Cl ⁻)	mg/L	ISO9297:1989	4.19	250
Microbiological Parameters				
Total Coliforms	cfu/300 mL	ISO9308-1:2014	Not Detected	Not permissible
Thermotolerant Coliforms	Bacteria in 100 Ø3	ISO 9308-2:1990	Not Detected	Not permissible
Sulphite reducing Clostridia	Spores 20 in cm ³	ISO 15213:2003	Not Detected	Not permissible

Vibration Monitoring Results

North–South Corridor (Kvesheti–Kobi) Road Project Vibration Survey Report



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Archil Revazishvili

A handwritten signature in blue ink, appearing to read 'A. Revazishvili'.



Tbilisi
2021

Context

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1. Introduction

Vibration induced in buildings are a frequent concern in cities around the world. Commonly, complaints are made by homeowners, as heavy construction vehicles travel at various speeds on adjacent roads, resulting in annoying vibrations and possible structural damage. Passenger vehicles rarely produce perceptible vibrations to cause significant structural damage. Generally, traffic induced vibrations are caused by heavy vehicles. These vibrations are generated by road surface irregularities, namely: potholes, cracks, and uneven pavement joints. Dynamic interaction forces between the vehicle and pavement are created by these irregularities resulting in a generation of stress waves that travel through the adjacent soils.

Vibrations produce damaging stress waves that quickly reach building foundations, causing them to vibrate. Several factors may contribute to vibration levels, including: road condition, vehicle speed, vehicle weight, soil conditions, building characteristics, vehicle suspension system, season of the year, and distance between the structure and the road. When a large vehicle strikes an irregularity, an impact load, as well as an oscillating load due to the “axle hop” of the vehicle are generated. The impact load generates ground vibrations that are predominant at the natural vibration frequencies of the soil, whereas the axle hop generates vibrations at the hop frequency, which is a characteristic of the vehicle’s suspension system. Vibrations can be amplified if the natural frequency of the building coincides with the natural frequency of the soil.

Soil type and stratification can influence the level of vibration greatly. Vibration levels increase as soil stiffness and damping decrease. Traffic vibrations appear worst in areas underlain by a soft silty clay layer between 7 meters and 15 meters deep. The natural frequencies of the soil may coincide with the natural frequency of the structures at these locations. Seasonal variations and the moisture content of the soil are also a consideration when measuring vibrations. In locations where the topsoil freezes, vibration levels can be less than half those in other seasons.

Vibration sources such as construction activities and road traffic, are among the sources considered potentially dangerous to buildings and structures. In general, structural damages to buildings are extremely rare and are in general caused by other sources. Structural damages occur when the permissive levels of vibration are exceeded. Degrees of damage are methodologically defined and vary from those that do not affect the structural safety of the buildings but affect the value of assets – e.g. formation of cracks in the plaster, increase in existing cracks, damage of architectural elements etc.

The classification of damage categories used in analysis of vibration impacts is determined by ISO 4866 and is the following:

- **Damage threshold:** Formation of cracks on the surfaces of the thread-like drywall, increase of existing cracks on the plaster surfaces or on the surfaces of dry stone walls; also cracks in the mortar joints in the thread-like construction in brick and concrete;
- **Minor damage:** Widening of cracks, detachment and fall of plaster or pieces of plaster drywall; formation of cracks in blocks of brick or concrete;

- **Major damage:** Damage of structural elements; cracks in the support columns; opening of joints; set of cracks in masonry.

In the present work the effects of vibration in terms of nuisance/annoyance to people are not considered, and only the potential damage to structures are evaluated.

Based on the 2020 december agreement signed between parties "Eco-Spectri" and "China railway tunnel group Co., Ltd. Branch in Georgia", Ltd "Eco-Spectri" conducted a study on the propagation of vibration in Kobi Village, during tunnel construction works.

2. Project Description

The Government of Georgia (GoG) has launched a program to upgrade the major roads of the country. The program is being managed by the Roads Department (RD) of the Ministry of Regional Development and Infrastructure (MoRDI). As a part of the program, upgrading of Kvesheti-Kobi section of the E117 is planned. This section includes the construction of 9 km long main tunnel that will cross the Caucasus ridge bypassing the existing road that connects Kvesheti to Kobi through Gudauri area and the Jivari pass. The project is located in Dusheti and Kazbegi municipalities, Mtskheta-Mtianeti region in the central northern part of Georgia.

Kvesheti Kobi road section with six junctions and three service roads will play an important role in the development of Kazbegi and Dusheti municipalities by facilitating the communities of Kvesheti, Bedoni, Tskere and Kobi by providing year-round access to markets, educational institution, health facilities of capital Tbilisi and increase the tourist attraction in Trege valley.

The tunnel provides more secure and reliable conditions for passengers on the road in winter. Besides The National Park of Kazbegi and Gudauri Winter Resort will avoid the traffic flow by the help of the new road. The road will also improve the livelihood conditions of inhabitants living in gorge. They are isolated from outside world in winter and the villages of Khada are almost empty. There are no grocery store and pharmacy and the medical assistance is not available. Because of the nonexistence of the road and severe weather conditions local people have to go to Kvesheti on foot, which is connected with a lot of difficulties and risks. We must take into consideration the fact that there are mostly middle aged and elderly people living in the upper villages of gorge. It's especially hard for them to pass this road in winter.

After project realization, distance between Kvesheti and Kobi will be reduced by 12 km instead of existing 35 km road, and travel time will be reduced to 20 minutes instead of 1 hour.

The construction works of Kvesheti-Kobi section is financing by Asian Development Bank and European Bank for Reconstruction and Development. The construction works started in the end of 2019 and will be completed in 2023.

During this reporting period project is at construction stage. Contractor is carrying out activities related to tunnel construction, permitting, machinery mobilization, approval and designing of gas pipeline relocation, identification and fulfilling the requirements for spoil disposal areas, development of living arrangements, get approved site specific and topic specific management plans.

Figure 1: Project Location



The length of the new alignment is 22.7 km and will be divided into two construction packages, or 'Lots' as follows:

- Lot 1: Tskere – Kobi: Chainage KM 12.7 – KM 22.7 (10 km);
- Lot 2: Kvesheti – Tskere: Chainage KM 0.0 – KM 12.7 (12.7 km).

The present vibration survey report covers lot 1 - Kobi village section.

3. Triaxial Vibration Monitor VM40A/B

The VM40 is designed for measuring vibration in buildings, bridges, towers, pipelines and various other large structures. The measurements serve to prevent possible structural damage or disturbance to people. The VM40 contains a sensor, recording and evaluation electronics and an accumulator in its robust casing. It is especially suitable for autonomous operation over longer periods of time e.g. on construction sites (Figure 2).

Figure 2. Triaxial Vibration Monitor VM40A/B



The instrument contains three highly sensitive piezoelectric systems for vibration measurement of all three special dimensions. The signal processing is controlled by a microprocessor. The VM40 is operated via its seven keypad buttons and illuminated LCD display. The measurement data can be transferred to a PC via the USB interface. The instrument also has a port for connecting a charger and a relay output for the external signaling of vibration occurrences. The VM40 can measure in accordance with the following standards:

- DIN 4150-3: Structural Vibration – Effects of vibration on structures;
- BS 7385: Evaluation and measurement for vibration in buildings;
- SN 640312 a: Effects of vibration on buildings.

Through menu navigation, all information concerning the type and location of the measurement and the building type is requested and operational errors are avoided. The display of the measurement values is carried out using the three peak values of vibration velocity ($X/Y/Z$) or the vector sum. Furthermore, the main frequency and its coordinate are displayed for the highest amplitude. Additionally, the VM40 displays the FFT spectrum of the measured vibration quantity. The spectral graph also indicates the limit value curve of the chosen standard, which enables you to analyze potential damage at a glance. If the limit value is exceeded, the measured value can be saved. The VM40 also contains two LEDs and a relay output for signaling alarm status. The VM40B also has the option of sending an SMS report, via its built-in GSM modem, if a limit value is exceeded.

4. Measuring in accordance with DIN 4150-3 Standard

DIN 4150-3 is the most widely applied standard internationally for measuring structural vibrations. The measurement procedure can be found in a similar form in other national standards, for example the Italian UNI 9916. The assessment parameter is the maximum value (V_i) of the three individual components (peak values) of vibration velocity at frequencies of 1 to 80 Hz.

The measurements are carried out at the foundation. Vibrations in the ceiling of the upper most outer walls also provide valuable information for analysis. These detect the horizontal response of the building to the vibration at the foundation. Only the greatest value of both the horizontal components is then used for the analysis.

The standard provides guide values for permissible vibration velocities for short time and sustained vibrations in three types of buildings (Notes from DIN 4150-3 about the guide values is given in Table 1, 2).

Table 1: Guide values for transient vibration

Guide values for vibration velocity for analyzing the effects of transient vibration					
Building Type	Foundation Frequency of the Significant Vibration			Upper ceiling	
	1 – 10 Hz	10 – 50 Hz	50 – 100 Hz	All frequencies	
Direction	X / Y / Z	X / Y / Z	X / Y / Z	X / Y	Z
Reinforced or framed structures. Industrial and heavy commercial buildings	20 mm/s	20 – 40 mm/s	40 – 50 mm/s	40 mm/s	20 mm/s
Unreinforced or light framed structures/ Residential or light commercial type buildings	5 mm/s	5 – 15 mm/s	15 – 20 mm/s	15 mm/s	20 mm/s
Delicate, listed buildings e.g. historical monuments	3 mm/s	3 – 8 mm/s	8 – 10 mm/s	8 mm/s	20 mm/s

Table 2: Guide values for continuous vibration

Guide values for vibration velocity v_i for analyzing the effects of continuous vibration		
Building Type	Upper ceiling level, all Frequencies	
	X / Y (horizontal)	Z (vertical)
Reinforced or framed structures industrial and heavy commercial buildings	10 mm/s	10 mm/s
Unreinforced or light framed structures, residential or light commercial type buildings	5 mm/s	10 mm/s
Delicate buildings, listed buildings e.g. historical monuments	2.5 mm/s	-

Vertical continuous vibration with a vibration velocity below 10 mm/s normally do not cause damage to ceilings in houses. For delicate buildings there are no guide values available.

For sustained vibrations on pipelines, the guide values for short time vibrations, reduced by 50%, can be applied.

The following advice is given in DIN 4150-3 for the placement of sensors:

- For foundation vibrations the transducer should be placed on the lowest floor at the foundation or on the outer wall.
- In the upper ceiling level, the sensor should be placed inside or very close to the outer wall.
- For buildings without a basement the measurement location must not be higher than 0.5m above the ground level.
- The measurement location should predominantly be on the side of the building facing the excitation.
- One of the lateral coordinates (X / Y) should be parallel to an outside edge of the building.
- Buildings with larger ground areas should be measured at several points.
- In addition to measuring at the foundation and the upper ceiling, if required, measurements can be carried out in the vertical direction on the ceilings, where the strongest vibrations are to be expected (mostly central).
- When measuring pipelines, where possible, the sensor should be placed on the pipeline itself.

5. Evaluation of Effects of Vibration on Buildings

5.1 DIN 4150-3 Standard

Categorization of buildings: Table 1, 2 contains building categorization determined by DIN 4150, in particular: Category 1: Commercial/Industrial buildings and similar; Category 2: Residential building and similar; and Category 3: Sensitive Buildings.

Short or long vibration: In case of construction of the road as well as in case of road operation, the buildings will be subject to short vibration impacts – impacts that occur for short period of time (e.g. the period of time when roller compactor is working or when a heavy vehicle is crossing in front of an impacted building). Characterization of long (transient) and short vibrations is defined in DIN 4150-3. Nevertheless, only for demonstration purpose, in comparison of modelled vibration impact to the damage thresholds, thresholds for both – short and long vibration impacts for II category buildings assigned to structures have been referred.

5.2 ISO 4866:2010 Standard – Mechanical Vibration and Shock

The principles for carrying out vibration measurement and processing data regarding the effects of vibration on structures are established by the International Standard ISO4866:2010 - “Mechanical vibration and shock, Vibration of fixed structures, Guidelines for the measurement of vibrations and evaluation of their effects on structures”.

The most common and frequent structural damage from man-made sources occurs in the frequency range from 1 to 150 Hz.

Natural sources, such as earthquakes and wind excitation, usually contain damage-level energy at lower frequencies, in the range from 0,1 Hz to 30 Hz.

The classes are defined with reference to a building Unreinforced or light framed structures/ Residential or light commercial type. The reference building shall not have any constructional defects nor shall it have sustained accidental damage. If the construction does not fulfil these requirements, it shall be allocated to a lower class.

Description of Damage

For the purposes of this International Standard ISO 4866:2010, the damages classified into the following categories:

- **Cosmetic.** The formation of hairline cracks on drywall surfaces (see ISO 4356), or the growth of existing cracks in plaster or drywall surfaces; in addition, the formation of hairline cracks in mortar joints of brick/concrete block construction.
- **Minor.** The formation of large cracks or loosening and falling of plaster or drywall surfaces, or cracks through bricks/concrete blocks.
- **Major.** The damage to structural elements of the structure, cracks in support columns, loosening of joints, splaying of masonry cracks, etc.

6. Vibration propagation study

On 14.03 - 02.04, 2021, Vibration survey field works were carried out by the representatives of Ltd "Eco-Spectri". The research procedure was conducted in accordance with the form approved by the organization. The aim of the study was to assess the impact of vibration generated during construction works on the surrounding buildings. Three points were defined as the location of the vibrating device:

- 1) The area of the village Kobi;
- 2) Church adjacent to the construction site;
- 3) In residential building in Almasiani village.

The tables below show the measurement protocol N1, N2, N3 where the technical details of the measurements are presented. The first and last data of the vibration value is relatively high due to the touch of the on / off button on the screen of the device. Construction work was intensive while receiving the vibration data. Data collection at point N1 took 20 minutes, at point N2 during 14.03 - 02.04, 18 days continuously and at point N3 - 90 minute. Totally, Approximately 27500 data were collected.

Measurement protocol N1	
1. General	
1.1 Person in charge	Archil Revazishvili - Head of the Examination Lab
1.2 Measurement period	14.03.2021 11:49:23 - 14.03.2021 12:10:41
2. Kind of vibration	
2.1 Excitation	Construction work
2.2 Operating conditions	Intensive construction
3. Structure	
3.1 Name and address	Village Kobi
3.2 Classification	Open space
3.3 Description	Yard
4. Location and position	
4.1 Source of vibration	





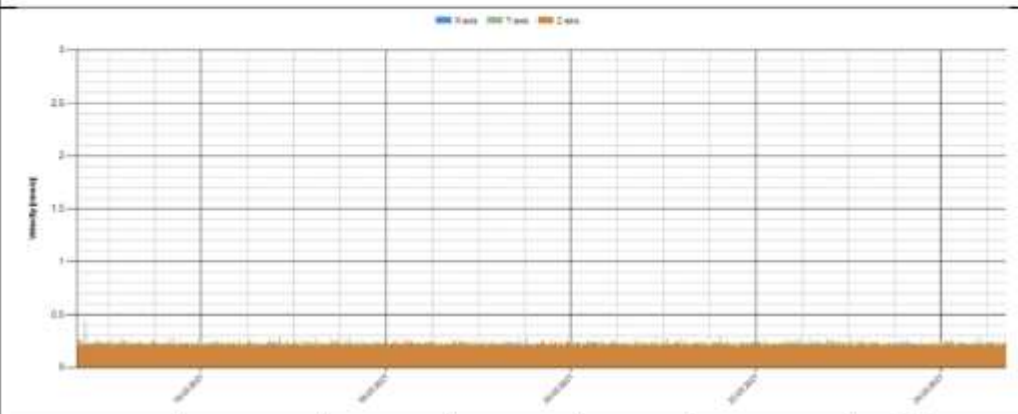
5. Environmental conditions	Opened space; The smooth surface of the ground.					
6. Subjective observations	The vibration of the working specifics doesn't affect on the general condition					
7. Measuring chain	Triaxial Vibration Meter VM40B Serial number: 180665 Calibration Date: 2020 Measurement method: DIN 4150-3 Settings: short ind. found. Frequency range: 1-80 Hz Trigger mode: 060s + events Measurement processing and report generation done with VM40MDB software.					
8. Measurement result						
8.1 Event chart						
Date	Time	X-axis	Y-axis	Z-Axis	Unit	Trigger event

3.2 Classification	Sensitive building. According to DIN 4150-3 standard N3 categories of buildings (sensitive buildings)
3.3 Description	Stone building
4. Location and position	
4.1 Source of vibration	
 <p>The aerial photograph shows a landscape with a road labeled 'L53' running horizontally. To the left of the road is a construction camp highlighted in yellow. To the right of the road is a red square indicating the source of vibration. A white square labeled 'Measurement Point N2' is located on a hillside above the road. A scale bar at the bottom right indicates 300 m. A legend in the top right corner identifies the symbols: a yellow square for 'Construction Camp', a white square for 'Measurement Point N2', and a red square for 'Source of Vibration'.</p>	
 <p>The photograph shows a person in a dark jacket kneeling on a floor with a red and white geometric pattern. The person is holding a device, possibly a vibration meter, and is positioned next to a black case. The room has white walls and a window in the background.</p>	
5. Environmental conditions	Closed space, smooth surface.

6. Subjective observations	The vibration of the working specifics doesn't affect on the general condition
7. Measuring chain	Triaxial Vibration Meter VM40B Serial number: 180665 Calibration Date: 2020 Measurement method: DIN 4150-3 Settings: short ind. found. Frequency range: 1-80 Hz Trigger mode: 060s + events Measurement processing and report generation done with VM40MDB software.

8. Measurement result

8.1 Event chart




Date	Time	X-axis	Y-axis	Z-axis	Unit	Trigger event
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Please See Annex N1

9. Evaluation	Construction vibration does not affect the overall condition
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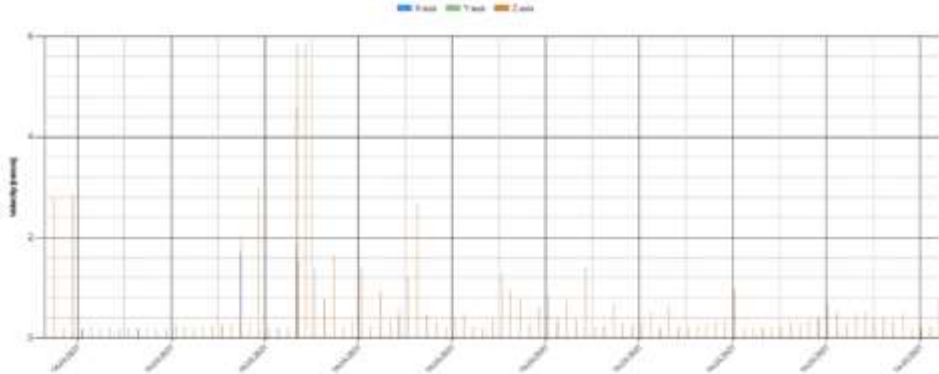
10. Signs

Signature	Archil Revazishvili 
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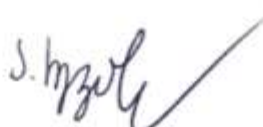
Measurement protocol N3

1. General	
1.1 Person in charge	Archil Revazishvili - Head of the Examination Lab
1.2 Measurement period	14.03.2021 12:56:29 - 14.03.2021 14:32:05

2. Kind of vibration	
2.1 Excitation	Construction work
2.2 Operating conditions	Intensive construction
3. Structure	
3.1 Name and address	Residential building in Almasiani village
3.2 Classification	Residential building. According to DIN 4150-3 standard N2 categories of buildings (Residential buildings)
3.3 Description	Building built from the concrete block
4. Location and position	
4.1 Source of vibration	
	
	
5. Environmental conditions	Closed space, smooth surface.

6. Subjective observations	The vibration of the working specifics doesn't affect on the general condition					
7. Measuring chain	Triaxial Vibration Meter VM40B Serial number: 180665 Calibration Date: 2020 Measurement method: DIN 4150-3 Settings: short ind. found. Frequency range: 1-80 Hz Trigger mode: 060s + events Measurement processing and report generation done with VM40MDB software.					
8. Measurement result						
8.1 Event chart						
						
Date	Time	X-axis	Y-axis	Z-Axis	Unit	Trigger event
14.03.2021	12:56:29	1,42	2,19	3,5	mm/s	(T)
14.03.2021	12:57:30	2,06	0,66	2,79	mm/s	(T)
14.03.2021	12:58:29	0,14	0,18	0,19	mm/s	(T)
14.03.2021	12:59:29	2,3	0,98	2,87	mm/s	(T)
14.03.2021	13:00:28	0,16	0,15	0,18	mm/s	(T)
14.03.2021	13:01:28	0,14	0,19	0,23	mm/s	(T)
14.03.2021	13:02:28	0,16	0,18	0,18	mm/s	(T)
14.03.2021	13:03:28	0,18	0,19	0,19	mm/s	(T)
14.03.2021	13:04:28	0,17	0,18	0,17	mm/s	(T)
14.03.2021	13:05:27	0,21	0,2	0,16	mm/s	(T)
14.03.2021	13:06:27	0,17	0,18	0,16	mm/s	(T)
14.03.2021	13:07:26	0,14	0,18	0,2	mm/s	(T)
14.03.2021	13:08:27	0,17	0,19	0,16	mm/s	(T)
14.03.2021	13:09:27	0,15	0,16	0,17	mm/s	(T)
14.03.2021	13:10:26	0,15	0,25	0,16	mm/s	(T)
14.03.2021	13:11:26	0,19	0,22	0,19	mm/s	(T)
14.03.2021	13:12:25	0,17	0,17	0,19	mm/s	(T)
14.03.2021	13:13:25	0,17	0,2	0,21	mm/s	(T)

14.03.2021	13:14:25	0,21	0,2	0,26	mm/s	(T)
14.03.2021	13:15:25	0,21	0,18	0,25	mm/s	(T)
14.03.2021	13:16:25	0,24	0,18	0,28	mm/s	(T)
14.03.2021	13:17:24	1,7	0,72	2,03	mm/s	(T)
14.03.2021	13:18:24	0,28	0,23	0,31	mm/s	(T)
14.03.2021	13:19:23	2,18	0,82	2,98	mm/s	(T)
14.03.2021	13:20:24	0,13	0,19	0,19	mm/s	(T)
14.03.2021	13:21:23	0,17	0,19	0,16	mm/s	(T)
14.03.2021	13:22:23	0,15	0,19	0,19	mm/s	(T)
14.03.2021	13:23:23	1,88	2,35	4,6	mm/s	(T)
14.03.2021	13:23:30	2,45	1,66	5,85	mm/s	0-A
14.03.2021	13:23:31	1,31	1,66	3,87	mm/s	A-W
14.03.2021	13:23:32	1,12	0,43	1,53	mm/s	W-0
14.03.2021	13:24:22	2,45	1,66	5,85	mm/s	(T)
14.03.2021	13:25:22	1,13	0,3	1,37	mm/s	(T)
14.03.2021	13:26:22	0,57	0,77	0,63	mm/s	(T)
14.03.2021	13:27:22	0,49	0,53	1,65	mm/s	(T)
14.03.2021	13:28:22	0,17	0,18	0,21	mm/s	(T)
14.03.2021	13:29:21	0,16	0,2	0,33	mm/s	(T)
14.03.2021	13:30:21	1,05	0,77	1,4	mm/s	(T)
14.03.2021	13:31:20	0,21	0,16	0,26	mm/s	(T)
14.03.2021	13:32:21	0,57	0,28	0,91	mm/s	(T)
14.03.2021	13:33:21	0,23	0,25	0,35	mm/s	(T)
14.03.2021	13:34:20	0,42	0,16	0,57	mm/s	(T)
14.03.2021	13:35:20	0,66	0,54	1,21	mm/s	(T)
14.03.2021	13:36:19	2,06	1,39	2,67	mm/s	(T)
14.03.2021	13:37:19	0,23	0,17	0,47	mm/s	(T)
14.03.2021	13:38:20	0,24	0,19	0,3	mm/s	(T)
14.03.2021	13:39:19	0,18	0,18	0,22	mm/s	(T)
14.03.2021	13:40:19	0,29	0,18	0,4	mm/s	(T)
14.03.2021	13:41:18	0,37	0,2	0,48	mm/s	(T)
14.03.2021	13:42:18	0,18	0,18	0,21	mm/s	(T)
14.03.2021	13:43:18	0,14	0,19	0,19	mm/s	(T)
14.03.2021	13:44:17	0,28	0,17	0,37	mm/s	(T)
14.03.2021	13:45:18	0,81	0,59	1,28	mm/s	(T)
14.03.2021	13:46:17	0,73	0,58	0,95	mm/s	(T)
14.03.2021	13:47:17	0,43	0,44	0,76	mm/s	(T)
14.03.2021	13:48:16	0,25	0,18	0,25	mm/s	(T)
14.03.2021	13:49:16	0,56	0,5	0,62	mm/s	(T)
14.03.2021	13:50:16	0,52	0,27	0,84	mm/s	(T)
14.03.2021	13:51:16	0,29	0,22	0,41	mm/s	(T)
14.03.2021	13:52:16	0,56	0,32	0,72	mm/s	(T)
14.03.2021	13:53:15	0,28	0,2	0,35	mm/s	(T)
14.03.2021	13:54:15	0,69	0,43	1,41	mm/s	(T)
14.03.2021	13:55:15	0,14	0,2	0,2	mm/s	(T)
14.03.2021	13:56:14	0,21	0,17	0,25	mm/s	(T)

14.03.2021	13:57:15	0,24	0,23	0,69	mm/s	(T)
14.03.2021	13:58:14	0,23	0,18	0,3	mm/s	(T)
14.03.2021	13:59:14	0,21	0,18	0,26	mm/s	(T)
14.03.2021	14:00:14	0,28	0,18	0,29	mm/s	(T)
14.03.2021	14:01:13	0,42	0,18	0,52	mm/s	(T)
14.03.2021	14:02:13	0,16	0,22	0,23	mm/s	(T)
14.03.2021	14:03:12	0,61	0,18	0,64	mm/s	(T)
14.03.2021	14:04:13	0,2	0,17	0,21	mm/s	(T)
14.03.2021	14:05:13	0,2	0,16	0,2	mm/s	(T)
14.03.2021	14:06:12	0,17	0,19	0,24	mm/s	(T)
14.03.2021	14:07:12	0,21	0,2	0,26	mm/s	(T)
14.03.2021	14:08:11	0,29	0,21	0,34	mm/s	(T)
14.03.2021	14:09:11	0,31	0,18	0,35	mm/s	(T)
14.03.2021	14:10:12	0,76	0,31	0,97	mm/s	(T)
14.03.2021	14:11:11	0,18	0,2	0,19	mm/s	(T)
14.03.2021	14:12:11	0,16	0,17	0,18	mm/s	(T)
14.03.2021	14:13:10	0,18	0,18	0,22	mm/s	(T)
14.03.2021	14:14:10	0,16	0,18	0,2	mm/s	(T)
14.03.2021	14:15:09	0,17	0,2	0,22	mm/s	(T)
14.03.2021	14:16:09	0,3	0,26	0,29	mm/s	(T)
14.03.2021	14:17:10	0,18	0,2	0,29	mm/s	(T)
14.03.2021	14:18:09	0,29	0,17	0,35	mm/s	(T)
14.03.2021	14:19:09	0,38	0,18	0,42	mm/s	(T)
14.03.2021	14:20:08	0,47	0,17	0,68	mm/s	(T)
14.03.2021	14:21:08	0,5	0,18	0,49	mm/s	(T)
14.03.2021	14:22:08	0,22	0,22	0,29	mm/s	(T)
14.03.2021	14:23:08	0,48	0,16	0,47	mm/s	(T)
14.03.2021	14:24:08	0,41	0,2	0,5	mm/s	(T)
14.03.2021	14:25:07	0,27	0,3	0,38	mm/s	(T)
14.03.2021	14:26:07	0,26	0,19	0,41	mm/s	(T)
14.03.2021	14:27:07	0,28	0,18	0,32	mm/s	(T)
14.03.2021	14:28:06	0,38	0,17	0,49	mm/s	(T)
14.03.2021	14:29:07	0,16	0,18	0,19	mm/s	(T)
14.03.2021	14:30:06	0,19	0,19	0,21	mm/s	(T)
14.03.2021	14:31:06	0,17	0,15	0,23	mm/s	(T)
14.03.2021	14:32:05	0,77	0,34	0,81	mm/s	END
9. Evaluation		Construction vibration does not affect the overall condition				
10. Signs						
Signature		Archil Revazishvili 				

As can be seen from the data from the three protocols, the level of vibration exposure generated by the construction at the N1 and N2 control points is much lower than the reference values specified in DIN 4150-3. And at point N3 a periodic increase of vibration level was observed. This increase, in any case, was caused by human moving around the room, as well as turning the refrigerator in the room on and off.

The highest level of vibration impact was¹:

For N1 Point:

X Axis: 14.03.2021 - 11:56:21 - 0,19 mm/s;

Y Axis: 14.03.2021 - 11:56:21 - 0,21 mm/s;

Z Axis: 14.03.2021 - 11:51:22 - 0,2 mm/s.

For N2 Point:

X Axis: 24.03.2021 - 19:44:52 - 0,35 mm/s;

Y Axis: 14.03.2021 - 17:50:46 - 0,45 mm/s;

Z Axis: 30.03.2021 - 02:42:52 - 0,35 mm/s.

For N3 Point:

X Axis: 09.02.2021 - 13:23:30 - 2,45 mm/s;

Y Axis: 09.02.2021 - 13:23:23 - 2,35 mm/s;

Z Axis: 09.02.2021 - 13:23:30 - 5,85 mm/s.

¹ First and last result of vibration is not considered.

7. Conclusion

1. Based on the 2020 december agreement signed between parties "Eco-Spectri" and "China railway tunnel group Co., Ltd. Branch in Georgia", Ltd "Eco-Spectri" conducted a study on the propagation of vibration in Kobi Village, during tunnel construction works.
2. three points were selected as vibration locations: the territory of village Kobi (600 m from the project zone); The church near the construction site (240 m from the project zone, the nearest sensitive receptor); Residential house on the territory of the village Almasiani (500 m from the project zone);
3. Vibration survey was performed in accordance with the German standard DIN 4150-3 and the standard of the International Certification Organization ISO 4866: 2010, as well as following the procedures of vibration survey developed by the company;
4. Vibration level data were collected:
 - N1 point - 14.03.2021 11:49:23 - 14.03.2021 12:10:41;
 - N2 point - 14.03.2021 15:43:18 - 02.04.2021 12:53:52;
 - N3 point - 14.03.2021 12:56:29 - 14.03.2021 14:32:05.
5. Annex N1 shows the vibration level values in 1-minute intervals for N2 point. Exceedance of the reference value of DIN 4150-3 standard was not fixed;
6. At the given stage, the construction works are accomplished with small explosions and there is no source of a permanent vibration as a result of the construction activities. The analysis of minute measurement values in N1 point shows that no cases of abrupt impulsive increase of the vibration level (as a typical, feature of the explosion-induced vibration) were fixed;
7. At point N3 a periodic increase of vibration level was observed. This increase, in any case, was caused by human moving around the room, as well as turning the refrigerator in the room on and off;
8. In N1 and N2 points the vibration data obtained as a result of construction works are significantly less than the values provided by the standard (Approximately 10 times less). The maximum level of vibration observed at both points was 0.45 mm/s.

Annex 4 Weekly Inspection Reports, Non-Conformance Reports, Corrective Action Reports

North-south corridor Kvesheti-Kobi Road Project	HSE_ NCR INVESTIGATION REPORT			Form
				Page 1/2
1. GENERAL INFORMATION				
Report N: 0006	Date of issue: 6.04.2021	Prepared by: David Kvirkvelia	NCR: NCR3	NCR: Violation of Working at Height Standard
2. PROJECT IDENTIFICATION DETAILS				
Worksite/Location	Project/Contract	Company	Client	Country
Camp, Emergency Tunnel, Batching Plant, Segment Factory, and crashing area.	Kvesheti-Kobi Lot #1	CRTG	Road Department	Georgia
3. DETAILS OF NCR/INCIDENT				
Date of Occurrence: Ongoing since 06.04.2021 (When PMCSCs conducted the Site inspection)				
Detailed NCR Description				
<p><u>Violation of working at height standard:</u></p> <p>During the inspection observed unsafe act by the contractor's employees in front of the main tunnel. The personnel was involved in the installation of the crane. Two workers were working at a height of more than 15 meters. It has been witnessed following violations:</p> <ol style="list-style-type: none"> 1. Improper Platform: <ul style="list-style-type: none"> • The platform was erected by not qualified personnel (as the contractor does not have a certified scaffolder); • The handrails are missing on the platform; • There are huge gaps on the platform. 2. Missing of adequate fall arrest equipment: <ul style="list-style-type: none"> • The harnesses must meet BS/UN standards; • The harness has to has a double lanyard with double hooks; 3. Untrained personnel: <ul style="list-style-type: none"> • Untrained and unqualified personnel were involved in working at height activity. • The person was not using lanyards while he was climbing on the crane. 				

Considering the unsafe working at height practices, the Engineer has given instructions to The Contractor to stop the working at height activities until the contractor has taken the appropriate measures accordingly.

This situation is a serious breach in terms of Health and Safety and there is a high possibility to increase the risk of falls and fatality cases. Although the Engineer has warned and given instruction to The Contractor to prevent such type of violation, the Contractor simply ignored all recommendations related to this case.

Work Process at The Time of The NCR	Installation of the Crane.
Work Area Where The NCR Occurred	Main tunnel.


Immediate Actions (TimeLine Description)

The Site supervisors and The Contractor’s HSE representatives were instructed several times to take all necessary precautionary measures immediately.



CAR (Corrective Action Required)

- The contractor is hereby requested to immediately rectify his failure and to provide the following:
- Working at height training should be conducted all workers who will be involved in working at height activity;
 - Only certified personnel should be involved in the mentioned activity;
 - The Contractor has to purchase proper scaffold according to BS/EN standard;
 - Certified and qualified scaffolder should be mobilized on the Site;
 - Scaffoldings, platforms must be erected/dismantled by a certified scaffolder;
 - Before hiring a scaffolder his/her CV and Certificate should be submitted to Engineers for approval officially;
 - The Contractor has to equip its personnel with proper (double hook lanyard) harnesses (BS/EN)

The Contractor shall note that unless they have accomplished to comply with the above-mentioned points and close out this NCR, the relevant working activities at the height which are in the scope of the “Project Construction Works” cannot resume.

Verification by HSE		Date: 6.04.2021
Approved by Team Leader		Date: 6.04.2021

See Photos Below

Verification by Environmental Expert		Date: 6.04.2021
Approved by Team Leader		Date: 6.04.2021

Pictures



Groundwater from the emergency tunnel (near tunnel portal approximate coordinates X459372 Y4711527)



Groundwater collection pipe (near tunnel portal approximate coordinates X459372 Y4711527)


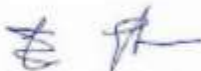


Damaged water collection pipe (approximate coordinates X459376 Y4711592)



No drainages system on segment plant and batching plant area, the territory is flooded





North-south corridor Kvesheti - Kobi Road Project	HSE NCR INVESTIGATION REPORT			Form
				Page 1/2
1. GENERAL INFORMATION				
Report N: 0004	Date of issue: 12.03.2021	Prepared by: Nikoloz Sopadze	NCR: NCR4	NCR: Improper refueling process, no drip trays and spill kits
2. PROJECT IDENTIFICATION DETAILS				
Worksite/Location	Project/Contract	Company	Client	Country
Camp site, batching plant and crashing plant areas in Kobi	Kvesheti - Kobi Lot #1	CRTG	Road Department	Georgia
3. DETAILS OF NCR/INCIDENT				
Date of Occurrence: Ongoing since 12.03.2021 (When engineers conducted Site inspection)				
Detailed NCR Description				
Refueling process is ongoing without any precautions no spill kits and no drip trays on the Site.				
WORK PROCESS AT THE TIME OF THE NCR	General Construction Works			
WORK AREA WHERE THE NCR ACCURED	Camp site, batching plant and crashing plant areas in Kobi			
Immediate Actions (Time Line Description)				
No immediate actions were taken on the Site				
CAR (Corrective Action Required)				
The Contractor is hereby requested to immediately (within 7 Calendar days) to rectify his failure. The Contractor shall arrange proper refueling place and the Contractor should submit refueling management plan and should provide spill kits on the Site. It is necessary to provide drip trays under all oil contain facilities. Refueling service must be performed by the trained employee.				
Verification by Environmental Expert				Date: 12.03.2021
Approved by Team Leader				Date:12.03.2021

Pictures

Corrective action Taken By CC in Response to HSE Inspection Report

NCR Close Out Report

	<h2>NCR Close Out Report</h2>	 <small>ULUSLARARASI BİRLİKTEKİ MÜŞAVİRLİK HİZMETLERİ A.Ş.</small>
NCR. Number: 0006		
Issue Date: 09/04/2021 Corrective Action Date: 23/05/2021 Close out Date: 05/07/2021 Identity of the NCR; <input checked="" type="checkbox"/> Health <input checked="" type="checkbox"/> Safety <input type="checkbox"/> Environmental <input type="checkbox"/> Social Correspondence: Attachment #1: 2021-04-UBM-CRTG-361 Violation of Working at Height Attachment #2: Response to NCR 210523- 0141- CRTG- UBM-Corrective Action Report		
Subject/Title of the NCR: Non-Compliance with the Instructions of ER		
CORRECTIVE ACTION / TREATMENT OF THE NON – CONFORMITY: Immediate actions: 1) The violation of working at height activity is stopped immediately 2) The administration action is taken to against the violator 3) The safety harness is worn at all time during working at height 4) Highlight it in Tool Box Talking Follow Up Action: 1) The certificated elevating platform has been brought and transported to site. 2) The certificated safety harness is purchased and safety harness is used for working at height 3) The OSHE Georgia company has conducted safety training to workers, who will work at height. 4) Internal safety training is conducted for all of employees weekly 5) The unsafe and uncertificated platform has been dismantled immediately. <i>(See Photos below)</i> PREVENTIVE ACTION TO PREVENT RECURRENCES: 1) To conduct daily Tool Box Talking to site personnel; 2) Safety officer is mobilized at all time to supervise the activity		
NCR Close Out by:		
Name / Surname David Kvirvelia	Position Health And Safety Specialist	Signature:



NCR Close Out Report



Attachment #1 (2021-04-UBM-CRTG-361 Violation of Working at Height)

Detailed NCR Description

Violation of working at height standard:

During the inspection observed unsafe act by the contractor's employees in front of the main tunnel. The personnel was involved in the installation of the crane. Two workers were working at a height of more than 15 meters. It has been witnessed following violations:

1. Improper Platform:
 - The platform was erected by not qualified personnel (as the contractor does not have a certified scaffolder);
 - The handrails are missing on the platform;
 - There are huge gaps on the platform.
2. Missing of adequate fall arrest equipment:
 - The harnesses must meet BS/UN standards;
 - The harness has to has a double lanyard with double hooks;
3. Untrained personnel:
 - Untrained and unqualified personnel were involved in working at height activity.
 - The person was not using lanyards while he was climbing on the crane.

Considering the unsafe working at height practices, the Engineer has given instructions to The Contractor to stop the working at height activities until the contractor has taken the appropriate measures accordingly.



NCR Close Out Report



Attachment #2 (Replay to NCR 2021-04-UBM-CRTG-361 Violation of Working at Height with the instruction of UBM)

Contract No. KKR/CW/CP-01R: For Construction of Kvesheti- Kobi Road (Tunnel Section) under North-South Corridor (Kvesheti-Kobi) Road Project

Subject: Corrective Action Report:0006

Engineer Letter: 2021-04-UBM-CRTG-361 Dated:09,04,2021

Dear Sir,

Based on NCR.0006 and follow your instructions, the violation of working at height is stopped immediately in kobi before the corrective actions are implemented on site.

the appropriate follow up actions are taken, for example: proper platform, certificated and proper safety harness, and certificated workers, hereby we submit CRTG-KKRP-CAR-0006 (Corrective Action Report) for your approval.

Your prompt attention to this matter will be highly appreciated.

Sincerely yours,

For and On Behalf of

CHINA RAILWAY TUNNEL GROUP CO., LTD. BRANCH IN GEORGIA

CEN DAORYONG
Project Manager



Enclosed with 1 annex, 9 pages in total:
Annex 1: CRTG-KKRP-CAR-0006

Annex 5: HSE Log book

LOT 1

ACCIDENTS, INCIDENT, NEAR MISS, FIRST AID, LTI -log book	
DATE	INCIDENT (short description)
26-06-2021	Incident occurred on 26 th of June 2021 year at Kobi construction site, approximately at 13:00 pm, while assembling the head of TBM, somehow employee's left leg slipped and fell down from a height of about 1.5 meters. The cause of the incident was the negligence of the employee and violation of safe working at heights procedure.
ACCIDENT (short description)	
NEAR MISSES (short description)	
19-05-2021	Observed unprotected electrical cable under TBM 's crane. while excavator is working under the crane electrical cable can be easily damaged and operator can get electric shock.
20-05-2021	While loading TBM part to dump track, cargo where loaded a little beat faster and without using of rope for driving, what was the reason of incorrect loading and dump truck shaking.
03-06-2021	The worker is planning to shift the mould of concrete segment, and there are four hooks in mould, but the workers take short cut and just use sling to tighten two hooks to shift the mould, which cause mould lost balance during lifting.
16-06-2021	Observed workers assembling TBM without safety buddy harnesses
16-06-2021	Observed fallen speed limit road sign 10
29-06-2021	Working on site without using PPE

27-06-2021	Driving dump truck improperly
27-06-2021	Worker fails to wear PPE on site
	LTI (LOST TIME INJURY) (short description)
26-06-2021	Incident occurred on 26 th of June 2021 year at Kobi construction site , approximately at 13:00 pm , while assembling the head of TBM , somehow employe's left leg slipped and fell down from a height of about 1.5 meters. The cause of the incident was the negligence of the employe and violation of safe working at heights procedure.
	FIRS AID
20-05-2021	The worker's left-hand finger is cut by shape objected, which causes small wound
17-06-2021	The worker slip down, which causes the mini injury to body.

LOT2

ACCIDENTS, INCIDENT, NEAR MISS, FIRST AID, LTI -log book	
DATE	INCIDENT (short description)
ACCIDENT (short description)	
NEAR MISSES (short description)	
07.06.2021	Fire was in the kitchen about 12:30 PM, the cylinder was placed in kitchen and was not equipped with flashback arrestor. The fire was extinguished. Nobody injured.
10.06.2021	Ambulance observed without fuel, fuel was not enough to get to the hospital.

	LTl (LOST TIME INJURY) (short description)
19.06.2021	The worker (name: Liao Zhongming, age:43) was cut by the color steel tile around his knee area in Batching Plant No.1. The wound is 3cm in the length and 3mm in the depth.
	FIRS AID

Annex 6: Grievance Redress Mechanism Complaint Logs

Level 1 – Complaints log of Grievance Redress Committee

#	Form (verbal or written)	Recipient	Date Received	Name & contact of Complainant	Complaint Category	Complaint Description	Resolution Description	Resolution Date	Status
1	Written	Construction Contractor	11.04.20	Givi Chkareuli TEL 577076293	Damage to Infrastructure / Assets	Mr. Chkareuli complains that Contractor damage part of fence of niche and a steel plate table by loader nearby the existing highway.	On Apr. 12, with the help of RD and Kazbegi municipality, Contractor and Mr. Chkareuli reach an oral protocol to repair the fence and table. Contractor immediately fabricated a new steel table with a roof, and installed them to the location directed by him. Owing to the restriction of the Emergency status of Georgia, Contractor can't buy relevant materials promptly. The whole fence was reconstructed by Contractor until May 3.	03.05.20	Closed
2	Written	GRM (ADB)/RD	29.10.20	Natela Shavlashvili ID16001022183 Suliko Burduli ID16001011187	Restriction or loss of access	She is stating that access to her land plot will be restricted due to Project works.	The Project considers acquisition of part of his land plot. During inspection on 3.11.20 it was assumed that construction of access to the remaining portion of the land plot is possible. Detailed design is to be prepared. That section is not handed over for construction activities yet.		Open

3	Written	GRM (ADB)/RD	03.11.20	Spartak Mirokashvili ID N01001012595 TEL 551008002	Restriction or loss of access	He is stating that access to his land plot will be restricted due to Project works.	During inspection on 3.11.20 it was identified that the land plot has access road and it will not be impacted by the Project road. However, the access road to the land plot is part of the access road to the Project Site and therefore, it will be used by the Contractor's equipment. Letter was dispatched to the Contractor reminding his obligations to keep access roads in good condition.		Open
4	Written	GRM (ADB)/RD	30.12.20	Kakhi Bukuri ID: 01001007707	Restriction or loss of access	30.12.2020 - Part of his land plot is to be acquired by the Project. The remaining portion of the land plot with c/c 71.62.54.552 is left without access road. 21.04.2021 - He filed claim for restriction of access to his other two land plots with c/c 71.62.61.399 and c/c 71.62.54.873.	Access road is under consideration by the Engineer. Plan of access road was provided to the Employer on 23.03.2021. After getting Employer's instruction the Engineer shall assign the Contractor to prepare detailed design. 26.03.2021 - Employer instructed the Engineer to provide detailed design for access road to land plot with c/c 71.62.54.552. 08.04.2021 - Letter was dispatched to the Contractor instructing to provide BoQ and detailed design.		Open
5	Written	GRM (ADB)/RD	30.12.20	Darejan Zakaidze ID16001000598 TEL 599265834	Restriction or loss of access	She is stating that access to his land plot will be restricted due to Project works.	Plan of access road is under consideration of the Engineer's team. 19.04.21 - Plan of access road was sent to RD. 22.04.21 - RD requested detailed design and BoQ.		Open

6	Written	GRM (ADB)/RD	30.12.20	Venera Zakaidze ID:01024048149 TEL 568339963	Restriction or loss of access	She is stating that access to his land plot will be restricted due to Project works.	Plan of access road is under consideration of the Engineer's team. 19.04.21 - Plan of access road was sent to RD. 22.04.21 - RD requested detailed design and BoQ.	Open
7	Written	GRM (ADB)/RD	26.01.21	Ivane Zaqaizde ID: 16001014602	Other	His residential house is affected by the Project. He does not want relocation and requests to implement construction activities so as not to affect his house	The Engineer reported that there is serious threat that the house will be negatively impacted during implementation of construction activities. The Engineer proposes the Employer to assess the property and temporary relocate the family during construction works. After completion of the works the structural conditions of the house should be assessed by Independent Expert and in case it will be proved that the house is in structurally sound condition, the family can return home. During implementation of the works the Engineer shall instruct the Contractor to carry out permanent monitoring of the impact of construction activities on the house, such as: inventory of existing crack and further monitoring, monitoring of benchmarks installed on structural elements of the house and on slope, vibration monitoring. Considering the technical condition, if possible measures for mitigation negative impact will also be implemented. 02.03.21- The Employer requested details on how long will	Open

							it be required to temporary resettle the family. 26.03.21 - The Engineer listed all the on-going works adjacent to the property. As Tskere section is not handed over yet it is hard to estimate the commencement of the works there.		
8	Written	GRM (ADB)/RD	28.01.21	Anzor Burduli ID: 01025004214	Restriction or loss of access	Part of his land plot is to be acquired by the Project. The remaining portion of the land plot is left without access road.	Access road is under consideration by the Engineer. Plan of access road was provided to the Employer on 23.03.2021. After getting Employer's instruction the Engineer shall assign the Contracto to prepare detailed design.		Open
9	Written	GRM (ADB)/RD	12.02.21	Vazha Seturidze	Damage to Infrastructure / Assets	He is stating that fence of his residential land plot was damaged due to movement of the Contractor's heavy equipment.	The site check was conducted by the Engineer, the Contractor and AP. Currently works cannot be implemented due to snow and frozen ground. The Contractor arranged new fence.	10.05.21	Closed
10	Written	GRM (ADB)/RD	15.02.21	Zurab Burduli ID 16001011131	Damage to Infrastructure / Assets	He is concerned that construction activities may impact the stability of the house and damage the residential property.	The Contractor hired LELP Levan Samkharauli Expertise Bureau to make assessment of the condition of the house. Conclusion was provided on 30.03.2020. Before commencement of the works the Contractor shall make detailed inventory of the cracks and proceed with monitoring.		Tech.hold

11	Written	GRM (ADB)/RD	15.02.21	Davit Burduli (ID 01010017079) Zurab Burduli (ID01024015848) Konstantine Burduli (ID 01010017793) Jaba Burduli (ID 01024044998) TEL 555399899	Damage to Infrastructure / Assets	He is concerned that construction activities may impact the stability of the house and damage the residential property.	The Contractor hired LELP Levan Samkharauli Expertise Bureau to make assessment of the condition of the house. Conclusion was provided on 30.03.2020. Before commencement of the works the Contractor shall make detailed inventory of the cracks and proceed with monitoring.		Tech.hold
12	Written	GRM (ADB)/RD	12.03.21	Giorgi Karchaidze ID 01019014240	Restriction or loss of access	After acquisition his remaining portion of land plot is divided into three parts by the Project. He states that three of the land plots with c/c 71.62.47.615, c/c 71.62.47.616 and c/c 71.62.47.617 will be left without access.	After inspection the Engineer assumed that access road to two of the land plots (c/c 71.62.47.615 and 71.62.47.617) owned by citizen Giorgi Karchaidze can be arranged. As for land plot with c/c 71.62.47.616 it borders cut and cover section of entrance portal of tunnel No. 1. Access road to this land plot can be arranged after completion of tunnel works and backfilling. Letter was dispatched to the Employer on 17.04.2021. 21.04.21 - Employer requested BoQ and detailed design.		Open
13	Written	GRM (ADB)/RD	26.03.21	Zurab Burduli ID 16001011131	Restriction or loss of access	26.03.21 - He complains the Project road is restricting access to the land plot with c/c 71.62.54.601. 05.04.21 - He complained about restriction of access to the land plots with c/c	26.04.21 - Employer was informed that construction of access road to both land plots was not possible.		Open

						71.62.61.370 and c/c 71.62.61.310		
14	Written	UBM KK	14.04.21	Collective Statement of the Drivers employed by Lot 2 Contractor represented by Tornike Tatarashvili TEL 599 858789	Recruitment / Employment	<p>The drivers at Lot 2 want the same salary the drivers have at Lot 1 section. As they state the salary is 55 GEL at Lot 1 section, while their salary is 40 GEL.</p> <p>5 May 2021 Drivers organized demonstration.</p> <p>After that the Contractor raised their salaries. However, the following non-compliances were also revealed:</p> <ol style="list-style-type: none"> 1. The drivers request employment agreements. As they state they have 10 hours working days for 6 days per week and they do not receive compensation for overtime. 2. The drivers have 	<p>Letter was dispatched to the Contractor on 27.04.21.</p> <p>05.06.21 - Demonstration was organized by the drivers</p> <p>The Contractor agreed to raise their salaries up to 44 GEL. In addition after working 26 days per month they will receive 4 day salary as a bonus.</p> <p>Person for communication was assigned. Overtimes are calculated. Equipping the drivers with PPE is remaining.</p>	Open

					<p>communication problem with Chinese management staff. They state that the Contractor is not informing them in advance about the non-working days. Sometimes they go to work and only after that they are finding out that they are not working on that day and sometimes they are waiting for the call of the Chinese manager for hours. They want the Contractor to inform them about non-working days in advance at least one day before.</p> <p>3. The drivers and other workers do not have personal protective equipment and work uniforms. They do not have room to change clothes, rest or take lunch. There</p>		
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						are no portable toilets and hand wash facilities at the Site as well.		
15	Written	UBM KK	22.04.21	Elguja Burduli TEL 579 131213	Damage to Infrastructure / Assets	<p>His land plot is bordering the Campsite No. 1. He states that the Contractor's activities damaged his fence, 4 apple, 8 walnut and several plum trees. Furthermore, the land plot is unviable due to water runoff from the Campsite.</p>	<p>The fact was confirmed by the Engineer. Letter was dispatched to the Contractor on 27.04.21. The Contractor invited expertise bureau to assess the damage. On 22.05.21 - Experts visited the Site and issued conclusion according to which the damage was assess to be 1300 GEL. The Complainant was not attending the process. On 01.06.21 - the Contractor met the Complainant and introduced conclusion of the expert. In addition the Contractor offered to pay 700 GEL. However, the Complainant refused to accept the expertise conclusion and requested 15 000 GEL. The Contractor again approached to another expertise bureau "Samkharauli" and had a joint survey/investigation of concerned area together with the claimant and his sons.</p>	Open
16	Written	GRM (ADB)/RD	22.04.21	Tamaz Burduli ID 16001000063)	Restriction or loss of access	He states that land plot with c/c 71.62.61.444 is left without access.	31.05.21 - Letter was dispatched to the Contractor requesting to provide detailed design and BoQ.	Open

17	Written	GRM (ADB)/RD	26.04.21	Mariam Zaqaidze ID: 01003019827 represented by Inga Tskhvedadze ID: N01001024811	Restriction or loss of access	She states that after acquisition remaining portion of the land plot with c/c 71.62.59.396 is left without access.	26.05.21 - Letter was dispatched to the Contractor requesting to provide detailed design and BoQ.		Open
18	Written	UBM KK	05.05.21	Collective statement of the Contractor's worker's represented by Shota Batsikadze	Recruitment / Employment	The worker's request: 1. proper canteen and space where they can spend lunch break. 2. proper PPE as the PPE the Contractor hand over is easily torn. 3. transportation to the worksite 4. review of work shifts.	The Contractor has already ordered new supply of PPE which is of better quality. Until arrival of new supply set of PPE will be replaced upon request. Furthermore, the Contractor started to set up canteen and kitchen for local workers. As for work shifts, they are in compliance with local legislation. The transportation issue is still under consideration of the Contractor's management		Open
19	Verbal	Construction Contractor	08.05.21	Gocha Lagvilava	Disturbance: Noise / Vibration / Dust	He is stating that the Contractor is starting works too early at 08:00 a.m. It is disturbing his old monther.	Construction of culvert is on-going at the adjacent territory. It was decided to commence the works at 9:00 a.m. and it was agreed with the Employer.	11.05.21	Closed
20	Verbal	Construction Contractor	08.05.21	Gocha Zaqaidze	Damage to Infrastructure / Assets	Water tank was built in his private property.	After field survey it was confirmed that water tank for supply of water to Campsite No. 2 was built in his property. Water tank occupied 100 sq.m. It was decided to rent the	09.06.21	Closed

							property and pay 7 GEL per square meter.		
21	Verbal	Construction Contractor	11.05.21	Tamar Meliqidze TEL: 577308511	Damage to Infrastructure / Assets	Fence to her land plot was damaged due to the Contractor's activities.	The material of fence was agreed with the Complainant. Construction is on-going.	17.06.21	Closed
22	Written	GRM (ADB)/RD	27.05.21	Giorgi Zakaidze ID: 16001026564	Restriction or loss of access	He states that Project road will restrict access to his remaining portion of land plot with c/c 71.62.59.459.	As per Engineer's assessment the Complainant will not have access to the land plot during construction activities as the land plot borders cut and cover section of the tunnel. After completing tunnel works the land plot will be accessible from local road arranged for the village. Letter was dispatched to the Employer.		Open
23	Verbal	Construction Contractor	01.06.21	Collective complaint from villages of Zaqatkari represented by Beso Zaqaidze TEL: 597979179	Damage to Infrastructure / Assets	Beso Zaqaidze verbally communicated that the Contractor has violated footprint of Campsite No. 2 and occupied private land plots by constructing access road.	The Contractor has sent survey team. The access road No. 3 and campsite was constructed in October-November 2020. From registry documents it is visible that land plots were registered in February-March 2021. Currently identifying the areas occupied by access road No. 3 and campsite is on-going.		Open

24	Written	GRM (ADB)/RD	04.06.21	Mikheil Rostiashvili ID: 16001003760	Restriction or loss of access	He states that the Project road will restrict to his land plot with c/c 71.62.53.575.	The land plot borders bridge N5. As per Engineer's assessment the access to the land plot may be restricted during construction activities (piling works). After completing bridge works the land plot will be accessible. Letter was dispatched to the Employer.		Open
25	Written	GRM (ADB)/RD	24.06.21	Mikheil Buchukuri ID: 01003010555	Restriction or loss of access	He states that the Project road will restrict to his land plot with c/c 71.62.61.442.	The land plot borders section km0 of the Project road. As per Engineer's assessment construction of access to the land plot is impossible.		Open

Level 2 – Complaints log of Grievance Redress Commission (Level 2)

#	Form (verbal or written)	Recipient	Date Received	Name & contact of Complainant	Complaint Category	Complaint Description	Resolution Description	Resolution Date	Status
1	Written	RD	09.04.19	Khatuna Zakaidze T: 599 26 58 34	Other	On 04.09.2019 Letter. Mrs. Zakaidze requests to convey the Appraisal document of the land. On 28.05.2020 Letter. Mrs. Zakaidze is unsatisfied with compensation rate. She says that appraisal of the land value has conducted in 2019 and after that, for now (2020) The exchange rate of the GEL against the dollar has fallen.	08.10.2019 Response Letter from RD to Mrs. Zakaidze was sent. Appraisal Document of the land was dispatched to Mrs. Zakaidze.	08.10.19	Closed
2	Verbal	Social Media	01.08.19	Organization- "Protect The Khada Valley"	Other	after The August 2019 the organization - "Protect Khada Valley" has been starting active protest movement against the Kvesheti-Kobi Project in the social media. In their internet posts, they cite a variety of reasons that could negatively affect for the Khada valley. (Such as: negative impact on nature, viability, living conditions and etc).	RD made a response statement about this issue in the media.		Open

3	Written	RD	21.08.19	Madona Bibilashvili ID:01024049983 T: 599 377 212	Compensation Rate	<p>On 21.08.2019 Letter. The citizen complains that her second land plot (1420 sq.m.) has been missed from the resettlement buffer and also she is unstified with the compensation rate. She demanding her rest part to be included in ressetelment buffer and compensation rate be raised. 11.06.2020 Letter. Citizen has same demand and also requesting to be provided assesement document for her. On 11.12.2020 Letter. The Citizen says that in her assesement document have been missed some types of materials, as she demand re-appraisal.</p>	<p>On 03.10.2019 The letter was dispatched to the "IDOM Cunsulting, Engeneering, Architecture, SAU' and "LTD Gama-Consulting" for further review with CC to the Complainant". On 17.06.2020. RD's response letter to the Citizen. RD explain in it's letter that the plot which was mentioned in the letter is included in the resettlement buffer, as for the change of compensation rate, we are waiting for the response from the design company. On 11.2020 Rd has received new evaluation plan from Gama and has been sent to the Citizen. The Rd is waiting for the final decesion from the citizen regarding signing the contract. On 21.12.2020 The RD instructed to "IDOM"and "Gama" to re-check data of assesement plan on the spot and if necessary, correct it. On 19.03.2021 The contract has been signed. (compansation amount has been raised after re-appraisal).</p>	19.03.21	Closed
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4	Written	RD	05.09.19	Zurab Tsiklauri ID: 01017017291 T:577 52 57 35	Compensation Rate	<p>05.09.2019 Mr. Tsiklauri is unstified with compansation rate and also says that after partialy redeem his property will be unusable for living conditions because near his area is planning to built Road Retaining wall. He demanding his issue to be studied better. 10.03.2020 Letter. Mr. Tsiklauri complains again about compansation rate and is unstified with the response of RD. he demanding again the issue to be studied better and doesnot agree with suggested conditions by RD. also The citizen submitted an environmental impact assessment prepared by Connex Ltd. According to which, the impact on the environment in the mentioned area exceeds the permissible norms. 06.10.2020 Letter. Citizen is again unstified and doesn't agree with provided Positions by RD, Design company and Appraiser. he demands to study his case better, otherwise he intends to continue the dispute.</p>	<p>11.11.2019 The letter was dispatched to the "IDOM Cunsulting, Engeneering, Architecture, SAU' and "LTD Gama-Consulting" for further review with CC to the Complainant". 19.02.2020 RD Letter to the complainant. RD explain in it's letter that Compensation is calculated the relevant methodology by the licensed evaluator company which is guided by the market price in this area. Also, in order to not deteriorate the living conditions of the population there, the project envisages arrangement of appropriate alternative ways to access the plots. On 27.03.2020 The letter and environmental assessment was dispatched to the IDOM Cunsulting, Engeneering, Architecture, SAU' and "LTD Gama-Consulting" for further review. On 24.08.2020 The Design Company "Gama" submitted an explanatory letter about the Environmental Impact Report sent by Citizen</p>	16.04.21	Closed
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Zurab Tsiklauri (prepared by Connex Ltd.) stating that the report is based on an incompetent methodology and does not include the correct methodology for environmental impact assessment. 20.08.2020. The IDOM Consulting presented the appraiser Mr. Mindia Tabagua's response on the letter of Mr. Tsiklauri. The appraiser notes that Mr. Ziklauri had specific questions in the first letter, to which he provided competent and comprehensive answers. And in the subsequent letter there was talk about only dissatisfaction with the price while the specific question regarding the assessment was not therefore the appraiser is deprived of the opportunity to give any additional answers. By 18.09.2020 letter RD sent Gama's 24.08 and Appraiser's 20.08 explanatory letters to the Complainant. On 20.12.2020 RD's Warning letter to the citizen. RD asked to

							<p>Citizen to provide his final decision consent or refusal regarding redemption in 5 days, otherwise The RD will start expropriation procedures. On 29.01.2021 The meeting was held with AP and negotiated that AP will apply for ownership right recognition for an unregistered plot adjacent to the one that is registered on his name. recognition process is underway. On 16.04.2021 The contract has been signed and the remaining land was purchased. citizen voluntarily withdrew his application from the Recognition Commission as he could not provide the required documents. According to the contract He will receive compensation for plants on the unregistered land. The issue is closed by 16.04.2021 condition.</p>		
5	Written	RD	09.09.19	Giorgi Kharchaidze ID: 01019014240 T: 557 50 70 70	Compensation Rate	<p>On 09.09.2019 Letter. Mr. Kharchaidze is unsatisfied with compensation rate. also he wants that his land plot has to be reimbursed totally because the rest part of the land will be</p>	<p>On 02.10.2019 Letter was dispatched From RD To „IDOM Consulting, Engineering, Architecture, SAU” and LTD Gama-Consulting for further (detail) review</p>	25.10.20	Closed

						Useless. 15.05.2020 Letter. The citizen requesting redemption of his second land plot because he will not have access on it. On 14.09.2020 Letter. The citizen again demands to be redeemed his second land plot fully as it will be unusable for him future.	with CC to the complainant. 30.03. 2020 The contract was signed, the property has been redeemed. 10.08.2020 RD's Response letter to Complainant. RD Explained in its letter that the Owner has access to his plot now and will have it in the future as well, Therefore the second plot is not subject to redemption. On 08.10.2020 RD's Response letter to the citizen. The issue will be considered on the Commission. On 25.10.2020 The comission refused to purchase second plot.		
6	Written	RD	09.09.19	Kakhi Bukuri ID: 01001007707 T: 557 48 83 23	Restriction or loss of access	Mr. Bukuri complains that after construction road he will not have access road to his house and he demand extra compensation in order to ensure the arrangement works of the internal road. On 13.04.2021 Letter. The Citizen states that, after completion of the project he will not have access to his land plot (which is out of the Resettlement buffer) and it will be unusable for him. as he again demand	On 07.11.2019 Leter was dispatched (with internal letter) to Design Service of RD for further detail review. Complaint is under internal review. As soon as decision is made, response letter will be send to the complainant. On 22.04.2021 The Letter was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S" for		Open

						that his land plot to be redeemed.	further review and provide position. On 28.05.2021 UBM's Letter to RD. Supervisor noted that Engineer instructs the contractor to provide plan, detailed design and Boq of access road within 2 weeks.		
7	Written	RD	11.09.19	Giorgi Bukrui ID: 01003014051 T: 599 32 32 04	Compensation Rate	Mr. Bukuri complains that his residential house is very close to the road and will have negative impact in point of view air damages and noisy. also construction works may cause serious damages to his house. He demand to increase the compensation rate in order to be able to buy new alternative land for his family. He also complains that the second land plot (cadastral code: 71.62.544545) which belongs him after the road constructions may will not have access to the road and in this case he demand compensation.	On 14.08.2019 Letter was sent from RD to Mr. Bukuri. Department sent the offer letter to Mr. Bukuri. On 07.11.2019 Letter was dispatched from RD to „IDOM Consulting, Engineering, Architecture, SAU” and LTD Gama-Consulting for further (detail) review. 15.07.2020 The agreement was reached and contract has been signed.	15.07.20	Closed

8	Written	Government	13.09.19	Valerian Zakaidze ID: 16001032238	Compensation Rate	Mr. Zakaidze is unsatisfied with compensation rate. On 10.09.2019 Letter from Mr.Zakaidze to Administration of Government of Georgia. Mr. Zakaidze's complaint letter (with nature of other citizens of Kvesheti). On 13.09.2019 Letter was forwarded by the Administration of Government of Georgia to MRDI.	Process is ongoing. The negotiations are under the process regarding the compensations rates. The compensations rate has changed in 2020 and the cost of the land in this region has raised.	15.02.20	Closed
9	Written	RD	16.09.19	Nodar Burduli T: 599 11 58 86	Inclusion in LARP	Mr. Burduli is requesting full inclusion in LARP. He wants his land plot to be reimbursed fully because remaining land plot (30% of 100%) will be useless for him.	On 07.11.2019 Letter was Dispatched From RD to "IDOM Consulting, Engeneering, Architecture, SAU" and "LTD Gama-Consalting" for further review, with CC to the complainant. On 27.10.2020 The agreement was reached with the complainant on the partially redemption. The Contract has been signed.	27.10.20	Closed

10	Written	RD	17.09.19	zurab burduli ID: 01024015848 T: 577 300 193	Inclusion in LARP	<p>On 08.08.2019 Mr. Burduli complains that his residential house is located near to the Road of the project and road construction works may cause serious damages to his old house. On 04.09.2019 answer from Mr. Burduli. after the partial purchase of land(34 square meters), the damaged house will be very close (7-10 meters) from the road. he requesting the residential land should be fully redeemed (854 meters) and not partially(34 meters).</p>	<p>The process is ongoing. On 02.09.2019 Response letter was sent from RD to Mr. Burduli. On a given section of road construction work underway Within the minimum impact (on 34 square meters of 854 meters) . that it is impossible to identify impact on his house before construction works begins near his area. In case of Worsening living conditions in process of construction work RD will discuss this issue again. On 02.10.2019 Letter From RD to Mr. Burduli. On a given section of road construction work underway Within the minimum impact (on 34 square meters of 854 meters). The width of the projected road is identical to that of the existing road, thus the distance from the closest point of the house to the road edge is unchanged-15 meter. In order to Ensure the safety of local residents and promote better living conditions, the project additionally provides to arrange the</p>	30.06.20	Closed
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							access road. also Road Construction Contractor Supervising Company will carry out constant monitoring and in case of impacts on the buildings, The Roads Department of Georgia will return to discuss this issue again. On 30.06.2020 The Agreement was reached with the citizen on the partially redemption. The Contract has been signed.		
11	Written	RD	18.10.19	Giorgi Bukuri ID:16001021790 T: 577 55 22 93	Compensation Rate	On 18.10.2019 Letter. Mr. Bukuri is unsatisfied with compensation rate. His building (which is located on the ransom land) working as restaurant and it's only one income for his family. He daminding new appraisal in which his buliding to be valued as Bussines.	On 07.11.2019 Letter was dipatched from RD to „IDOM Cunsulting, Engeneering, Architecture, SAU” and LTD Gama-Consalting for further (detail) review with CC to the complainant. 15.07.2020 The agreement was reached and The contract has been signed.	15.07.20	Closed

12	Written	RD	05.12.19	Natela Shalvashvili ID:16001022183 Nino Burduli	Inclusion in LARP	<p>On 05.12.2019 Letter. Mrs. Shavlashvili saying that land plot which belong her (total area 1364 sq.m.) thought to be fully redeemed and thats why she was agree to sell her land after hearing that only 642 sq.m should be redeemed, says that the remaining land will be unusable for her and demands full inclusion in Larp. On 30.03.2021 Letter. Citizen complains that her family has trade booth which will be left without direct access according to new road project and her family will no longer be able to continue the business. On 25.08.2021 letter. Alexandre Burduli (Mrs. Shavlashvili's son) complains that after partially redemption of the land plot it will be unusable for them and demand full rdedemption.</p>	<p>On 09.12.2019 The letter was dispatched to the "IDOM Cunsulting, Engeneering, Architecture, SAU' and "LTD Gama-Consulting" for further review with CC to the Complainant. On 20.06.2020 IDOM's Letter to RD. IDOM notes that the citizen's land is only partially in the redemption zone and the rest part is usable for agricultural activities and also it will be provided by access. On 26.05.2021 UBM's Letter to RD. The supervisor notes that the design of Lot2 section of KK Road considers construction of access road to the land plot owned by Natela Shavlashvili. On 30.06.2021 The contract has been signed on first land plot and RD has initiated expropriation procedures for the second one as the citizen refused to sign a contract on a partially redemption. On 17.09.2021 RD's response letter to Citizen. RD notes in its letter that: Whereas the citizen and the</p>	17.09.21	Closed
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							representatives of the department During more than one meeting, no agreement was reached on the voluntary redemption of the 642 sq.m (Area affected by the project) RD has initiated Expropriation procedures on the mentioned land plot. In addition, the outside of the buffer is 722 sq.m. and the area and the configuration of the land allow it to be used as intended. Also, it will be provided with access road.		
13	Written	RD	14.05.20	Marta Mezvrishvili ID: 16001025474	Inclusion in LARP	On 14.05.2020 Letter. The citizen complains that after redemption of her plot, rest part (1/4) will be useless for her. She demanding full Redemption.	this case continues as N96 Complaint. On 23.10.2020 The Commission has decided to redeem the plot fully. The Contract has been signed.	23.10.20	Closed
14	Written	RD	10.06.20	Shorena Murghuevi	Inclusion in LARP	On 10.06.2020 letter. The citizen says that as far as she is aware, for neccesity of the project, RD planing to purchase part of her land, she demands that her plot be fully redeemed as the remaining part due to its scarcity and difficult location will become unusable for her.	On 10.07.2020 Response letter from RD to the Complainant. The RD planing to take the issue to the standing Commission for consideration.On 23.10.2020 The Comission has decided to redeem the plot fully. The Contract has been signed.	23.10.20	Closed

15	Written	RD	19.06.20	Anzor Burduli ID:01025004214	Compensation Rate	On 19.06.2020 Letter. The citizen is unsatisfied with the appraisal document and requests re-appraisal.	On 10.08.2020 The letter was dispatched to the "IDOM Consulting, Engeneering, Architecture, SAU' and "LTD Gama-Consulting" for further review with CC to the Complainant". On 23.10.2020 The agreement was reached with the citizen, The compensation amount has been raised. The Contract has been signed.	23.10.20	Closed
16	Written	RD	24.06.20	Vladimer Gomuri ID: 16001032489	Inclusion in LARP	On 24.06.2020 Letter. The citizen complains that the RD has redeemed part of land plot from him and remaining part becomes unusable because he will not have access road to his plot, as he demanding full inclusion in larp or arrangement access road.	On 10.08.2020 The letter was dispatched to the Design service of the Road Department for further review with CC to the Complainant".		Open
17	Written	RD	29.06.20	Aleksi Beniaidze ID: 16001027100	Other	On 29.06.2020 Letter. The citizen says that he owns 1940 sq.m land plot and house that fully included in resettlement zone, he asks if it is possible to keep part of the plot.	On 11.07.2020 The letter was dispatched to the "IDOM Consulting, Engeneering, Architecture, SAU' and "LTD Gama-Consulting" for further review with CC to the Complainant". On 14.09.2020 The agreement was reached with the citizen, he kept part of the land in his ownership as he asked. The Contract has been	14.09.20	Closed

							signed on partially redemption.		
18	Written	RD	20.07.20	Vasil Zakaidze ID:01007016477 T:555 11 39 16	Inclusion in LARP	The citizen complains that after partially reedemption of his plot, the rest part becoming useless for his, as he demanding full Redemption.	The response letter from RD to the complainant. Because there will be access to the remaining plots there is no neccesity to redeem the plots. Therefore the department lacks the ability to meet the citizen's request. On 13.08.2020. The Agreement was reached on the partially redemption. The Contract has been signed.	13.08.20	Closed
19	Written	RD	14.08.20	Iuri Burduli ID:16001006815 T:599 51 81 05	Other	On 14.08.2020 Letter. The citizen says that the trees and plants on his plot were described and evaluated without him and there are errors in the evaluation. He requests a re-evaluation.	On 18.08.2020 The letter was dispatched to the "IDOM Cunsulting, Engeneering, Architecture, SAU' and "LTD Gama-Consulting" for further review with CC to the Complainant". On 27.10.2020. The Contract has been signed in accordance with re-evaluation.	27.10.20	Closed
20	Written	RD	25.09.20	Eteri Burduli ID:16001022181	Restriction or loss of access	On 25.09.2020 Letter. Citizen complains that cause of the construction works access to his plot where stands garage was blocked. He requests to solve his problem.	On 07.10.2020 The letter was dispatched to the "IDOM Cunsulting, Engeneering, Architecture, SAU' and "LTD Gama-Consulting" and Design service of		Open

							RD for further review with CC to the Complainant"		
21	Written	RD	16.10.20	Spartak Mikorashvili ID:01001012595 T:551 008 002	Inclusion in LARP	On 16.10.2020 Letter. The Citizen is interested in if he will have access to his rest part of land by project, if not, he request full inclusion in Larp.	On 03.11.2020 The letter was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S" for further detail study, with "CC to the complainant". On 21.12.2020 UBM's letter to RD. The Supervisor has instructed to the Contractor to provide permanent and quality access for citizen. On 23.01.2021 UBM' Letter to RD. The Supervisor noted that The Contractor has informed that he cannot assure that the owner can access to this land plot. The Supervisor reminded the Contractor that they are required to comply with the conditions of the contract and ensure that Mr. Mikorasvhili will have access to his private property during the performance of works. The contractor is required to confirm that the citizen will have access to his land so that		Open

							the engineer shall inform the employer that the petition of the land owner could be responded.		
22	Written	RD	02.12.20	Darejan Zakaidze ID:6001000598 T:599 26 58 34	Restriction or loss of access	On 02.12.2020 Letter. The Citizen is interested to know if the project envisages the access from main road to her plots.	On 30.12.2020 The letter was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S" to provide position about issue raised in citizen's letter. On 31.05.2021 UBM's Letter to RD. The supervisor notes that after studying the issue, the engineer considers that construction of access road to the land plot is possible despite complex terrain. The engineer instructed the contractor to provide a draft design solution to connect the plots to the project road. The contractor should prepare a BoQ the access road within 2 weeks.		Open
23	Written	RD	02.12.20	Venera Zakaidze ID:01024048149 T:568 33 99 63	Restriction or loss of access	On 02.12.2020 Letter. The Citizen is interested to know if the project envisages the access from main road to her plots.	On 30.12.2020 The letter was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK		Open

							HIZMETLERI A.S" to provide position about issue raised in citizen's letter. On 31.05.2021 UBM's Letter to RD. The supervisor notes that after studying the issue, the engineer considers that construction of access road to the land plot is possible despite complex terrain. The engineer instructs the contractor to provide a draft design solution to connect the plots to the project road. The contractor should prepare a BoQ the access road within 2 weeks.		
24	Written	RD	12.01.21	Valerian Tsamalaidze ID:01007001949	Inclusion in LARP	On 12.01.2021 Letter. The citizen complains that after partially redemption of his land, the rest part will be unusable for him, therefore he demands full redemption.	On 23.02.2021 the Letter was dispatched to the „IDOM Consulting, Engineering, Architecture, SAU” and "LTD Gama Consulting" for further detail study. On 05.2021 The issue has been considered by the RD's Commission and decided to redeem the rest part. On 21.05.2021 The contract has been signed.	21.05.21	Closed
25	Written	RD	15.01.21	Anzor Burduli ID:01025004214	Inclusion in LARP	On 15.01.2021 Letter. The citizen complains that after partially redemption of his land, he will not have access to the rest part of	On 28.01.2021 The letter was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER		Open

						plot and it will be unusable for him, therefore he demands full redemption.	MUSAVIRLIK HIZMETLERI A.S" for further detail study. On 08.04.2021 UBM's Letter to RD. The supervisor notes that the engineer instructed the contractor to provide proposal for the construction drawing and performance of the works: including Bill of Quantities, for access road.		
26	Written	RD	27.01.21	Liana Burduli ID:16001005910 T:551 163 001	Compensation Rate	On 27.01.2021 Letter. The citizen states in the letter that she has received an offer from the RD about redemption of her land and she is against to sale her property at this stage because: the compensation is low, so she asks to see the valuation document, situational drawings and is also interested in Prospects for the use of the remaining lands according to Gudauri GRG.	On 16.02.2021 The Letter was dispatched to the Ministry of Infrastructure, Department of Spatial Planning To present a position about existence of possible restrictions in that region according to Gudauri GRG. . On 26.02.2021 Response letter from the Ministry of infrastructure. On 08.04.2021 The contract has been signed.	08.04.21	Closed
27	Written	RD	08.02.21	Mikheil Buchukuri T:579 98 07 60	Inclusion in LARP	On 08.02.2021 Letter. The citizen complains that after partially redemption of his land, the rest part will be unusable for him, therefore he demands full redemption.	On 01.03.2021 The letter was dispatched to the "LTD Gama Consulting" for further review. On 05.2021 The issue has been considered on the RD's Commision and refused to redeem the rest part of the land. On	20.07.21	Closed

							24.06.2021 The issue was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S" for further review and provide position with that issue. On 15.07.2021 UBM's Letter to RD. The supervisor studied issue and notes that the 427 sq.m. from the total area of the land plot is out of ROW of the project road, as for 225 sq.m. of the land plot which borders the project road along the section, it is located on the slope and access road can not be constructed due to complex terrain. On 20.07.2021 The issue has been re-considered on the RD's Commission and decided partially redemption of the land plot.		
28	Written	RD	27.01.21	Giorgi Kharchaidze ID: 01019014240 T: 557 50 70 70	Inclusion in LARP	On 27.01.2021. Letter. The citizen says that RD has redeemed his one plot within the project and got promise that the remaining plots would be provided with access road, nowadays as he has information surrounding his plots	On 12.03.2021 the issue was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S" for further review. On 17.04.2021 UBM's Letter		Open

						started lands registration process in private ownership which may hinder the arrangement of the access road as the places where the road arrangement should have taken place may be privately owned. He therefore requests that his remaining land plots to be redeemed or the detail design of project be provided for him to see where the access road to his plots will be arranged.	to RD. The supervisor notes that the access road to two of the land plots owned by Giorgi Karchaidze can be arranged as proposed by the engineer via enclosed plan. On 21.04.2021 RD's letter to UBM. RD instructed the UBM to provide the detailed design plan.		
29	Written	RD	19.03.21	Valerian Burduli ID:01027090135	Inclusion in LARP	On 19.03.2021 Letter. The AP complains that after partially redemption of his land, the rest part remains in such a configuration that it becomes unusable. as he demand the rest part will be redeemed.	On 26.04.2021 RD's Letter to Citizen. The Issue will be considered by RD's Commision. On 05.2021 The Commision has decided to redeem the rest part. The Contract will be signed untill 20 june. The Contract has been signed.	20.06.21	Closed
30	Written	RD	02.03.21	Tskere Village Residents	HSE Concerns	On 02.03.2021 Letter. The population of the Tskere village in their joint letter names various problems if why they oppose the project.	On 15.03.2021 A meeting was held with the population of the village of Tskere in the department. Where they were given detailed information about the project and also about the ways to solve the problems raised by them.	15.03.21	Closed

31	Written	RD	25.05.21	Giorgi Zakaidze ID:16001026564 T: 557601576	Inclusion in LARP	On 25.05.2021 Letter. The citizen notes that RD has redeemed several land plot from him under the KK project and one land plot left in his possession which is unusable due to lack of access road. as he requesting mentioned land plot to be included in larp. The citizen also mentions and complains that regarding his plot (included in Larp) the compensation of the fence is unfairly indicated in the assessment plan because its material cost is much more expensive than the amount offered. therefore he demand re-appraisal.	On 27.05.2021 Letter was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S" for further review and provide position. On 27.05.2021 The letter was dispatched to the "IDOM Consulting, Engeneering, Architecture, SAU" and LTD Gama-Consulting" for further review and provide position. On 27.05.2021 RD's Interim Letter to Complainant. On 15.07.2021 UBM's Letter to RD. The supervisor notes that access to the land plot is already considered in the design of the project road, during construction activities access to the land plot will be restricted before completion of backfilling works.		Open
32	Written	RD	02.04.21	Tamazi Burduli ID:16001000063 T:595 06 63 69	Inclusion in LARP	On 02.04.2021 Letter. The AP complains that after partially redemption of his land, the rest part will be unusable for him as he will not have access on it. He demands full redemption.	On 22.04.2021. The Letter was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S" for further detail study and provide position. On		Open

							31.05.2021 UBM's Letter to RD. The Supervisor notes that The engineer instructed the contractor to provide a draft design solution to connect the plot to the road project. The CC should prepare a BoQ of the access road including design costs within 2 weeks.		
33	Written	RD	22.04.21	Inga Tskhvedadze Representative of Mariam Zakaidze ID:01003019827 T:593 67 00 27	Restriction or loss of access	On 22.04.2021 Letter. The Complainant states that after partially redemption of citizen's land plot it may be left without access road. she requests to be informed whether an access road is planned to be arranged with the plot. Otherwise her demand is full redemption.	On 26.04.2021 The letter was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S" for further review and provide position. "with CC to the complainant". On 26.05.2021 UBM's Letter to RD. The Supervisor notes that the engineer instructed the contractor to provide plan, detailed design and BoQ of access road within 2 weeks.		Open
34	Written	RD	27.05.21	Nodari Burduli ID:16501034674 T: 595 03 53 53	Compensation Rate	On 27.05.2021 Letter. The Citizen is unsatisfied with the assessment. According to him, the valuation is low compared to market value.	On 28.05.2021 The Letter was dispatched to the "IDOM Consulting, Engineering, Architecture, SAU" and "LTD Gama Consulting" for further study and provide position. On 20.05.2021 RD's Letter to the Citizen. RD		Open

							explain in its letter that Department instructed the CC to study the issue in detail which requires some time and Citizen will be informed about the results additionally.		
35	Written	RD	24.05.21	Mikheil Zakaidze ID:16001007605 T:599 99 51 53	Restriction or loss of access	On 24.05.2021. Letter. The Citizen is interested in whether an access road will be arranged to his land plot (which remains in his ownership after partially redemption).	On 04.06.2021 The letter was dispatched to the "UBM ULUSRARASI BIRLESMIS MUSAVIRLER MUSAVIRLIK HIZMETLERI A.S" for further review and provide position. On 04.06.2021 RD's Letter to the Citizen. RD explain in its letter that Department instructed the CC to study the issue in detail which requires some time and Citizen will be informed about the results additionally.		Open
36	Written	GRM (ADB)/RD	18.06.21	Gocha Lagvilava Representative Of Tamar Beniaidze ID:01010016005 T: 558 14 74 26	Compensation Rate	On 18.06.2021 Letter. The Representative of Tamar Beniaidze notes that land owner is unsatisfied with compensation rate. He notes the valuation of the land is low and inconsistent with the market price. He presented alternative assessment (by samkharauli) where land price is much more (22 USD instead of 40 Gel) than RD's assessment and	On 22.06.2021 RD's Letter to „IDOM Consulting, Engineering, Architecture, SAU” and "Ltd Gama-Consulting". RD instructed the CC to describe and evaluate the missing part of private property. On 23.06.2021 RD initiated expropriation procedures. On 05.07.2021 The Contract has been signed on one		Open

						demanding the compensation to be issued according to Samkharauli's assessment. He notes that the sewer system and treatment plant were omitted in the initial assessment.	plot, second is under expropriation procedures.		
37	Written	RD	03.06.21	Mikheil Rostiashvili ID:16001003760 T:591 96 15 97	Inclusion in LARP	On 03.06.2021 Letter. Mr. Rostiashvili Complains that after partially redemption of his land it will be unusable for agricultural purposes. he demand full inclusion in Larp.	On 04.06.2021 The letter was dispatched to the "UBM ULUSLARARASI BİRLEŞMİŞ MÜŞAVİRLER MÜŞAVİRLİK HİZMETLERİ A.Ş. for detail study and provide position if rest part will be provided with access road. On 04.06.2021 Rd's Interim letter to Complainant. On 14.07.2021 UBM's Letter to RD. The supervisor studied issue and notes that the land plot borders section of the project road where the design considers construction of Bridge N5, therefore, the project road may restrict the access road only for some time during construction activities of the piers. after completion of the bridge works citizen rostiashvili will be able to access the land plot by means of passing under the bridge.		Open

Complaints received by Donor Organizations ADB & EBRD

#	Recipient	Date Received	Name & contact of	Complaint Category	Complaint Description	Resolution Description	Status
			Complainant				
1	OCRP	6 November 2021	Green Alternative (Khada Residents).	Environment	i) Destruction of the Khada Valley and incomplete alternatives; (ii) Impact on the livelihood, local benefits and quality of life of the complainants (iii) Problems of project design and impact on cultural heritage; (iv) The quality of ESIA	<ul style="list-style-type: none"> • ADB Management's response received by OCRP on 9 February 2021. • On March 24th, 2021 the OCRP deemed complaint eligible • On May 5th, 2021 BCRCs clearance of the CRPs TOR. 	Under Completion / Low Risk
2	EBRD /IPAM	27-Sep-19	National Trust Georgia, A Tbilisi-based civil society organization (CSO)	Environment	The Complaint raised concerns around: (i) the adequacy of stakeholder consultation in the design of the Project; (ii) the adequacy of the alternative routes assessment and consideration; (iii) the adequacy of the Environmental and Social Impact Assessment's evaluation of Project impacts on tourism and cultural heritage; and (v) the Project's adherence to international conventions on cultural heritage. The Complainants assert that these concerns have collectively contributed to the selection of an inappropriate route for the Project. In their Complaint, the Complainants request that IPAM (previously PCM) conduct a Compliance Review.	Consequently, the IPAM Head has determined that the Complaint satisfies the Compliance Review eligibility criteria, as set out in the 2019 Project Accountability Policy. IPAM will therefore initiate a Compliance Review for the North-South Corridor (Kvesheti-Kobi) Road Project in August 2020.	Under Completion / Low Risk *Note: this is the same complaint as #3 listed below with CRP

3	ADB/ CRP	10/10/2019	Peter Nasmyth "National Trust of Georgia"	Other	<p>The NTG has applied to CRP with request to review the following:</p> <p>The NTG asks that the Banks put the loans on hold until due diligence is made and a proper, independent assessment completed complying not only with international standards, like the Council of Europe Framework Convention for Society, but also Georgia's indigenous travel industry. The NTG would like to point out the Banks have it in their power to create the needed road and tunnel in a different valley, as well as promote eco-tourism in Khada. This would be a win-win situation for everyone, instead of continuing to pursue a serious mistake that would permanently damage Georgia's historic fabric and be regretted for years to come.</p> <p>A: Compliance conditions not met B: The alternative Lakatkhevi route was never considered C: The Banks encouraged the Georgian government to break its own international agreements D: Tourism potential mis-assessed; Georgia's inward tourism companies ignored, to generate long-term economic damage. E: The Banks systematic non-response to questions, complaints and publicity processes</p>	<p>Complaint was reviewed by the CRP.</p> <p>The CRP in its findings determines that the complaint does not meet the eligibility requirements of para. 138 of the Accountability Mechanism Policy (AMP) regarding identity of complainant and/or representative of a complaint must be considered eligible.</p> <p>In this case the requirements established in para. 179 of the AMP are not met. Therefore, CRP deems the complaint ineligible for compliance review.</p>	Under Completion / Low Risk
---	-------------	------------	---	-------	---	--	-----------------------------------

Annex 7: Training Record with Attendance Sheets



China Railway 23rd Bureau Group Co., LTD.

中国铁建

Subject of the training: <i>Cultural Heritage Awareness Training</i>		Training duration: / hours				
主题/培训内容		培训时长/学时				
No.	personal (full) name 姓名 (姓名) 姓名字	ID number/身份证 ID 身份证号	Position 职位 职位	Company 公司 公司	Date 时间 日期	Signature 签名 姓名
1	<i>Xiao Ming</i>		<i>representative of contractor CRCC</i>	<i>CRCC</i>	<i>2021.7.5</i>	<i>[Signature]</i>
2						
3						
4						
5						
6	<i>Zhang Xiaolin</i>			<i>CRCC</i>	<i>2021.7.5</i>	<i>[Signature]</i>
7	<i>Chen Hong He</i>			<i>CRCC</i>	<i>2021.7.5</i>	<i>[Signature]</i>
8	<i>Zhang Yisa Zhang</i>	<i>4259100223</i>		<i>CRCC</i>	<i>2021.7.5</i>	<i>[Signature]</i>
9	<i>Tong Shubo</i>			<i>CRCC</i>	<i>2021.07.05</i>	<i>[Signature]</i>
10	<i>Wu</i>			<i>CRCC</i>	<i>2021.7.5</i>	<i>[Signature]</i>
11	<i>Lei Wenjing</i>			<i>CRCC</i>	<i>2021.7.5</i>	<i>[Signature]</i>
12	<i>Zhou Kang Chen</i>			<i>CRCC</i>	<i>2021.07.05</i>	<i>[Signature]</i>

Trainer: *Nikolas Dimitrakidis Cultural Heritage Specialist*

Organizer: *UBM*



China Railway 23rd Bureau Group Co., LTD.

中国铁建

subject of the training: 培训科目名称: Cultural heritage awareness training				Training duration: / hours 培训时长/学时: 1		
No.	personal (full) name姓名 姓名(全称) 姓名	ID number身份证 ID 身份证号	Position 职位 职位	Company公司 公司	Date 时间 日期	Signature签字 签字
1	Yan Yuxiang			CRCC	2021.7.5	颜宇翔
2	Tang Yuhua			CRCC	2021.7.5	唐宇华
3	Zhang Jinglin			CRCC	2021.7.5	张景林
4	Zhou Man			CRCC	2021.07.05	周曼
5	zhou Guang			CRCC	2021.7.5	周广
6	Song Lixi			CRCC	2021.7.5	宋立西
7	Gao Shunshun			CRCC	2021.7.5	高顺顺
8	Wu Wen Shuai			CRCC	2021.7.5	吴文帅
9	Zhu Shuang			CRCC	2021.7.5	朱爽
10	Song Chen Hao			CRCC	2021.7.5	宋晨昊
11	Wang Zhi Xiang			CRCC	2021.7.5	王智翔
12	Wang Pin an			CRCC	2021.7.5	王平安

Trainer: Nikoloz Tskvitidze Cultural Heritage Specialist
 Organizer: WBM



China Railway 23rd Bureau Group Co., LTD.

中国铁建

subject of the training: 培训科目名称: Cultural Heritage training				Training duration: / hours 培训时长/学时: 1		
No.	personal (full) name姓名 姓名(全称) 姓名	ID number身份证 ID 身份证号	Position 职位 职位	Company公司 公司	Date 时间 日期	Signature签字 签字
1	SHOU JJ	01994001506	office manager	CRCC	2021.07.05	周 杰
2	Tian Xian			CRCC	2021.07.05	田 娴
3	Zhang Minshun	01044669942	HR supervisor	CRCC	05.07.2021	张 敏
4	Zhou Lianzhi	02001110221	PC	CRCC	05.07.2021	周 连
5	Nikoloz Tskvitidze	0102000161	Coordinator (CRCC)	CRCC	05.07.2021	尼 科 洛 兹
6	Yang Huijiang		Safety Rep	CRCC	2021.7.5	杨 辉 江
7	Wu Xiang		Safety Rep	CRCC	2021.7.5	吴 翔
8						
9						
10						
11						
12						

Trainer: Nikoloz Tskvitidze Cultural Heritage Specialist
 Organizer: WBM

Annex 8: Preconstruction Biodiversity Survey of Lot# 2

საქართველოს რეგიონული
განვითარებისა და
ინფრასტრუქტურის სამინისტრო
საპარტნიორო სადამკვეთო
სამსახურის დეპარტამენტი



Ministry of Regional
Development and Infrastructure of Georgia

**ROADS DEPARTMENT
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N 2-08/11918
22/07/2021

11918-2-08-2-202107221216



To: **Mr. Jia Junke**
The Project Manager of
China Railway 23rd Bureau Group Co., Ltd.
E-mail: crcc23.jdcrp@gmail.com;
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Acting Team Leader
UBM ULUSLARARASI BİRLEŞMİŞ MÜŞAVİRLER MÜŞAVİRLİK HİZMETLERİ A.Ş
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Dear Mr. Jia Junke,

We would like to inform you that on July 19, 2021, the Roads Department of Georgia (hereinafter - RD) received the letter №7501/01 from the Ministry of Environmental Protection and Agriculture of Georgia (hereinafter - MEPA), about the no objection pre construction biodiversity survey for Kvesheti-Kobi road project Lot 2.

Attachment: The letter №7501/01 of the Ministry of Environmental Protection and Agriculture of Georgia

Sincerely,

Salome Tsurtsunia
Deputy Chairperson of RDMRDI



Jinvali-Larsi Road Construction Project on the Section of Dusheti and Kazbegi Municipalities



Kvesheti-Tskere Section (Lot 2) Preconstruction Biodiversity Survey Report

Tbilisi, 2021

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Acronyms Used in the Text

BB	Breeding bird; breeder, Enters the area only for breeding
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CR	Critically Endangered taxon
DD	Data Deficient taxon
EN	Endangered taxon
IBA	Important Bird Area
IUCN	International Union for the Conservation of Nature
LC	Least Concern
M	Migrant; May occur on the area during migration (autumn and spring);
NT	Near Threatened
SPA	Special Protection Area for Birds
VU	Vulnerable
YR-R	Year-round breeder, present throughout the year in Georgia.
YR-V	Year-round visitor; non-breeder, present throughout the year.

1 Introduction

Pursuant to the permit conditions issued on the project by the Ministry of Environmental Protection and Agriculture (Ministerial Order N 2-354 dated: 25-04-2019 clauses 15,16¹), an agreement signed between China Railway 23rd Bureau Group CO. Ltd and Road Department of Georgia, and obligations, set out in the Environmental Impact Assessment Report, the construction contractor carried out additional preconstruction biodiversity survey-assessment.

The aim of the survey was to study the flora and fauna of the areas selected for planned infrastructure and temporary facilities within Kvsheti-Tskere (Lot-2) section corridor, namely, following areas were visually observed:

- Project Corridor;
- Camp #1 location site;
- Concrete plant #1 location site;
- Spoil ground #1 site
- Tunnel #1 south portal site;
- Tunnel #1 north portal site
- Camp #2 and concrete plant #2 location site
- Spoil ground #2 and topsoil disposal area on plateau;
- Camp #3 and concrete plant #3 location site;
- Temporary access road sites (3 section).

Works were performed in spring of 2021 by the group of four biologists (the list of work implementers is given in Annex 5) and included field and desk surveys.

Additional preconstruction survey-assessment will be carried out during selection of new areas for the project needs (e.g.: topsoil disposal, spoil ground, etc.), not later than 2 weeks prior to the start of the construction.

2 Floristic Survey of the project Area

2.1 Survey methodology

Floristic survey considered identification of plant species within the road corridor, including project-related temporary infrastructure sites, rechecking-compilation of plant lists of the existing habitats; identification of sensitive sites on project areas and in the direct vicinity of them and, as required, preparation of impact avoidance and/or mitigation recommendations.

Prior to the field observation, the results of which are provided in the report, results of floristic surveys, conducted within the EIA framework and later were processed and analyzed.

¹ Clause #15 Prior to the commencement of the construction works, the Roads Department of Georgia shall ensure the impact assessment on ash and alder forest habitat on the area of tunnel N1 entrance portal, and, if necessary, determine appropriate mitigation and / or compensatory measures and submit them to the Ministry for approval;

Clause #16. Prior to construction, the Roads Department of Georgia shall conduct additional pre-construction fauna survey and submit the survey results to the Ministry for approval. Also, prior to the commencement of construction, information prepared based on the above-mentioned surveys on the animal species in the project area, impact on them, impact avoidance, mitigation and, if necessary, compensatory measures should be submitted to the Ministry for approval. The information should also identify the project impact on Egyptian Vulture, impact type and scale, and impact avoidance, mitigation and / or compensatory measures, and if necessary, an alternative to the relevant section of the road should be considered. The information submitted for approval should also include data on the presence of water-dependent biodiversity (especially otter) in the project impact zone and, if necessary, potential impacts on it, impact mitigation, prevention, and / or compensation measures.

2.2 Vegetation Cover and Habitats

The project corridor crosses 6 habitat types, which are classified as follows, according to EUNIS classification:

1. C3.55 - Sparsely vegetated river gravel banks
2. I1 - Arable land and market gardens
3. G1.21 - Riverine Fraxinus - Alnus woodland, wet at high but not at low water
4. G1.A4 - Ravine and slope woodland
5. E5.1 - Anthropogenic herb stands
6. D4.1 - Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks.

Habitats and list of the plant compositions in them are presented below by studied sections.



Figure 1. Layout Scheme of the Project Road and Studied Sections

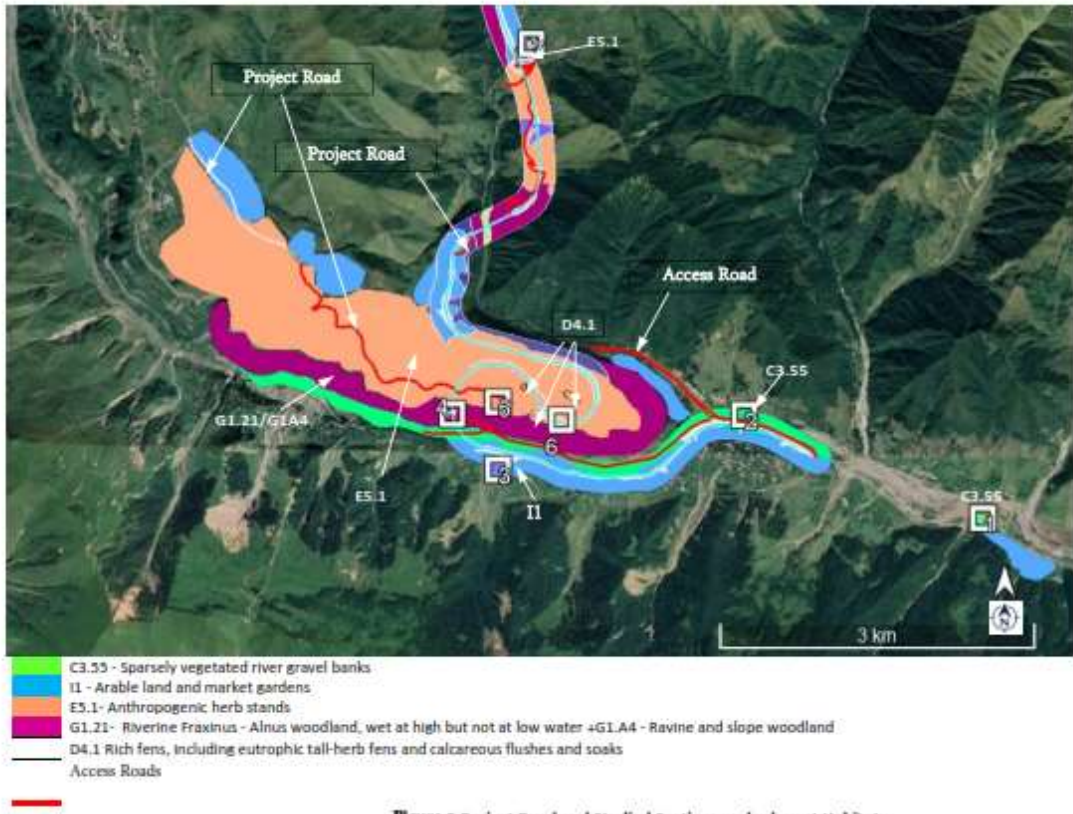


Figure 2. Project Road and Studied Sections and relevant Habitats

2.2.1 Concrete Plant #1

Location: Adjacent to tetra Aragvi river, north to the highway E117.

UTM Coordinates of the site center: 38T 465177.70 m E; 4696623.39 m N.



Figure 3. Concrete Plant #1

Plants of sparsely vegetated river gravel banks (EUNIS Code-C3.55) are represented on the concrete plant site, where vegetation cover is less developed, however associations of salt cedar (*Tamarix ramosissima*) can be found.

Photo-material reflecting the state of concrete plant N 1 site, and the list of main vegetation presented in this habitat, is given in Table 1.





Figure 1. Concrete Plant #1 Site View

Table 1. Species Composition of Vegetation Cover Characteristic to Concrete Plant #1 Site

Habitat : C3.53 - Sparsely vegetated river gravel banks		
Latin Name	English Name	IUCN Conservation Status
<i>Heracleum sosnowskyi</i>	Sosnowsky's hogweed	-
<i>Cirsium</i> sp.	Thistles	-
<i>Alisma plantago-aquatica</i>	European water-plantain	LC
<i>Urtica urens</i>	Dwarf nettle	LC
<i>Luzula</i> sp	Rush	-
<i>Equisetum pratense</i>	Horsetails	LC
<i>Trifolium</i> sp	clover species	-
<i>Primula macracalyx</i>	Large-sepaled Primula	-
<i>Tamarix ramosissima</i>	Salt cedar	LC
LC - Least Concern		
IUCN - International Union for the Conservation of Nature		

There are no protected species on the area selected for the concrete plant. The sensitivity of the habitat on this site is low.

During construction works, the impact on vegetation cover and habitat will not be significant. During field observation and on the basis of information analysis, the need for development of any additional specific mitigation measures was not identified.

In order to reduce the impact on vegetation cover and habitats on the site preparation and construction stage borders of work sites and movement roads should be adhered to. It will be necessary to treat the water used for vehicle washing and wastewater on the site, spill should be prohibited on or near the concrete plant site, strict adherence to measures defined for avoidance/mitigation of impact on air, soil and aquatic environment (additional information is provided in the Concrete Plant Management Plan, Air Quality and other plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Visual observation of the vegetation cover along the perimeter of the area should be carried out occasionally.

After completion of works, the temporarily used sections of the area will be reinstated in order to restore it close to the initial state (according to the Recultivation Plan agreed with the Ministry of Environmental protection and Agriculture of Georgia), which will reduce environmental impact caused by concrete plant arrangement-operation.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat on the concrete plant site can be assessed as low.

Receptor Sensitivity	Likelihood	Impact significance
----------------------	------------	---------------------

Vegetation Cover/habitat	Low	High	Low
Assessment methodology is given in Annex 1			

During construction and operation of the concrete plant, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

2.2.2 Camp #1 Site

Location: Arakhveti village area, south from E177 highway.

UTM coordinates of the site center: 38T 461196.53 mE; 4697048.86mN



Figure 4. Camp#1

Camp #1 site is arable land (EUNIS code - I), vegetation cover – mostly secondary and artificially grown crops. It should also be noted that there is a narrow line of artificially grown willow (*Salix sp.*) and European aspen (*Populus tremula*), which is enclosed on the banks of the spring, running nearby. Herbaceous species dominate here.

The area selected for the bank is privately owned. The construction company has a land use agreement with the property owner. Relevant information is submitted to the engineer.

Photo-material reflecting the situation on the area, selected for the Camp N1 is given in Figure 2, and Table 2 provides the list of main plant species recorded in the given habitat.





Artificially grown line of willow (*Salix* sp.) and aspen (*Populus* sp.)

Picture 2. Camp #1 Site View

Table 2. Camp #1 Site vegetation

Habitat: Regularly or recently cultivated Agricultural land plots, orchards and Homestead lands.		
Latin Name	English Name	IUCN Conservation Status
<i>Malus orientalis</i>	Caucasus apple	DD (Global)
<i>Pyrus caucasica</i>	wild pear	-
<i>Corylus avellana</i>	common hazel	LC
<i>Populus tremula</i>	European aspen	LC
<i>Salix viminalis</i>	basket willow,	LC
<i>Rosa canina</i>	dog rose	LC
<i>Prunus divaricata</i>	Cherry plum	LC
<i>Leucanthemum vulgare</i>	Oxeye daisy	-
<i>Carex</i>	sedges	LC
<i>Orchis purpurea</i>	Lady orchid	LC
<i>Alchemilla</i> sp	Lady's Mantle	-
<i>Taraxacum officinale</i>	Common Dandelion	LC

IUCN – International Union for the Conservation of Nature
 LC – Least Concern; DD – Data Deficient

No red-listed species of Georgia were observed on the area selected for the camp.

One of the recorded species - Lady orchid (*Orchis purpurea*) - is protected under Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Annex II). [Note: The aim of the Convention is to regulate international trade in specimens of wild animals and plants so that not to threaten the survival of the species. Species of Annex II may not be endangered. However, this risk may occur without regulation of trade with these species. Trade with these species is allowed but it should be controlled]. Species is not protected under Georgian and/or international red Lists. It is represented by unit individuals within the study area.

The habitat existing on the site has low sensitivity.

During construction-operation of the camp, the impact on vegetation cover and habitat will not be significant. During field observation and on the basis of information analysis, the need for development of any additional specific mitigation measures was not identified.

In order to reduce the impact on vegetation cover and habitats on the site preparation and construction stage borders of work sites and movement roads should be adhered to. It will be necessary to treat the water used for vehicle washing and wastewater on the site, spill should be prohibited on or near the concrete plant site, strict adherence to measures defined for avoidance/mitigation of impact on air, soil and aquatic environment (additional information is provided in the Camp Management Plan, Air Quality, Transport management and other plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Visual observation of the vegetation cover along the perimeter

of the area should be carried out occasionally

After completion of works, the temporarily used sections of the area will be reinstated in order to restore it close to the initial state (according to the Reclamation Plan agreed with the Ministry of Environmental protection and Agriculture of Georgia), which will reduce environmental impact caused by arrangement-operation of the temporary infrastructure.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat on the Camp N1 site can be assessed as low.

	Receptor Sensitivity	Likelihood	Impact Significance
Vegetation Cover/habitat	Low	High	Low
Assessment Methodology is given in Annex 1			

During construction and operation of the concrete plant, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

2.2.3 Spoil Ground #1 (Kvesheti Bypass Section Site)

Location: Along the right bank of Tetri Aragvi river, on the area of Kvesheti village. It borders the homestead land plots. The spoil ground will be arranged in the result of filling the space, created between the new roadbed and the existing bank

UTM coordinates of the site center: 38T 463551.87 m E; 4697450.32 m N



Figure 5. Kvesheti Bypass Road Section and the Spoil ground 1 (marked in green)

The area adjacent to the spoil ground # 1 is agricultural land plot (EUNIS code - I), the part of the area is sparsely vegetated river gravel banks (EUNIS code - C3.55).

The area borders homestead land plots with artificially grown plants. Part of mentioned plants and trees gets within the resettlement buffer and is subject to cutting.

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There are no protected species within the section under discussion and nearby. The habitat is of low sensitivity.

The photo-material reflecting the situation on Spoil ground#1 is shown on Picture 3 and the Table 3 provides the list of main plant composition represented in given habitat.



Picture 3. Spoil Ground Site

Table 3. Vegetation Cover on Spoil Ground # 1 Site

Habitat: 1 Regularly or recently cultivated agricultural land plots, orchards and homestead lands + C3.55 - sparsely vegetated river gravel banks		
Latin name	English Name	IUCN Conservation Status
<i>Malus orientalis</i>	Caucasian apple	DD (Global)
<i>Pyrus caucasica</i>	wild pear	-
<i>Salix arbuscula</i>	Willow	-
<i>Populus tremula</i>	European aspen	LC
<i>Populus pyramidalis</i>	silver poplar	DD
<i>Corylus avellane</i>	common hazel	LC
<i>Viburnum opulus</i>	Gelder-rose	LC
<i>Tamarix ramosissima</i>	Salt cedar	LC
<i>Crataegus kyrtostylla</i>	Hawthorns	-
<i>Orchis purpurea</i>	Lady orchid	LC
<i>Urtica dioica</i>	common nettle	LC
<i>Euphorbia</i> sp.	Milkweed	-
IUCN – International Union for the Conservation of Nature LC – Least Concern; DD – Data Deficient		

There were not any plant species recorded on the area selected for the spoil ground that are protected under the Georgian or international (IUCN) Red List. The species recorded in Annex II of CITES Convention - Lady orchid (*Orchis purpurea*) is presented by unit individuals.

The habitat on the site is of low sensitivity.

During construction works, the impact on vegetation cover and habitat will not be significant. During field observation and on the basis of information analysis, the need for development of any additional specific mitigation measures was not identified.

In order to reduce the impact on vegetation cover and habitats on the site preparation, material transportation to the site and disposal on the spoil ground, borders of work sites and movement roads should be adhered to. Strict adherence to measures defined for avoidance/mitigation of impact on air, soil and aquatic environment is required (additional information is provided in the Spoil Ground Management Plan, Air Quality, Transport management and other plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Visual observation of the vegetation cover along the perimeter of the area should be carried out occasionally

After completion of works and recultivation of the site, additional green space will be created between the new road the settlement, which can be considered as one of mitigation measures for noise and emission impact reduction on population during road operation.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat on the spoil ground site can be assessed as low.

	Receptor Sensitivity	Likelihood	Impact Significance
Vegetation Cover/habitat	Low	High	Low
Assessment Methodology is given in Annex 1			

During work process, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

2.2.4 Tunnel #1 South Portal

Location: Adjacent to Arakhveti village, on the left bank of Tetri Aragvi river.

UTM coordinates of the site center: 38T 460791.07 m E; 4697565.88 m N

The south portal of the Tunnel #1 is Fraxinus - Alnus woodland (G1.21 - Riverine Fraxinus - Alnus woodland, wet at high but not at low water +G1.A4 - Ravine and slope woodland). The area is owned by the Forest Fund. In order to obtain the permit for tree and vegetation cutting within the project corridor, forest massif taxation was performed within the road buffer borders. Corresponding section was excluded from the Forest fund in compliance with all procedures/requirements acting in Georgia.



Figure 6. South Tunnel portal showing the Forest Fund Site; Survey drawing of the Forest fund Section Got within the Buffer

8550 m² area forest section on the south tunnel portal site within the buffer, gets in the direct impact zone. For project needs, in total 1127 trees and plants with 8 cm and more diameter are subject to cutting. Dominant species (98%) among above-mentioned is common hazel (*Corylus avellana*). Mostly hazel bushes with 8 cm diameter, plants with 10 cm diameter and unit specimens with 14-16 cm diameter are observed within the direct project impact zone. Following species are represented by individual specimens within the south tunnel portal zone: Common medlar (*Mespilus germanica*, d=8cm), Cherry plum (*Prunus divaricata*, d=12cm), Alder buckthorn (*Frangula alnus*, d=8cm). Less than 10 specimens of common hornbeam (*Carpinus caucasica*, mainly D= 8cm, as unit individuals- D= 12-32cm), wild pear (*Pyrus caucasica*, 6 specimens, d= 8-28cm), Litwinow Birch (*Betula litwinowii* 5 specimens, d= 20-36cm), Georgian oak (*Quercus iberica*), Red dogwood (*Theleycrania australis*, d=12cm) are observed on the mentioned site. Within the borders of the section, 27 Field maple (*Acer campestre*), 26 Grey alder (*Alnus incana*), 23 European aspen (*Populus tremula*), 15 European ash (*Fraxinus americana*, IUCN_CR, D=8-16cm) and 11 Hawthorn (*Crataegus kyrtostyla*, mostly D= 8-10cm, as unit individuals D= 16-24cm) are subject to cutting. Among plants to be cut, there are 2 units with the maximum diameter -European aspen (*Populus tremula*) d= 52cm. One specimen with the diameter of 40 and 44 cm is also observed - Grey alder (*Alnus incana*). According to the crown maple tree is distinguished among other cutting trees (d= 20-36cm, in total 26 trees). Hazel also dominates among plants with the diameter less than 8 cm.

By rough assessment, approximately 0.3% of the ash-alder forest habitat within 8 km site zone along the left bank of the Tetri Aragvi River gets under the direct project impact.

None of these species is protected by the Georgian Red List.

Picture 4 below shows the general view of the tunnel portal area, and Table 4 shows the list of vegetation cover species composition observed in the habitat at the tunnel portal site.



Picture 4. General Views of the site, view of the site after completion of the project (on the right, below)

Table 4. Tunnel #1 South Portal

Habitat: G1.21 - Riverine Fraxinus - Alnus woodland, wet at high but not at low water +G1.A4 - Ravine and slope woodland

Latin Name	English Name	IUCN Conservation Status
<i>Alnus barbata</i>	Common alder	DD
<i>Fraxinus excelsior</i>	Ash	NT
<i>Carpinus orientalis</i>	Oriental hornbeam	LC
<i>Populus tremula</i>	European aspen	LC
<i>Quercus iberica</i>	Georgian Oak	-
<i>Cornus mas</i>	Cornel	LC
<i>Swida australis</i>	Red Dogwood	-
<i>Malus orientalis</i>	Caucasus apple	DD (Global)
<i>Acer capestre</i>	Maple	-
<i>Crataegus kyrtostyla</i>	Hawthorn	-

IUCN – International union for the Conservation of Nature
 LC – Least Concern; DD - Data Deficient

The habitat has medium sensitivity.

Part of vegetation cover has been already removed within the portal zone. From total projection coverage of the plants, about 5-10% is encroached upon [it should be noted that vegetation cover, timber recourses abstracted from this habitat requires timely removal from the site].

During construction works, the impact on vegetation cover and habitat ca be considered as medium. It should also be noted that temporary access road is planned on the site, which also requires exclusion of vegetation cover from the Forest fund and removal (additional information is given in Access Road Subparagraph). After completion of works, it is necessary to recultivate the site, namely the portal zone. Specific measures will be defined after completion of works, on the basis of analysis of the site condition and will be reflected in the

Recultivation Plan (plan will be submitted to the MoEPA for approval).

At the given stage, during field observation and based on information analysis, no need for additional specific mitigation measure development was revealed.

In order to reduce the impact on vegetation cover and habitats on the site preparation and construction stage, borders of work sites and movement roads should be adhered to. Strict adherence to measures defined for avoidance/mitigation of impact on air (dust, exhaust), soil and aquatic environment is required (additional information is provided in the plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Visual observation of the vegetation cover will be required in direct vicinity of the area.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat on the Tunnel #1 south portal site can be assessed as medium.

	Receptor Sensitivity	Likelihood	Impact Significance
Vegetation Cover/habitat	Medium	High	Medium

Assessment Methodology is given in Annex 1

During work process, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

2.2.5 Tunnel #1 North Portal

Location: Tunnel #1 North portal extends to Didveli Plateau area, on the left bank of Tetri Aragvi river.

UTM coordinates of the site center: 38T 461498 m E; 4697810 m N

In the northern portal zone of Tunnel # 1, vegetation is represented by a combination of herbs of anthropogenic origin (E5.1- Anthropogenic herb stands) and subalpine-deciduous shrubs. Ephemeral wetlands are observed in the vicinity of the portal (D4.1 - Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks). These sections need protection. Their area should be fenced to protect from damage during work and the movement of vehicles.

The picture below shows the views of this section, and Table 5 shows the list of vegetation observed in the habitat of the mentioned area.



Figure 7. Tunnel #1 North portal on Didveli Plateau



Picture 5. General views of the Site

Table 5. List of Main Vegetation Species Composition Adjacent to Tunnel #1 North portal

Habitat: E5.1 - Anthropogenic herb stands + subalpine deciduous shrubs		
Latin Name	English Name	Conservation Status
<i>Malus orientalis</i>	Caucasian apple	DD (Global)
<i>Pyrus caucasica</i>	wild pear	-
<i>Salix caprea</i>	Goat willow	LC
<i>Prunus divaricata</i>	Cherry plum	LC
<i>Corylus avellana</i>	common hazel	LC
<i>Berberis vulgaris</i>	Barberry	-
<i>Lonicera caprifolium</i>	honeysuckle	-
<i>Crataegus kyrtostylla</i>	Hawthorns	-
<i>Orchis purpurea</i>	Lady orchid	LC
<i>Urtica dioica</i>	common nettle	LC
<i>Euphorbia sp.</i>	Milkweed	-
<i>Rhododendron lateum</i>	Azalea	LC
<i>Cerasus sylvestris</i>	Sweet cherry	-
<i>Leucanchemum vulgare</i>	Oxeye daisy	-

IUCN – International union for the Conservation of Nature
 LC – Least Concern; DD – Data Deficient

Due to above-mentioned swamps, the site can be considered as of medium sensitivity.

On the basis of field observation and information analysis, no need for additional specific mitigation measure development was revealed, except fencing of ephemeral swamp and implementation of standard mitigation measures. However, it is recommended to fence the areas with Lady orchid (*Orchis purpurea*) the species of Annex II to CITES Convention, where there is a risk to negligibly damage this species..

In order to reduce the impact on vegetation cover and habitats on the site preparation and construction stage, borders of work sites and movement roads should be adhered to. Strict adherence to measures defined for avoidance/mitigation of impact on air (dust, exhaust), soil and aquatic environment is required (additional information is provided in the plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Visual observation of the vegetation cover will be required in direct vicinity of the area.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat on the Tunnel #1 north portal site can be assessed as medium.

	Receptor Sensitivity	Likelihood	Impact Significance
Vegetation Cover/habitat	Medium	High	Medium

Assessment Methodology is given in Annex 1

During work process, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

2.2.6 Camp #2, Concrete Plant #2

Location: in the west from the Tunnel #1 north portal, on Didveli Plateau area, on the left bank of Tetri Aragvi river.

UTM coordinates of the site center: 38T 461260.43 mE 4697665.11 mN

There are small forest groves in the form of islands on the site, where following species dominate among other plants: Oriental hornbeam (*Carpinus orientalis*) and Goat willow (*Salix caspica*). Yellow azalea (*Rhododendron flavum*), common hazel (*Corylus avellana*), Cherry plum (*Prunus divaricata*), Bird cherry (*Cerasus silvestris*) are distributed. Mature and middle age trees of wild pear (*Pyrus caucasica*) and Caucasus apple (*Malus orientalis*) should be distinguished.

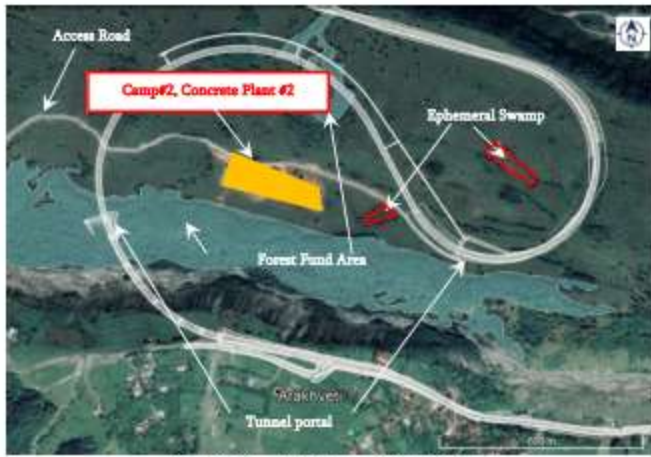


Figure 8. Camp#2, Concrete Plant #2 Area



Picture 6. General Views of Camp #2 and Concrete Plant #2 Site

The area is identical to Tunnel #1 North portal site.

Due to above-mentioned ephemeral swamps, the site can be considered as of medium sensitivity.

On the basis of field observation and information analysis, no need for additional specific mitigation measure development was revealed, except fencing of ephemeral swamp and implementation of standard mitigation measures. However, it is recommended to fence the areas with Lady orchid (*Orchis purpurea*) the species of Annex II to CITES Convention, where there is a risk to negligibly damage this species.

In order to reduce the impact on vegetation cover and habitats on the site preparation and construction stage, borders of work sites and movement roads should be adhered to. Strict adherence to measures defined for avoidance/mitigation of impact on air (dust, exhaust), soil and aquatic environment is required (additional information is provided in the plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Visual observation of the vegetation cover will be required in direct vicinity of the area.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat on the Camp #2 and concrete plant #2, with consideration of arrangement of Tunnel #1 portal and access road in the same zone, can be assessed as medium.

	Receptor Sensitivity	Likelihood	Impact Significance
Vegetation Cover/habitat	Medium	High	Medium

Assessment Methodology is given in Annex 1

During work process, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

2.2.7 Spoil Ground on Plateau

Location: Didveli Plateau, within the north tunnel portal zone, adjacent to the project roadbed, on the left bank of Tetri Aragvi river.

UTM coordinates of the site center: 38T 462065.707mE; 4697642.339mN



Figure 9. Didveli Plateau Spoil Ground

Vegetation cover on the site is analogous to that on the Camp #2, Concrete plant #2 and Tunnel #1 North Portal.

Vegetation is represented by a combination of herbs of anthropogenic origin (E5.1- Anthropogenic herb stands) and subalpine-deciduous shrubs. Ephemeral wetlands are observed in the vicinity of the portal (D4.1 - Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks).

The nearest wetland to the spoil ground is in 87 m. These sections must be protected. Their area should be fenced in order to avoid their damage during work implementation and vehicle movement.

The site can be considered as of medium sensitivity.

In order to reduce the impact on vegetation cover and habitats on the site preparation and construction stage, borders of work sites and movement roads should be adhered to. Strict adherence to measures defined for avoidance/mitigation of impact on air (dust, exhaust), soil and aquatic environment is required (additional information is provided in the plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Visual observation of the vegetation cover will be required in direct vicinity of the area.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat of plateau spoil ground can be assessed as medium.

	Receptor Sensitivity	Likelihood	Impact Significance
Vegetation Cover/habitat	Medium	High	Medium

Assessment Methodology is given in Annex 1

During work process, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

2.2.8 Topsoil Disposal Site

Location: Didveli Plateau area, in the east from the project roadbed, on the left bank of Tetri Aragvi River.

UTM coordinates of the site center: 38T 462230.48 mE 4697824.34 mN

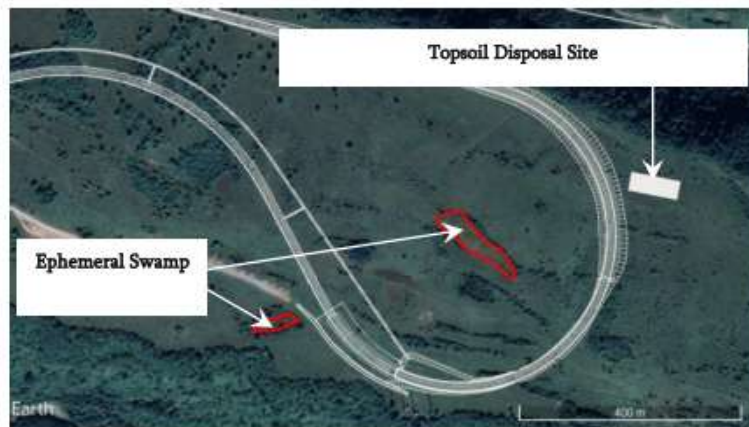


Figure 10. Topsoil Disposal Site (Didveli Plateau)

Vegetation cover of the site is analogous to that on Camp #2, Concrete Plant #2, Tunnel #1 North Portal and Spoil Ground.

Vegetation is represented by a combination of herbs of anthropogenic origin (E5.1- Anthropogenic herb stands) and subalpine-deciduous shrubs. Ephemeral wetlands are observed in the vicinity of the portal (D4.1 - Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks).

The nearest wetland to the spoil ground is in 247 m. These sections must be protected. Their area should be fenced in order to avoid their damage during work implementation and vehicle movement.

The site can be considered as of medium sensitivity.

In order to reduce the impact on vegetation cover and habitats on the site preparation and construction stage, borders of work sites and movement roads should be adhered to. Strict adherence to measures defined for avoidance/mitigation of impact on air (dust, exhaust), soil and aquatic environment is required (additional information is provided in the plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Periodic visual observation of the vegetation cover in direct vicinity of the area will be required.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat on topsoil disposal site can be assessed as medium.

	Receptor Sensitivity	Likelihood	Impact Significance
Vegetation Cover/habitat	Medium	High	Medium

Assessment Methodology is given in Annex 1

During work process, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

2.2.9 Camp #3, Concrete Plant #3

Location: Concrete plant #3, Camp #3 are located on the area of Benianbegoni village, in the vicinity of the project facility.

Approximate UTM coordinates of the site center: 38T 461585.62 mE; 4701021.30 mN



Figure 11. Camp#3, Concrete Plant #3 Area

camp #3 and concrete plant 3 location area represents the site with anthropogenic herbs (E5.1 - Anthropogenic herb stands).

The **Picture** below shows the view of this section and Table 6 provides the list of main vegetation species composition in the given habitat.



Picture 7. General Views of Camp#3 and Concrete Plant

Table 6. List of main vegetation species composition existing near the Camp #3, Concrete Plant #3

Habitat : E5.1 - Anthropogenic herb stands + subalpine deciduous shrubs

Latin Name	English Name	Conservation Status
<i>Pyrus caucasica</i>	wild pear	-
<i>Lonicera caprifolium</i>	honeysuckle	-
<i>Orchis purpurea</i>	Lady orchid	LC
<i>Urtica dioica</i>	common nettle	LC
<i>Leucanthemum vulgare</i>	Oxeye daisy	-
<i>Taraxacum officinale</i>	Common Dandelion	LC
<i>Rhododendron luteum</i>	Azalea	LC

IUCN – International union for the Conservation of Nature; LC – Least Concern

The area of Camp #3, Concrete Plant #3 can be assessed as having medium sensitivity.

Lady orchid (*Orchis purpurea*), species protected under Annex II to CITES Convention is recorded in large number within Benianbegoni/Gomurni zone. It is recommended to fence the sections with this species concentration, where there is a risk of negligibly damage this species.

On the basis of field observation and information analysis, no need for additional specific mitigation measure development was revealed, except implementation of standard mitigation measures.

In order to reduce the impact on vegetation cover and habitats on the site preparation and construction stage, borders of work sites and movement roads should be adhered to. Strict adherence to measures defined for avoidance/mitigation of impact on air (dust, exhaust), soil and aquatic environment is required (additional information is provided in the plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Visual observation of the vegetation cover will be required in direct vicinity of the area.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat on the Camp #3 and concrete plant #3 site, can be assessed as medium.

	Receptor Sensitivity	Likelihood	Impact Significance
Vegetation Cover/habitat	Medium	High	Medium

Assessment Methodology is given in Annex 1

During work process, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

2.2.10 Temporary Access Roads

For the project needs, at the initial stage of the project implementation, three temporary access roads will be used (see Figure 12):

- Road 1 – Bedoni village bypass road;
- Road 2 – Section for access to Tunnel #1 south portal;
- Road 3 – Sections for access to Didveli Plateau Camp #2/Concrete Plant #2 and Tunnel #1 North portal.

Improvement of the existing local roads is planned, which will be used during construction.

Access road sections go through the following habitats:

- Road 1 - sparsely vegetated river gravel banks (C3.55)
- Road 2 - Riverine Fraxinus - Alnus woodland, wet at high but not at low water (G1.21) and Ravine and slope woodland (G1.A4)
- Road 3 - E5.1- Anthropogenic herb stands.



Figure 12. Temporary Access Road

Photo-material reflecting the temporary access road is given in **Picture 8**.





Picture 8. Temporary Access Road

- Access Road 1 – the selected direction runs along the right bank of Tetri Aragvi river, crosses the river and bypassing Bedoni village goes up until joining the existing local road in the valley.
- Access Road 2- it also runs along the riverbed, one branch of it goes up to Didveli plateau until Tunnel #1 south portal.
- Access Road 3 – it starts from Seturni village, from the existing road going to the east. The project envisages improvement of this road and usage for the project needs.

Road 1. On the project site, on silty, sandy and cobbled lowland, Salt cedar (*Tamarix*) and willow (*Salix arbuscula*), various types of clover species (*Trifolium* sp.), Sosnowsky's hogweed (*Heracleum sosnowskyi*), Thistles (*Cirsium* sp.), Dwarf nettle (*Urtica urens*), Monk's-rhubarb (*Rumex alpinus*), Puzzlegrass (*Equisetum*), European water-plantain (*Alisma plantago-aquatica*), Large-sepaled Primula (*Primula macrocalyx*), etc. are recorded. In riparian valley, on wet slopes there are Butterbur (*Petasites georgicus*), large-leaved pachyphragma (*Pachyphragma macrophyllum*), Dwarf nettle (*Urtica urens*). Habitat has low sensitivity. By rough assessment, about 0,02% of ash-alder forest habitat within 8 km long site along the left bank of Tetri Aragvi river gets within the direct impact zone of the project.

Road 2. Forested (Forest Fund) zone is revealed on the section for access to plateau. Following species gets under direct impact on the mentioned site: common hornbeam (*Carpinus caucasica*), common hazel (*Corylus avellana*), grey alder (*Alnus incana*), Hawthorn (*Crataegus kyrtostyla*). Unit specimens of Litwinow Birch (*Betula litwinowii*), European ash (*Fraxinus americana*), maple (*Acer campestre*), Oriental beech (*Fagus*), willow (*Salix*). In total, 647 trees are subject to cutting on the access section to plateau. The dominant species (57% of the total number of impacted plants and trees) is alder. Habitat is characterized as of medium sensitivity. Part of the vegetation cover has already been removed in the portal zone. From total plant projection coverage, about 5-10% is encroached within the zone of access road and Tunnel #1 south portal. [It should be noted that vegetation cover, timber resources abstracted from this habitat should be timely removed from the site]

On construction stage, the impact on vegetation cover and habitat can be considered as medium. It should be noted that the access road is temporary. After completion of works, damaged sections will be reinstated. Specific measures will be defined after completion of works and will be reflected in Recultivation Plan [the plan will be submitted to the MoEPA for approval].

Road 3. Characterization of vegetation cover presented on plateau (Didveli plateau access road section) is given in the description of Camp #2, concrete plant #2 and Tunnel #1 north portal sites (see subpar. 2.25 and 2.26). Habitat is considered as of medium sensitivity. During road arrangement, section of existing local road is used.

During arrangement and operation of access roads, in order to reduce the impact on vegetation cover and habitats, borders of work sites and movement roads should be adhered to. Strict adherence to measures defined for avoidance/mitigation of impact on air (dust, exhaust), soil and aquatic environment is required (additional information is provided in the plans, developed within the framework of the Site Environmental Management Plan), monitoring and control over the performance of the requirements. Visual observation of the vegetation cover will be required in direct vicinity of the area.

On the basis of conducted preconstruction survey, the impact on vegetation cover/habitat during arrangement and operation of access roads can be assessed as :

Vegetation Cover/habitat	Receptor Sensitivity	Likelihood	Impact Significance
Access road 1	Low	High	Low
Access road 2	Medium	High	Medium
Access road 3	Medium	High	Medium

Assessment Methodology is given in Annex 1

During work process, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

3 Fauna Survey of the Project Territory

3.1 Survey Methodology

The aim of a zoological survey was to describe and characterize of animals' species composition distributed through the project corridor, at the sites of temporary use or auxiliary infrastructure and adjacent zone, as well as, to detect sensitive sites and/or species, evaluation of the impact risk and to determine additional mitigation measures, if necessary.

Desktop and field surveys were conducted. The project related survey data and information published in the scientific literature were processed and analyzed.

Transect method was used. The field survey methodology included visual observation to detect presence of animals, holes/hollows/dens/nests, footprints and signs of their vitality, photographing and identification by voice. The project corridor, sites of temporary infrastructure, spoil grounds and their adjacent areas were investigated. The study/inspection corridor width used to vary according to the terrain type and basically was 250-300 m.

Birds' survey was carried out in optimal, sunny and windless weather. Following was used during the field survey:

- On foot observation method by using of a binocular that means walking through each site and studying ("transects points" method is used through the vast areas during the breeding season to register the birds species).
- Direct counting method – direct counting of birds. This method is available if a vantage point is selected and all birds are counted by a binocular or a telescope. This method is especially used during counting of birds through an open area. [It is better to divide the area first and then register the birds one by one in the divided areas]. Elevated sites – vantage points were selected from where it was possible to observe the study and adjacent territories and better identification of birds. Relevant photographs were collected in parallel with the visual observations. The number of vantage points was determined according to the area of the study territory.
- Identification of sounds;
- Counting of nests.

During the survey, species were observed that flew suddenly and accordingly, their photographing was impossible; however, attention was drawn to those signs, based on which this or that species was identified. They also were determined by the birds guide books (Birds of Europe: Second Edition by Lars Svensson and Dan Zetterström and Collins Bird Guide. 2Nd Edition).

Ichthyologic survey included obtaining-processing of the existing data, test fishing and interview method.

Invertebrates were visually observed, the survey methodology included:

- Catching and identification of insects;

- Turning over stones and soil layer;
- Inspection of plants and plant residues;
- Photographing.

Used tools

- Photo cameras - Canon PowerShot SX50 HS, Canon PowerShot SX60 HS
- Garmin montana 680 GPS და Garmin eTrex 30x
- 8x42 binocular Opticron Trailfinder 3 WP
- Bats detector Anabat Walkabout Bat Detector (Version 1.3)

3.2 Fauna Survey Results

The study area was divided into 3 sections during the survey:

- Section I – Sepe village – Kvesheti-Arakhveti site, which covers the territories of the Concreta Plant #1, spoil ground, camp #1 and the south portal of the Tunnel #1;
- Section II – access roads from Seturni village to Zakatkari village, territory of the Camp #2 and Concreta Plant #2, plateau spoil ground and a disposal site of the fertile soil layer;
- Section III - Khidistskali river valley to Tskere village, territories of the Camp # 3, Concrete Plant #3.

Species in the project zone

Species of mammals - 35, bats – up to 20, birds – up to 180, reptiles – 10, amphibians – 6, mollusks and various invertebrates – more than 500 species were identified through the project corridor and its adjacent areas.

Mammals. Considering the existing sources and habitats' peculiarities, the list of mammal species according to the habitat number and studied site in the project zone (Kvesheti-Tskere site) are given in Tables 7 and 8.

Table 7. Mammal species (Kvesheti-Tskere site, alphabetically sorted by Latin name)

#	English name	Latin name	Protection status		Habitat, where a species can occur	Site
			IUCN Red List	Red List of Georgia		
1	Eastern broad-toothed field mouse	<i>Apodemus mystacinus</i>	LC	-	2,3,4	I, II, III
2	European water vole	<i>Arvicola terrestris</i>	LC	-	1,2,3,4,5	I, II, III
3	Golden jackal	<i>Canis aureus</i>	LC	-	1,2,3,6	I, II, III
4	Gray wolf	<i>Canis lupus</i>		-	1,2,3,4,5,6	I, II, III
5	Roe deer	<i>Capreolus capreolus</i>	LC	-	4,6	I, II
6	Robert's snow vole	<i>Chionomys roberti</i>	LC	-	2,3,4	I, II, III
7	Gueldenstaedt's shrew	<i>Crocidura gueldenstaedti</i>	LC	-	2,3,4	I, II, III
8	Bicolored shrew	<i>Crocidura leucodon</i>	LC	-	2,3,4	I, II, III
9	Forest dormouse	<i>Dryomys nitedula</i>	LC	-	2,6	I, II
10	Southern white-breasted hedgehog	<i>Erinaceus concolor</i>	LC	-	1,2,3,4,6	I, II, III
11	Wildcat	<i>Felis silvestris</i>		-	1,2,3,4,5,6	I, II, III
12	Edible dormouse	<i>Glis glis</i>	LC	LC	2,6	I, II
13	European hare	<i>Lepus europeus</i>	LC	-	2,3,4,6	I, II, III
14	Otter	<i>Lutra lutra</i>	NT	VU	1,4,5,6	I, II, III
15	Lynx	<i>Lynx lynx</i>	LC	CR	1,2,3,4,5,6	I, II, III
16	Beech marten	<i>Martes foina</i>	LC	-	1,2,3,4,5,6	I, II, III
17	European pine marten	<i>Martes martes</i>	LC	-	1,2,3,4,5,6	I, II, III
18	European badger	<i>Meles meles</i>	LC	-	1,2,3,4,6	I, II, III
19	Common vole	<i>Microtus arvalis</i>	LC	-	2,3,4	I, II, III
20	Social vole	<i>Microtus socialis</i>	LC	-	2,3,4	I, II, III

21	House mouse	<i>Mus musculus</i>	LC	-	2,3,4	I, II, III
22	Least weasel	<i>Mustela nivalis</i>	LC	-	1,2,3,4	I, II, III
23	Brown rat	<i>Rattus norvegicus</i>	LC	-	2,3,4	I, II, III
24	Black rat	<i>Rattus rattus</i>	LC	-	2,3,4	I, II, III
25	Caucasian squirrel	<i>Sciurus anomalus</i>	LC	VU	6	II
26	Red squirrel	<i>Sciurus vulgaris</i>	LC	-	2,6	I, II
27	Caucasian shrew	<i>Sorex satunini</i>	LC	-	2,3,4	I, II, III
28	Caucasian pygmy shrew	<i>Sorex volnuchini</i>	LC	-	2,3,4	I, II, III
29	Wild boar	<i>Sus scopa</i>	LC	-	4,6	I, II, III
30	Ural field mouse	<i>Sylvaemus uralensis</i>	LC	-	2,3,4	I, II, III
31	Caucasian mole	<i>Talpa caucasica</i>	LC	-	1,2,3,4,6	I, II, III
32	Levant mole	<i>Talpa levantis</i>	LC	-	1,2,3,4,6	I, II, III
33	Major's pine vole	<i>Terricola majori</i>	LC	-	2,3,4	I, II, III
34	Brown bear	<i>Ursus arctos</i>	LC	EN	1,3,4,5,6	I, II, III
35	Red fox	<i>Vulpes vulpes</i>	LC	-	1,2,3,4,5,6	I, II, III

IUCN – International Union for Conservation of Nature
CR = Critically Endangered taxon; EN = Endangered; VU = Vulnerable; NT = Near threatened; LC = Least Concern; DD = Data Deficient.
Note: Habitat numbering is given according to the list presented on page 1

Besides the listed species, Chamois (*Rupicapra rupicapra*, Red List of Georgia - EN) can occur through the project zone during heavy snowfall.

Based on the literary sources and previous field surveys, 17 species of bats are distributed through the study corridor and its adjacent territories. All mentioned species can occur through the project zone at a certain time.

Table 8. Bat species (Kvesheti-Tskere site, alphabetically sorted by Latin name)

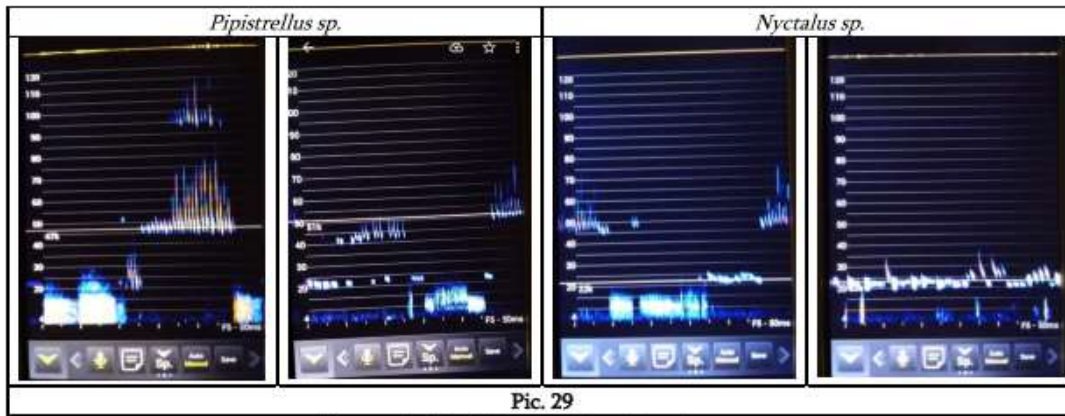
#	English name	Latin name	Protection status	
			IUCN Red List	Red List of Georgia
1	<i>Eptesicus nilssonii</i>	Northern bat	LC	-
2	<i>Eptesicus serotinus</i>	Serotine bat	LC	-
3	<i>Hypsugo savii</i>	Savi's pipistrelle	LC	-
4	<i>Myotis blythii</i>	Lesser mouse-eared bat	LC (Global)/NT (Europe)	-
5	<i>Myotis mystacinus</i>	Whiskered bat	LC	-
6	<i>Myotis nattereri</i>	Natterer's bat	LC	-
7	<i>Nyctalus lasiopterus</i>	Greater noctule bat	VU	-
8	<i>Nyctalus leisleri</i>	Lesser noctule	LC	-
9	<i>Nyctalus noctula</i>	Common noctule	LC	-
10	<i>Pipistrellus kuhlii</i>	Kuhl's pipistrelle	LC	-
11	<i>Pipistrellus nathusii</i>	Nathusius' pipistrelle	LC	-
12	<i>Pipistrellus pipistrellus</i>	Common pipistrelle	LC	-
13	<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	LC	-
14	<i>Plecotus auratus</i>	Brown long-eared bat	LC	-
15	<i>Rhinolophus ferrumequinum</i>	Greater horseshoe bat	LC	-
16	<i>Rhinolophus hipposideros</i>	Lesser horseshoe bat	LC	-
17	<i>Vespertilio murinus</i>	Parti-coloured bat	LC	-

IUCN – International Union for Conservation of Nature
LC = Least Concern

Note: all bat species in Georgia are included in the Annex II of Bon Convention and protected by EUROBATs Agreement. According to this agreement, Georgia is mandatory to protect all species observed within the project area and in its vicinities.

Note: Habitat numbering is given according to the list presented on page 1

Note: only representatives of *Pipistrellus* and *Nyctalu* genus (none of the species of these genus are protected by the Red List of Georgia, but all of them are protected by Bern and Bon Conventions) were observed during the field survey carried out at the adjacent areas of the construction camps/concrete plants (concrete plant #1, camp#1, camp-concrete plant #2, camp-concrete plant #3), tunnel portal (portals, plateau spoil ground and a disposal area of fertile soil layer).



Picture 9. Signal detected by a bats detector

Reptiles. The study region is not distinguished by diversity and endemism of reptiles. Presence/occur of 10 species of reptiles is expected in the project zone.

Table 9. Reptile species (Kvesheti-Tskere site, alphabetically sorted by Latin name)

#	English name	Latin name	Protection status		Habitat, where a species can occur	Site
			IUCN Red List	Red List of Georgia		
1	Slow Worm	<i>Anguis colchica</i>	LC		1,2,3,4,6	I, II, III
2	Smooth snake	<i>Coronela austriaca</i>	LC	-	1,2,3,4,5,6	I, II, III
3	Caucasian Lizard	<i>Darevskia caucasica</i>		-	1,5,6	I, II, III
4	Artwin Lizard	<i>Darevskia derjugini</i>	NT	-	1,5,6	I, II, III
5	Georgian lizard	<i>Darevskia rudis</i>	LC	-	1,5,6	I, II, III
6	Medium lizard	<i>Lacerta media</i>	LC	-	1,2,3,4	I, II, III
7	Caucasus emerald lizard	<i>Lacerta strigata</i>	LC	-	1,2,3,4	I, II, III
8	Grass snake	<i>Natrix natrix</i>	LC	-	1,2,3,4,5,6	I, II, III
9	Dice snake	<i>Natrix tessellata</i>	LC	-	1,4,5,6	I, II, III
10	Dinnik's viper	<i>Vipera dinniki</i>	EN	EN	1,2,3,4,5,6	I, II, III

IUCN – International Union for Conservation of Nature
 EN = Endangered; NT = Near Threatened; LC = Least Concern.
 Note: Habitat numbering is given according to the list presented on page 1

From the listed species only one is protected by the Georgian and international Red Lists (IUCN Red List of Threatened Species). It should be noted that although all habitats within the project zone is acceptable for these species, their occurrence at the working sites is not expected, as usual, they avoid territories being under the anthropogenic loading.

Amphibians. The study area is not distinguished by the species diversity, 6 species of amphibians are distributed in Georgia. The list of species along with the appropriate habitat number in the project zone is provided below.

Table 10. Amphibian species (Kvesheti-Tskere site, alphabetically sorted by Latin name)

#	English name	Latin name	Protection status		Habitat, where a species can occur	Site
			IUCN Red List	Georgian Red List		
1	Caucasian toad *	<i>Bufo verrucosissimus</i>	NT	-	1,2,3,5,6	I, II, III
2	European green toad	<i>Bufo viridis</i>	LC	-	2,3,4	I, II, III
3	European green toad	<i>Hyla arborea</i>	LC	-	1,2,3,4,5,6	I, II, III
4	Southern banded newt	<i>Ommatotriton vittatus</i>	LC	-	1,4,5	I, II, III
5	Marsh frog	<i>Pelophylax ridibundus</i>	LC	-	1,2,3,4,5,6	I, II, III
6	Long-legged wood frog	<i>Rana macrocnemis</i>	LC	-	1,2,3,4,5,6	I, II, III

* regional endemic species
 IUCN – International Union for Conservation of Nature
 NT = Near Threatened; LC = Least Concern.
 Habitat numbering is given according to the list presented on page 1

Birds. According to various sources, from 403 species of birds distributed in Georgia, about 180 species are detected within the project territory. Out of them, 35 species were observed during the field survey. Majority of observed species are related to shrubs, cliffs, valleys and water. It refers to both resident and nesting birds.

Those species, which can be found in almost all sites, are as follows: Common buzzard, great tit, coal tit, Eurasian blue tit, common chaffinch, Eurasian wren, white wagtail, red-backed shrike, northern wheatear, common blackbird and house sparrow.

According to their presence, birds of the study area are distributed as follows:

- From nesting species 38 ones are observed there throughout a year
- 53 species are migrant, which nest in this territory in summer;
- Up to 170 species are observed during the spring and autumn migrations (regularly or irregularly); among them at least 60 species are observed during the breeding period through the study area, 77 species are observed only during the migration, while others can be observed even in winter.

Potential nesting and favorable feeding areas for large birds of prey are observed within the project area. However, none of the species and their active nests were detected during the survey.

As it is known, migratory routes of Europe-Africa and Europe-Asia birds pass through the territory of Georgia, which are important for many migratory species. Along these routes, birds move from nesting areas to wintering areas. Georgia is an important wintering area for waterfowls and shorebirds, such as passerines and birds of prey. From them, birds of prey and passerines use this territory for resting and wintering.

Migration routes of the migratory birds follow the natural "guiding" lines on the territory of Georgia, such as the Black Sea coast, valleys of large rivers (Rioni, Mtkvari and their tributaries), mountain systems, in particular, the Greater Caucasus and its branches.

Migration of birds takes place throughout a year on the territory of Georgia. However, two migration periods are singled out – spring and autumn. Birds follow the river valleys and the Black Sea coast. Four waves are noteworthy during the spring migration: from the beginning to middle of March, second half of March, from the first of April to the third week of April, from the end of April to the second week of May.

The autumn migration is longer and more active than spring. The first migrants of autumn appear from the beginning of August, migration of this season completed at the end of November. Three waves are noteworthy during the autumn migration: beginning of September, from the second week of September to the first week of October and the end of October. The most abundant flocks are passerines (Passeriformes), shorebirds (Charadriiformes), falcons (Falconiformes), waterfowls (Anseriformes) and pigeons (Columbiformes).

One of the migration routes is Jvari Pass through the project territory, which is used by many birds of prey, waterfowls and passerines. Following species are frequently observed through this migration corridor: black kite (*Milvus migrans*), lesser spotted eagle (*Clanga pomarina*), European honey buzzard (*Pernis apivorus*), steppe eagle (*Aquila nipalensis*), western marsh harrier (*Circus aeruginosus*), Montagu's harrier (*Circus pygargus*) and pallid harrier (*Circus macrourus*). All of them fly from the eastern Europe and northern Siberia to African wintering grounds. This area is especially important for migratory birds in winter, when the meteorological conditions in the Russian part of the Caucasus are bad - at this time a large number of birds find shelter and food in this area. It should be noted that the Khadistskali valley is not considered as significant migration corridor as the Jvari Pass for the migratory birds.

The project territory (studied sites) are not the Important Bird Areas (IBA) and/or the Special Protected Area for birds, (SPA), their function is to protect and monitor the birds populations nesting in Georgia. The project area does not get within the borders of the Emerald Network Site (Kazbegi GE0000009) and the territory of Kazbegi National Park, however, it is located in the same region. (Note: maps of these territories along with the studied section are provided in the Annex 3).

Table 11. Main birds species (Kvesheti-Takere site, alphabetically sorted by Latin name)

#	English name	Scientific name	Migration seasonality	Protection status		Habitat, where a species can occur
				IUCN Red List	Red List of Georgia	
1	Levant Sparrowhawk	<i>Accipiter brevipes</i>	BB,M	LC	VU	1,2,3,4,5,6
2	Northern Goshawk	<i>Accipiter gentilis</i>	M	LC	-	1,2,3,4,5,6
3	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	YR-R	LC	-	1,2,3,4,5,6
4	Common Sandpiper	<i>Actitis hypoleucos</i>	BB	LC	-	1,4,5
5	Long-tailed Tit	<i>Aegithalos caedatus</i>	YR-R	LC	-	1,2,3,4,5,6
6	Cinereous Vulture	<i>Aegypius monachus</i>	YR-V	NT	EN	2,4,6
7	Eurasian Skylark	<i>Alauda arvensis</i>	M	LC	-	1,2,3,4
8	Common Kingfisher	<i>Alcedo atthis</i>	YR-R, M	LC	-	1,4,5
9	Red-Throated Pipit	<i>Anthus cervinus</i>	M	LC	-	1,2,3,4,5,6
10	Tree Pipit	<i>Anthus trivialis</i>	BB	LC	-	1,2,4,5,6
11	Common Swift	<i>Apus apus</i>	BB	LC	-	1,2,3
12	Golden Eagle	<i>Aquila chrysaetos</i>	YR-R	LC	VU	2,4,6
13	Imperial Eagle	<i>Aquila heliaca</i>	BB, M	VU	VU	2,4,6
14	Steppe Eagle	<i>Aquila nipalensis</i>	M	EN	-	2,4,6
15	Eurasian Eagle Owl	<i>Bubo bubo</i>	M	LC	-	1,5,6
16	Common Buzzard	<i>Buteo buteo</i>	YR-R, M	LC	-	1,2,3,4,5,6
17	Long-legged Buzzard	<i>Buteo rufinus</i>	YR-R, M	LC	VU	1,2,3,4,5,6
18	European Goldfinch	<i>Carduelis carduelis</i>	YR-R	LC	-	1,2,3,4,5,6
19	European Greenfinch	<i>Carduelis chloris</i>	YR-R	LC	-	1,2,3,4,5,6
20	Common Rosefinch	<i>Carpodacus erythrinus</i>	BB	LC	-	4
21	Great Rosefinch	<i>Carpodacus rubicilla</i>	YR-R	LC	VU	4,6
22	Eurasian Treecreeper	<i>Certhia familiaris</i>	M	LC	-	1,5,6
23	Little Ringed Plover	<i>Charadrius dubius</i>	YR-R, M	LC	-	1,4,5
24	White Stork	<i>Ciconia ciconia</i>	YR-R	LC	VU	1,2,3,4,5
25	Black Stork	<i>Ciconia nigra</i>	M	LC	VU	1,2,3,4,5
26	White-throated Dipper	<i>Cinclus cinclus</i>	YR-R	LC	-	1,4,5,6
27	Greater Spotted Eagle	<i>Clanga clanga</i>	WV, M	VU	VU	2,4,6
28	Lesser Spotted Eagle	<i>Clanga pomarina</i>	BB, M	LC	-	2,4,6
29	Rock Dove	<i>Columba livia</i>	YR-V	LC	-	1,2,3,4,5
30	Stock Dove	<i>Columba oenas</i>	M	LC	-	1,2,3,4,5
31	Columba palumbus	<i>Columba palumbus</i>	M	LC	-	1,2,3,5

32	Common Raven	<i>Corvus corax</i>	YR-V	LC	-	1,2,3,4,5,6
33	Hooded Crow	<i>Corvus corone</i>	YR-R	LC	-	1,2,3,4,5,6
34	Common Quail	<i>Coturnix coturnix</i>	BB	LC	-	2,3
35	Corncrake	<i>Crex crex</i>	BB	LC	-	1,4,5
36	Common Cuckoo	<i>Cuculus canorus</i>	BB	LC	-	1,2,3,4,5,6
37	Northern House Martin	<i>Delichon urbicum</i>	YR-V	LC	-	1,2,3,4
38	White-backed Woodpecker	<i>Dendrocopos leucotos</i>	YR-R	LC	-	1,2,5,6
39	Greater Spotted Woodpecker	<i>Dendrocopos major</i>	YR-R	LC	-	1,2,5,6
40	Lesser Spotted Woodpecker	<i>Dryobates minor</i>	YR-R	LC	-	1,2,5,6
41	Rock Bunting	<i>Emberiza cia</i>	YR-R	LC	-	1,2,3,4,5
42	European Robin	<i>Eritacus rubecula</i>	YR-R	LC	-	1,2,3,4,5,6
43	Lanner Falcon	<i>Falco tinnunculus</i>	YR-R, M	LC	VU	1,2,3,4
44	Merlin	<i>Falco columbarius</i>	M	LC	-	1,2,3,4,5
45	Ergrine Falcon	<i>Falco peregrinus</i>	YR-R, M	LC	-	1,2,3,4
46	Common Kestrel	<i>Falco tinnunculus</i>	M	LC	-	1,2,3,4,5
47	Red-footed Falcon	<i>Falco vespertinus</i>	BB, M	NT	EN	1,2,3,4
48	Eurasian Chaffinch	<i>Fringilla coelebs</i>	YR-R	LC	-	1,2,3,4,5,6
49	Brambling	<i>Fringilla montifringilla</i>	WV	LC	-	1,2,3,4,5,6
50	Brambling	<i>Fringilla montifringilla</i>	WV	LC	-	4,6
51	Crested Lark	<i>Galerida cristata</i>	M	LC	-	1,2,3,4
52	Common Moorhen	<i>Gallinula chloropus</i>	YR-R, M	LC	-	1,4,5
53	Eurasian Jay	<i> Garrulus glandarius</i>	YR-R	LC	-	1,2,3,4,5,6
54	Common Crane	<i>Grus grus</i>	BB, M	LC	EN	1,2,3,4,5
55	Bearded Vulture	<i>Gypaetus barbatus</i>	YR-R	NT	VU	2,4,6
56	Eurasian Griffon Vulture	<i>Gyps fulvus</i>	YR-V	LC	VU	2,4,6
57	White-tailed Eagle	<i>Haliaeetus albicilla</i>	YR-R	LC	EN	2,3,4,5,6
58	Booted Eagle	<i>Hieraaetus pennatus</i>	M	LC	-	3,4,6
59	Booted Warbler	<i>Hippolais caligata</i>	M	LC	-	1,2,3,4,5,6
60	Eurasian Crag martin	<i>Hirundo rupestris</i>	BB	LC	-	1,2,3,4
61	Barn Swallow	<i>Hirundo rustica</i>	BB, M	LC	-	1,2,3,4
62	Little Bittern	<i>Isobrychus minutus</i>	BB, M	LC	-	1,2,3,4,5
63	Eurasian Wryneck	<i>Jynx torquilla</i>	BB	LC	-	1,2,5,6
64	Red-backed Shrike	<i>Lanius collurio</i>	BB, M	LC	-	1,2,3,4,5,6
65	Lesser Grey Shrike	<i>Lanius minor</i>	M	LC	-	1,2,3,4,5
66	Middle Spotted Woodpecker	<i>Leucopicus medius</i>	YR-R	LC	-	1,2,5,6
67	Wood Lark	<i>Lullula arborea</i>	M	LC	-	1,2,3,4

68	Thrush Nightingale	<i>Luscinia luscinia</i>	BB,M	LC	-	1,2,3,4,5,6
69	Common Nightingale	<i>Luscinia megarhynchos</i>	BB	LC	-	1,2,3,4,5,6
70	Corn Bunting	<i>Miliaria calandra</i>	BB	LC	-	1,2,3,4,5
71	Black Kite	<i>Milvus migrans</i>	M	LC	-	1,2,3,4,5,6
72	Rufous-tailed Rock-Thrush	<i>Monticola saxatilis</i>	BB	LC	-	1,5,6
73	White Wagtail	<i>Motacilla alba</i>	YR-R	LC	-	1,2,3,4
74	Grey Wagtail	<i>Motacilla cinerea</i>	M	LC	-	1,2,3,4
75	Yellow Wagtail	<i>Motacilla flava</i>	M	LC	-	1,2,3,4
76	Spotted Flycatcher	<i>Muscicapa striata</i>	BB, M	LC	-	1,2,4,5
77	Egyptian Vulture	<i>Neophanus percnopterus</i>	BB,M	EN	VU	1,2,4,5,6
78	Northern Wheatear	<i>Oenanthe oenanthe</i>	BB, M	LC	-	1,2,4,5
79	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	M	LC	-	1,2,3,4,5,6
80	Eurasian Scops-Owl	<i>Otus scops</i>	BB	LC	-	1,5,6
81	Coal Tit	<i>Parus ater</i>	YR-R	LC	-	1,2,3,4,5,6
82	Blue Tit	<i>Parus caeruleus</i>	YR-R	LC	-	1,2,3,4,5,6
83	Great Tit	<i>Parus major</i>	YR-R	LC	-	1,2,3,4,5,6
84	House Sparrow	<i>Passer domesticus</i>	YR-R	LC	-	1,2,3,4,5,6
85	Tree Sparrow	<i>Passer montanus</i>	M	LC	-	1,2,3,4
86	European Honey-Buzzard	<i>Pernis ptilorhynchus</i>	BB,M	LC	-	1,2,3,4,5,6
87	Rock Sparrow	<i>Petrocinna petronia</i>	BB, M	LC	-	1,5,6
88	Black Redstart	<i>Phoenicurus ochruros</i>	BB	LC	-	1,2,3,4,5,6
89	Common Redstart	<i>Phoenicurus phoenicurus</i>	BB,M	LC	-	1,2,3,4,5,6
90	Common Chiffchaff	<i>Phylloscopus collybita</i>	BB	LC	-	1,2,3,4,5,6
91	Mountain Chiffchaff	<i>Phylloscopus montanus</i>	BB, M	LC	-	4,6
92	Willow Warbler	<i>Phylloscopus trochilus</i>	BB	LC	-	1,2,3,4,5,6
93	Black-billed Magpie	<i>Pica pica</i>	YR-R	LC	-	1,2,3,4,5,6
94	Spotted Crane	<i>Piranga pyraea</i>	YR-R, M	LC	-	1,4,5
95	Hedge Accentor	<i>Prunella modularis</i>	BB	LC	-	1,2,3,4,5,6
96	Yellow-billed Chough	<i>Pyrrhocorax graculus</i>	YR-R	LC	-	1,2,3,4,5,6
97	Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	YR-R	LC	-	1,2,3,4,5,6
98	Common Stonechat	<i>Saxicola torquatus</i>	BB	LC	-	1,2,3,4,5,6
99	Whinchat	<i>Saxicola rubetra</i>	BB	LC	-	1,2,3,4,5,6
100	Blackcap	<i>Sylvia atricapilla</i>	BB	LC	-	1,2,3,4,5,6
101	Common Whitethroat	<i>Sylvia communis</i>	BB,M	LC	-	1,2,3,4,5,6
102	Barred Warbler	<i>Sylvia nisoria</i>	BB	LC	-	1,2,3,4,5,6
103	Caucasian Grouse	<i>Tetrao milkosewiczii</i>	YR-R	NT	VU	4

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104	White-throated Dipper	<i>Troglodytes troglodytes</i>	YR-R	LC	-	1,2,3,4,5,6
105	Eurasian Blackbird	<i>Turdus merula</i>	YR-R	LC	-	1,2,3,4,5,6
106	Song Thrush	<i>Turdus philomelos</i>	M	LC	-	1,2,3,4,5,6
107	Fieldfare	<i>Turdus pilaris</i>	WV,M	LC	-	1,2,3,4,5,6
108	Mistle Thrush	<i>Turdus viscivorus</i>	M	LC	-	1,2,3,4,5,6
109	Common Hoopoe	<i>Upupa epops</i>	M	LC	-	1,2,3,4,5,6

Period of seasonal residence of species within the given area:

YR-R = Year-round resident; breeder, present throughout the year; YR-V = Year-round visitor; non-breeder, present throughout the year; BB = Breeding bird; breeder, only visits the territory for breeding; M = Migrant; bird of passage; present primarily in fall and spring

IUCN - International Union for Conservation of Nature
VU - Vulnerable; NT - Near threatened; LC - Least Concern.

Habitat numbering is given according to the list presented on page 1.

Fish species. The list of species through the project corridor is given in Table 12

Table 12. Fish species through the project zone

#	English name	Latin name	Protection status	
			IUCN Red List	Red List of Georgia
Tetri Aragvi River				
1	Brook trout	<i>Salmo trutta morfa fario</i> Linnaeus, 1758	LC	VU
2	Caucasian scraper	<i>Capoeta capoeta</i> Guldenstadt, 1773	NE	
3	Kura nase	<i>Chondrostoma cyri</i> Kessler, 1877	NE	
4	Caucasian goby	<i>Neogobius (Ponticola) constructor</i> Nordmann, 1840	LC	
5	European chub	<i>Squalius cephalus</i> Linnaeus, 1758) (= <i>Leuciscus cephalus orientalis</i> Nordmann, 1840)	LC	
6	Kura barbell	<i>Barbus lacerta</i> Heckel, 1843	NE	
7	Kura roach	<i>Rutilus rutilus kurensis</i> Berg, 1932		
Khadistskali River				
1	Brook trout	<i>Salmo trutta morfa fario</i> , Linnaeus 1758	LC	VU
2	Kura barbell	<i>Barbus lacerta</i> Heckel, 1843	NE	
3	Mursa	<i>Luciobarbus mursa</i> Guldenstadt, 1773 (= <i>Barbus mursa</i> Guldenstadt, 1773)	NE	
IUCN – International Union for Conservation of Nature VU – Vulnerable; LC = Least Concern. NE = Not Evaluated				

From the species provided in the table, trout and roach were observed in Tetri Aragvi River and trout – in Khadistskali River during the field surveys, as well as at the EIA stage (2018) and during the fishing in the same territory (2017). Significant spawning and feeding areas for these species were not detected in the zone of permanent and temporary infrastructure.

Field survey results according to the sections in the study zone are given below.

3.2.1 Section I

Location: Sepe village – Kvesheti-Arakhveti site comprising the territories of Concrete Plant #1, spoil ground, Camp #1 and the south portal of Tunnel #I.

GPS coordinates of the starting and last points of the section: 38T 465462mE; 4696630mN – 38T 460448mE; 4697435 mN.



Figure 13. Section I (Arrows indicate the starting and last points of the section)

Following habitats are detected within the project corridor of Section I:

- C3.55 - Sparsely vegetated river gravel banks;
- I1 Regularly or recently cultivated agricultural, horticultural and domestic habitats;

- G1.21 - Riverine Fraxinus - Alnus woodland, wet at high but not at low water
- G1.A4 - Ravine and slope woodland

Mammals – during the survey, none of the species except bats were observed, no signs of their vitality were detected as well.

Several sites potentially favorable for the otter were identified within the section:

1. Construction section of a bridge planned on the river Tetri Aragvi (see Figure 14) and
2. Adjacent territory of Khadistskali river confluence (see Figure 15).



Picture 10. Potentially favorable sites for otter

Site 1 gets within the zone of a bridge on Tetri Aragvi River and the access roads. Therefore, noise, vibration due to the works and vehicles movement and possible increased turbidity of water during bridge construction may be a source of concern for the otter in this site.

Otter habitats were not detected during the inspection of the territory in this site. No signs of otter were observed in previous studies for the project. Therefore, it can be assumed that the risk of physical impact on any specimen and/or habitat of the species in this area is not expected.

If we assume the possibility of enter the otter this zone during searching of food, the indirect impact as a result of damage of a food access/feeding site will not be significant. Considering the way of life, the otter uses about 20 km of the river, so a temporary impact on a small site will not affect the species' availability/accessibility of food.

Noise, vibration, change of light background (in case of using lighting in the area), due to the bridge construction, as well as construction works of the tunnel portal, disturbance/impact due to possible water turbidity within the arrangement of the bridge piers will have a temporary and local impact.

Although there is no evidence of presence of the otter in this site (by the data of 2018-2021), it is recommended to re-inspect the area within a 10 m radius of the riverbed before the start of work to detect the presence of dens. If necessary – implementation of mitigation measures. Appropriate recommendations are provided below.

Text box 1: Actions in case of discover of an otter/its habitat

In case of finding of dens, a plan for the works performance should be prepared to manage the specific territories. [the plan will be submitted to an Engineer for the review and approval]. Following measures to be implemented on the territory, according to the plan:

- Marking of the territories, where the otter species will be detected;
- Conduct works in a way that to preserve the otter habitat in a water body and on a bank, where possible;
- Arrangement of artificial dens instead of damaged or disturbed ones;
- Conduct works in the daytime, not to coincide the peak active period (dawn/twilight) of otter;
- Take pollution prevention measures (soil and water), such as - arrangement a temporary surface runoff control system that includes settling basins and drainage ditches, as well as other mitigation measures to reduce impact on soil, water, vegetation cover/flora and fauna;
- Avoid significant changes of illumination. For this purpose, vegetation on the bank should be preserved as far as possible. If necessary, additional plants should be planted along the upper part of the bank to create a protective screen to reduce the impact of illumination;

- Installation of barriers on sensitive sections to prevent casualties caused by traffic accidents (fences should be used where the otter will not be able to squeeze through and it will not occur within the working sites). [Note: The height of the fence poles should be ≥ 1.5 m, the interval between the poles 2 m. The net should be placed on the support wire (welded wire (wire diameter 2.0 mm) - 50x50 mm, 2000 mm wide. The net should be placed 300 mm below the ground and the top should be convex 45 degrees towards the cantilever line, which ensures the net resistance toward the actions of an animal from the river side. On the upper slope of the fence, 10 mm planks (1500 mm width) should be installed on the support poles to create a protective screen.

Prior to the works, personnel should be instructed on safety precautions to be taken while working in the area and their necessity, as well as on prohibition of illegal hunting and fishing.

In case of the otter detection, a constructor must stop the works and contact an ecologist to determine the further actions.

Particular care and caution are required when working on the area under consideration during the breeding season of the otter (it should be noted that the otter mates in February-April. Baby otters are born at different times, in April-May, June-August and frequently even in December-February).

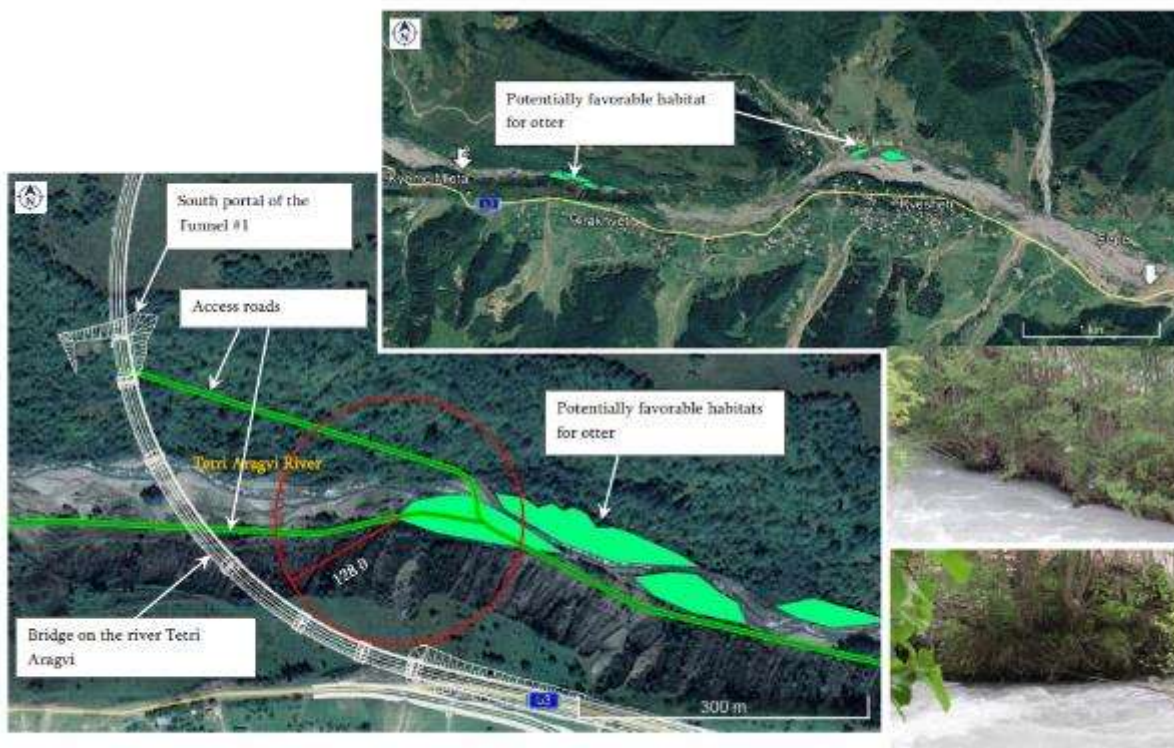


Figure 14. Favorable territories for the otter within the zone of Section I (Site 1)

Site 2 is further away from potential impact sources. The “direct” impact of the construction process on the favorable habitat of otter is not expected at the investigated section.

Similar to the Site 1, presence of otter in this section or adjacent territories was not detected during the detailed inspection of the territory within the field surveys. As well as, otter dens and footprints were not identified like in case of the Site 1.

Direct impact on otter habitats/otter is not expected. However, indirect (e.g. noise, expected deterioration of hunting or/and feeding territories) affect can occur. Therefore, the construction works must be carried out with great cautions and in line with the mitigation measures. Particular care and caution are required during the breeding season of the otter (it should be noted that the otter mates in February-April. Baby otters are born at different times, in April-May, June-August and frequently even in December-February).

Prior to the works, it will be required to re-inspect the sensitive territories provided on the Figure 15. If an otter is found, appropriate mitigation measures should be carried out (see text box 1).



Figure 15. favorable sites for the otter within the zone of Section I – adjacent site of Khadistskali River confluence (Site 2)

Bats – considering the fact that the bats use various roosts – cliff crevices, trees, study section and frequently feed within the riverine zone, for different purposes [transitive; hibernation; mating; reproduction and summer], the study area (Section I), where there is a favorable environment for bats in this regard, was drawn a special attention.

The cliff and forest zone on the slope of Didveli plateau that are the favorable shelter for the bats were studied. The fact that the oak, beech and ash-tree, as well as any hollow tree, layered bark, clefts or a tree surrounded by a thick layer of ivy, can be especially attractive for bats.

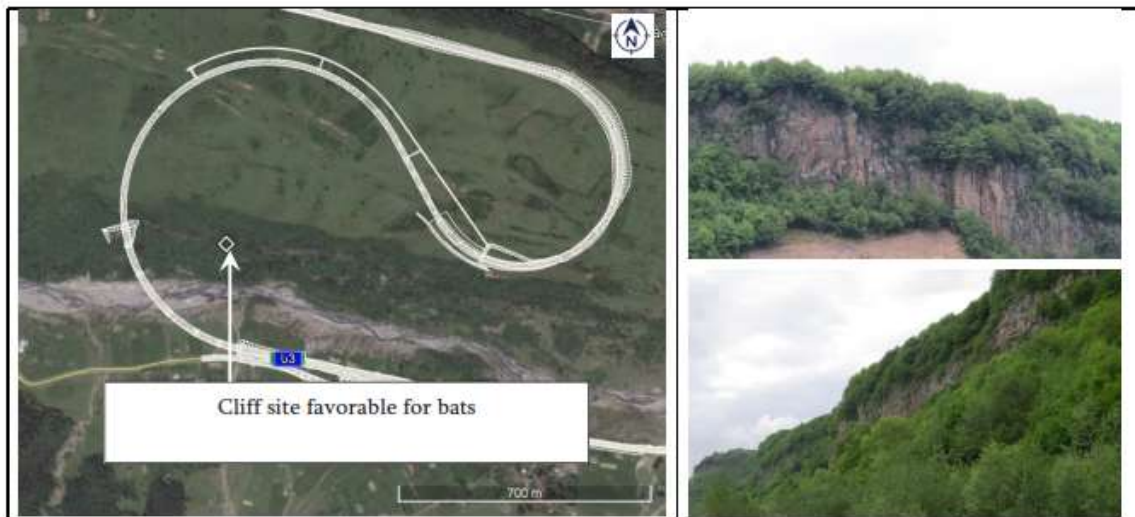


Figure 16. Cliff (E 461064 N 4697538) and forest site favorable for bats within the borders of Section I (Slope of Didveli plateau)

Majority of potentially expected species through the project zone mainly use caves, rocky clefts, old buildings for hibernation, where the temperature is up to 6-12 °C. [majority of bats die below 5 °C]. Besides caves, rocky clefts and buildings, they also find shelter in hollow trees. During the field surveys, favorable cliff massifs were observed in the vicinity of the tunnel south portal, which can be used as a temporary roost by some of the bats species (e.g. lesser horseshoe bat *Rhinolophus hipposideros*, lesser mouse-eared bat *Myotis blythii*).

Representatives of two genus of bats *Pipistrellus* and *Nyctalus* were observed from the expected species (see Table 8) in the project zone, within the borders of Section 1, during the surveys.

In terms of impact on the bats, Section 1 can be considered as a medium sensitive site due to the peculiarities of the habitat. To reduce the expected impact, vegetation removal works are recommended to be carried out from the end of July to the middle of November, by taking into account the sensitive periods for bats. It is better to start the construction of the bridge and the tunneling works from August to the beginning of the winter period. Bats are

Amphibians and reptiles – one species of lizard Caucasian Lizard (*Darevskia caucasica*) was observed during the field survey. None of the amphibians, nor their signs of vitality were detected. No significant, sensitive sites for amphibians and reptiles were found within the boundaries of the studied section.

Birds related to the riverine and rocky habitats were observed. 19 species of birds were registered through the study section (see Table 13).

Several nests of a Eurasian crag martin (*Ptyonoprogne rupestris*) were found within the vulture nest zone on the slope of Didveli plateau.



Picture 11. Nests of Eurasian crag martin (*Ptyonoprogne rupestris*)

A vulture nest locating about 195m from the south portal of the Tunnel #1 and about 160 m from the territory of the Camp #2/Concrete Plant #2 was inspected, potential favorable nesting sites were identified.



Figure 17. Vulture (*Neophron percnopterus*) nest (abandoned)



Picture 12. Potential nesting sites of a vulture

No presence/signs of presence were found in the nests of Eurasian crag martin (*Ptyonoprogne rupestris*) and Egyptian vulture (*Neophron percnopterus*). [according to the existing information, the vulture has not used this nest for the third year and, consequently, the nest is abandoned].

In the zone of Section I, impact on birds will be related to the increased noise, while the impact on the vegetation cover will be caused by the works (removal of vegetation cover) associated with arrangement of working sites and access roads.

Invertebrates. 4 species of invertebrates were observed during the field surveys.

The list of species observed during the field visits within the borders of Section 1 is given in Table 13. Pictures are provided on Picture 13.

Table13. Species observed during the field survey

#	English name	Latin name	IUCN	Red List of Georgia
Birds				
1	Little ringed plover	<i>Charadrius dubius</i>	LC	-
2	Black redstart	<i>Phoenicurus ochruros</i>	LC	-
3	Common redstart	<i>Phoenicurus phoenicurus</i>	LC	-
4	Common chaffinch	<i>Fringilla coelebs</i>	LC	-
5	Eurasian jay	<i>Garrulus glandarius</i>	LC	-
6	Black bird	<i>Turdus merula</i>	LC	-
7	Eurasian sparrowhawk	<i>Accipiter nisus</i>	LC	-
8	Common Buzzard	<i>Buteo buteo</i>	LC	-
9	Red-backed Shrike	<i>Lanius collurio</i>	LC	-
10	Greater Spotted Woodpecker	<i>Dendrocopos major</i>	LC	-
11	White Wagtail	<i>Motacilla alba</i>	LC	-
12	Eurasian blue tit	<i>Cyanistes caeruleus</i>	LC	-
13	Coal Tit	<i>Parus ater</i>	LC	-
14	Great Tit	<i>Parus major</i>	LC	-
15	Yellow Wagtail	<i>Motacilla flava</i>	LC	-
16	Rock Bunting	<i>Emberiza cia</i>	LC	-
17	Long-tailed Tit	<i>Aegithalos caudatus</i>	LC	-
18	Hooded Crow	<i>Corvus corone</i>	LC	-
19	White-throated Dipper	<i>Troglodytes troglodytes</i>	LC	-
Bats				
1	Pipistrelles	<i>Pipistrellus</i>	LC	-
2	Noctule bats	<i>Nyctalus</i>	LC	-
Reptiles				
1	Caucasian Lizard	<i>Darevskia caucasica</i>	LC	-
Invertebrates				
1	Common blue butterfly	<i>Polyommatus icarus</i>	LC	-
2	Beetle	<i>Chlaenius sp</i>	-	-
3	Southern skimmer	<i>Orthetrum brunneum</i>	LC	-
4	Small tortoiseshell	<i>Aglais urticae</i>	LC	-
IUCN - International Union for Conservation of Nature; LC – Least Concern				



Caucasian Lizard *Darevskia caucasica* E 461573 N 4697288



Common blue butterfly *Polyommatus icarus*



Beetle *Chlaenius sp.*



Southern skimmer *Orthetrum brunneum*



Small tortoiseshell *Aglais urticae*



Little Ringed Plover *Charadrius dubius*



Great Tit *Parus major*



Blackbird *Turdus merula*



Black redstart *Phoenicurus ochruros*



White Wagtail *Motacilla alba*

Picture 13. Animal species observed through the territory (Section I)

Conclusion. Impact on species distributed through the project territory and its surroundings will be related to noise, vibration, change of illumination background and possible increase of water turbidity during the works. Physical impact is less expected. Certain indirect impact will take place on that part of ecosystems from where animals receive energy in the form of food; which, to some extent, will increase the background stress for the fauna living in the surrounding habitats of the project area.

According to the possibility and importance of the impact on wildlife during the preparatory and construction phase, the area of Section 1 can be assessed as a medium sensitive for bats and otter and low sensitive – for other mammals and species.

To avoid and mitigate the impact on fauna, borders of the working sites and roads should be adhered during the ongoing actions at Section 1. Thoroughly performance of measures, determined for prevention/mitigation of impact on air (dust, exhaust), soil and water environment is essential (additional information is given in the plans developed for the project under the Environmental Management Plan of the site), as well as setting control over the monitoring and performance of requirements is needed.

Besides the mitigation measures determined for the otter and bats, implementation of standard mitigation measures (see text box 2) of impacts on soil, aquatic environment, vegetation cover, air and wildlife will be necessary at Section 1.

Text box 2

- To carry out mitigation measures for impact on vegetation cover, water, soil and noise;
- Timely removal of cut branches and plants to the approved territory to prevent complicated movement of animals and distribution of pests;
- To prohibit a vehicle's signal (except for safety cases) to prevent animals' disturbance;
- Additional inspection of the territory before the works are launched to detect animals' habitats, birds' nests, hollows and/or holes;
- To enclose of sensitive sites, vegetation adjacent to the working territory to prevent accidental damage during the construction works;
- Considering sensitive periods for the wildlife during planning and implementation of works ². It is prohibited to carry out the works, which can injure, frighten or kill animals. Implementation of mitigation measures and monitoring on sensitive sites is necessary during the works;
- Cutting of trees only after completion of nesting season. If "unused" nests are found through the impact corridor on the preparatory and construction phases, they should be carefully moved in an appropriate

² Wintering and the period until new born bats leave their roosts are considered as sensitive for the bats; for birds – migration and nesting period (from the end of February to the beginning of June); for otters – from April to July.

habitat (this method can be used if a nest is empty and/or there is no egg or nestling. Aim – removed nest can be used by other birds);

- If a nest of a species of the conservation value is observed, special measures should be carried out as a result of consultation with an ornithologist;
- If herpetofauna / amphibian species are found during construction, move them to a similar habitat outside the project area. During the transfer process it is necessary to take into account the recommendations of the relevant profile biologist and observe safety measures;
- Carry out short-term (limited to the construction period) monitoring to control possible impacts on water and water-dependent species and to identify impacts and, if necessary, to determine compensation measures;
- Enclosing of trenches/pits and sites where animals can injure to prevent their fall/damage. For large animals (cattle) a brightly colored ribbon will be used, for small animals - metal, plastic or other shields/fence;
- After completing the work shift, leave a piece of plank or twigs in the trench to allow a small animal to come out;
- Inspection of trenches before backfilling;
- Prohibition of poaching;
- Having a contact with an ornithologist, representatives of the protected areas and the forest department and monitoring by specialists during the works;
- Permanent clean-up of the territory and timely removal of wastes;
- After completion of the works, to restore the disturbed territories by the project (camp, other temporary infrastructure) to its original state (according to the recultivation plan). Recultivation of the spoil ground. Restoration-recultivation means the stages of technical and biological recultivation (restoration of vegetation cover). Only local species of plants will be used during the biological recultivation. Recultivation will be conducted in compliance with the preliminary prepared and approved recultivation plan;
- Personnel instruction/training on the issues of the best construction practice and the environmental issues;
- Monitoring of invasive species and prompt response in case of their detection (without using of chemicals);

Based on the pre-construction survey, impact on the wildlife within the borders of Section 1 can be assessed as follows:

	Receptor sensitivity	Probability	Impact significance
Mammals (except otter and bats)	Low	Medium	Low
Mammals (otter and bats)	High	Medium	Low / Medium
Reptiles and amphibians	Medium	Medium	Low
Birds	High	Medium	Low
Fish fauna	High	Medium	Medium
Invertebrates	Medium	Medium	Low

Assessment methodology is provided in the Annex 1

An environmental officer will control and analyze the state during the working process. Recommendations will be prepared if necessary. Information on the observed state, identified problems (if any) and the ways of response/correction will be submitted to an engineer.

3.2.2 Section II

Location: Access roads from Seturni to Zakatkari village, territory of the Camp #2 and the Concrete Plant #2, the plateau spoil ground and the site of disposal of a fertile soil layer.

GPS coordinates of the starting and last points of the section: 38T 458329mE; 4700235mN – 38T 462630mE; 4697503mN.

Following habitats were identified within Section II of the project corridor:

- E5.1 - Anthropogenic herb stands;
- D4.1 - Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks

Mammals – presence of two genus of bats was confirmed during the survey. None of the expected mammal species, nor signs of their vitality were observed. It should be noted that due to the scarcity of trees in the area of Section II, the observed species of bats could have been found during hunting and crossing the area. Part of the species inhabiting within the project zone, for example. Parti-coloured bat (*Vespertilio murinus*), Serotine bat (*Eptesicus serotinus*), Noctule bats (*Nyctalus leisleri*, *N. noctula*, *N. lasiopterus*) hunt in an open space, accordingly, the plateau zone can be more attractive for them compared to other species. The plateau area is less attractive for the species of *Rhinolophus*, *Myotis*, *Plectus* genus, which avoid the open spaces.

A small lake (38T 459321mE; 4698535mE) and ephemeral wetlands are observed in the plateau area. In this regard, due to the presence of food base (insects) the area creates a favorable environment for bats as well as birds. (See Figure 18).



Figure 18. Section II along with the existing highway (E117), Access road, project infrastructure and sensitive sites (arrows indicate the starting and the last points of the section)

In terms of the impact, the sites of the Camp #2/Concrete Plant #2, spoil ground and fertile soil disposal area are significant, at the same time they are located near the north portal of the Tunnel #1. Considering the planned activities, increased noise and change of illumination background are expected at this site of Section II.

To some extent, change of illumination can have a positive effect on bats – new feeding sites will appear (light attracts insects). While, noise, human and vehicles movement can reduce their accessibility to the ephemeral wetlands zone.

Amphibians – one species - Marsh frog (*Pelophylax ridibundus*) was observed in the zone of Section II during the survey. Other species or signs of their vitality were not detected. Impact on the species can take place during the works in the vicinity of wetlands. This can be a direct impact (e.g. collision of a vehicle), restriction movement or use the territory due to the ongoing works. Enclosing of sensitive sites and monitoring during the works will be needed to prevent the impact. A fence should be arranged in a way that not to restrict accessibility to the territory for fauna species and at the same time, to ensure protection of the ephemeral wetlands sites from mechanical damage during the works/vehicles movement and/or from pollution.

Birds. 19 species of birds were observed within the zone of Section II (see Table 14). Mainly, species related to wetland and shrubby habitats were revealed. Similar to the bats, the impact on birds within the zone of Section II will be related to the increased noise (that can be a hindering factor for the birds using the lake and/or ephemeral wetlands), illumination. Given that there is already a local road near the lake and that the load on this road will not be high for the project needs, a high impact on that area is unlikely.









Physical impact on birds or their nests is not expected. No nests were observed at the working sites, through the corridor of the access road, spoil ground and fertile soil disposal area, as well as within the zone of the portal of Tunnel #1.

Invertebrates. 4 species of invertebrates were observed through the study area.

The list of species found within the borders of Section II during the field visits is given in Table 14. Pictures are presented on Picture 14.

Table 14. Species observed during the field survey

#	English name	Latin name	IUCN	Red List of Georgia
Birds				
1	Common Redstart	<i>Phoenicurus phoenicurus</i>	LC	-
2	Common chaffinch	<i>Fringilla coelebs</i>	LC	-
3	Blackbird	<i>Turdus merula</i>	LC	-
4	Common Buzzard	<i>Buteo buteo</i>	LC	-
5	Red-backed Shrike	<i>Lanius collurio</i>	LC	-
6	Great Tit	<i>Parus major</i>	LC	-
7	Yellow Wagtail	<i>Motacilla flava</i>	LC	-
8	Corn Bunting	<i>Miliaria calandra</i>	LC	-
9	Northern Wheatear	<i>Oenanthe oenanthe</i>	LC	-
10	European Goldfinch	<i>Carduelis carduelis</i>	LC	-
11	European Greenfinch	<i>Carduelis chloris</i>	LC	-
12	European Robin	<i>Erithacus rubecula</i>	LC	-
13	European Honey-Buzzard	<i>Pernis apivorus</i>	LC	-
14	Rock Dove	<i>Columba livia</i>	LC	-
15	Common Cuckoo	<i>Cuculus canorus</i>	LC	-
16	Blackcap	<i>Sylvia atricapilla</i>	LC	-
17	Common Chiffchaff	<i>Phylloscopus collybita</i>	LC	-
18	Whinchat	<i>Saxicola rubetra</i>	LC	-
19	Hedge Accentor	<i>Prunella modularis</i>	LC	-
Bats				
1	Pipistrelles	<i>Pipistrellus</i>	LC	-
2	Noctule bats	<i>Nyctalus</i>	LC	-
Amphibians				
1	Marsh frog	<i>Pelophylax ridibundus</i>	LC	-
Invertebrates				
1	Bush crickets	Tettigoniidae	-	-
2	Grasshopper	<i>Chorthippus sp.</i>	-	-
3	Large grizzled skipper	<i>Pyrgus alveus</i>	LC	-
IUCN - International Union for Conservation of Nature; LC – Least Concern				

	
Red-backed Shrike <i>Lanius collurio</i>	Blackbird <i>Turdus merula</i>
	
Corn Bunting <i>Miliaria calandra</i>	Northern Wheatear <i>Oenanthe oenanthe</i>
	
Larvae of marsh frog <i>Pelophylax ridibundus</i> E 461465 N 4697826	Bush cricket <i>Tettigoniidae</i>
	
Grasshopper <i>Chorthippus sp.</i>	Large grizzled skipper <i>Pyrgus alveus</i>

Picture 14. Animal species observed through the territory (Section II)

Conclusion. Similar to Section I, the impact on species distributed through the project territory and its surroundings will be related to noise, vibration, change of illumination background during the working process.

Physical impact is less expected. Certain indirect impact will take place on that part of ecosystems from where animals receive energy in the form of food; which, to some extent, will increase the background stress for the fauna living in the surrounding habitats of the project area.

According to the possibility and importance of the impact on wildlife during the preparatory and construction phase, the area of Section II can be assessed as medium sensitive.

To avoid and mitigate the impact on fauna, borders of the working sites and roads should be adhered during the ongoing actions at Section II. Thoroughly performance of measures, determined for prevention/mitigation of impact on air (dust, exhaust), soil and water environment is essential (additional information is given in the plans developed for the project under the Environmental Management Plan of the site), as well as setting control over the monitoring and performance of requirements is needed.

Implementation of standard mitigation measures (see text box 2) of impacts on soil, aquatic environment, vegetation cover, air and wildlife will be necessary.

Based on the pre-construction survey, impact on the wildlife within the borders of Section II can be assessed as follows:

	Receptor sensitivity	Probability	Impact significance
Mammals	Low	Medium /low	Low
Reptiles and amphibians	Medium	Medium	Low / Medium
Birds	High	Medium	Medium
Invertebrates	Medium	Medium	Low

Assessment methodology is provided in Annex 1

An environmental officer will control and analyze the state during the working process. Recommendations will be prepared if necessary. Information on the observed state, identified problems (if any) and the ways of response/correction will be submitted to an engineer.

3.2.3 III Section

Location: Khadistskali river valley till Tskere village, Camp #3, Concrete Plant #3 area.

GPS coordinates of initial and last points of the section: 38T 462895mE; 4697770mN – 38T 461476mE; 4701281mN.

Following habitats are identified within Section III of the project corridor:

- C3.55 - sparsely vegetated river gravel banks
- G1.21 - Riverine Fraxinus - Alnus woodland, wet at high but not at low water
- G1.A4 – Ravine and slope woodland
- E5.1 - Anthropogenic herb stands.

Mammals – There are no large mammals identified by the survey conducted within the Section III. Holes of small mammals (rodents) were found within the alpine zone. The presence of large mammals and / or signs of their living activity were not detected in the study corridor, as well as in studies conducted at the EIA stage. Bats detector detected presence of two genera - Pipistrelle (Pipistrellus) noctule bats (Nyctalus).

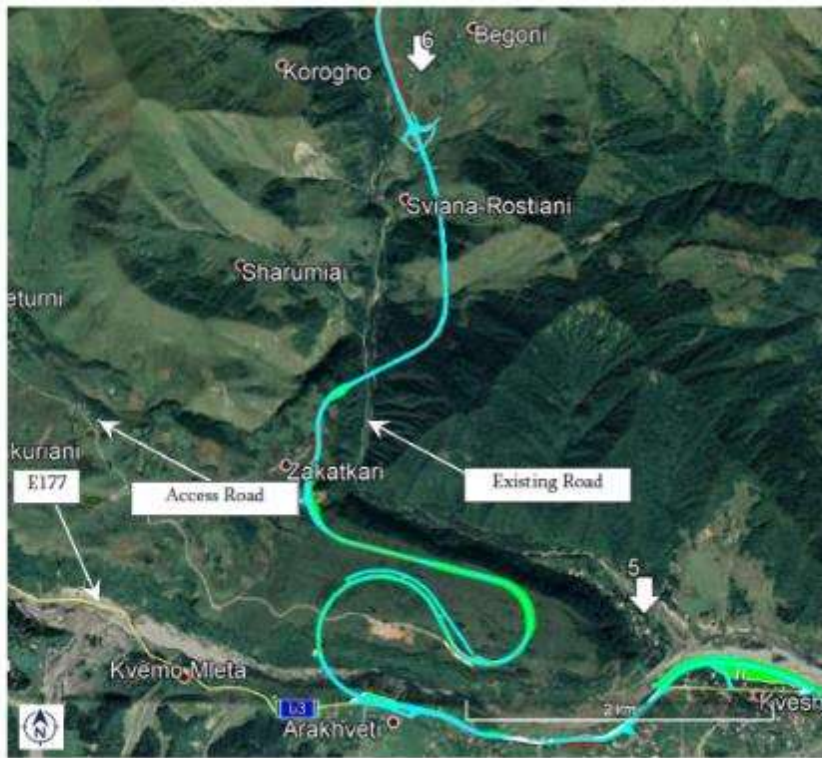


Figure 19. Section III (Arrows show initial and last points of the section)

At the start point of the section III, to the south-west of Zakatkari village, rocky site favorable for bats was recorded; however, mentioned area does not get within direct impact zone of the project and/or temporary/permanent infrastructure.

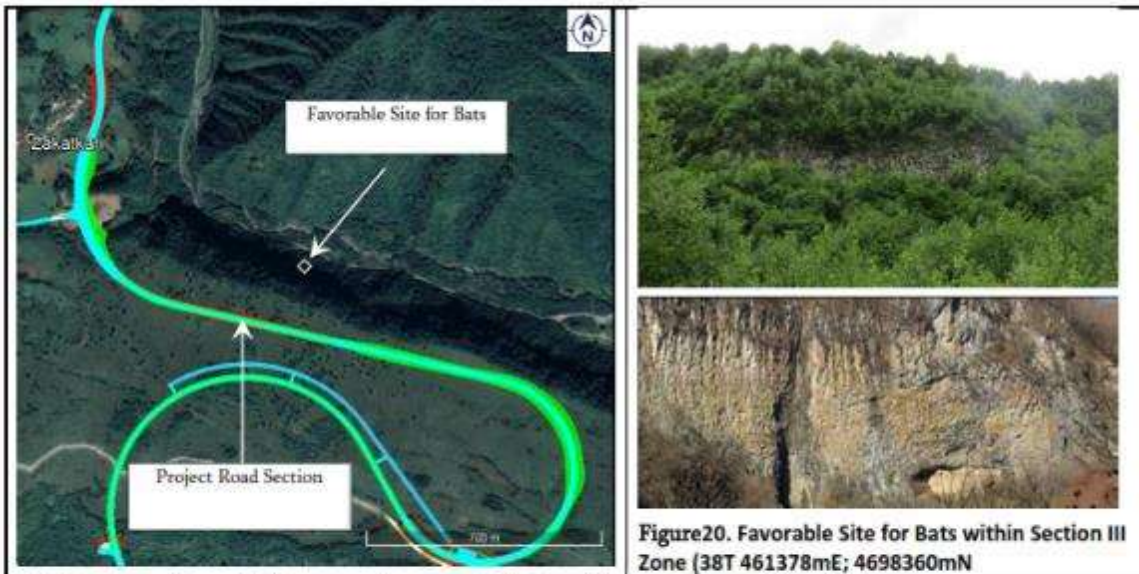


Figure20. Favorable Site for Bats within Section III Zone (38T 461378mE; 4698360mN)

Within the project arc bridge zone, sites potentially favorable for otter were identified.

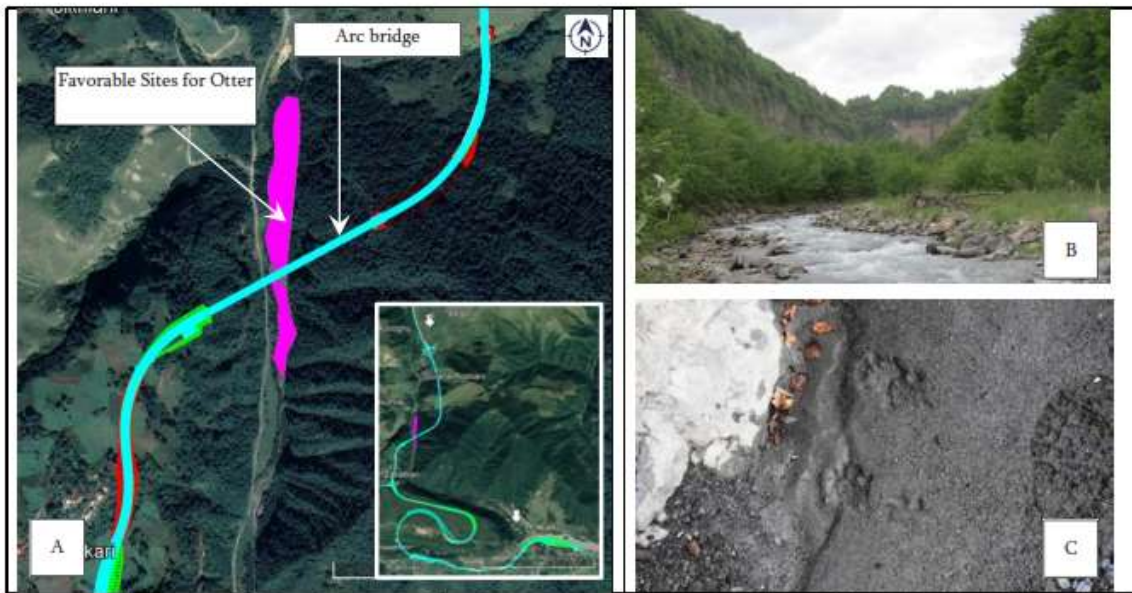


Figure 21. (A) Favorable Site for Otter within Section III Zone, (B) View of Favorable Site for Otter, (C) Traces of otter recorded on mentioned section at EIA stage

Construction of the arc bridge is not in touch with the valley bottom thus the mentioned area does not get within the direct project impact zone.

Reptiles and amphibians. During field survey, none species of reptiles and amphibians were recorded. Neither signs of their living activity were revealed.

From birds, 15 species mostly related to alpine habitat were identified (see Table 15)

Invertebrates. During field observation, 2 invertebrate species were recorded.

List of species identified within the Section III is provided in Table 15. Photos are presented in Picture 15.

Table 15. Species recorded during Field Survey

#	English Name	Latin Name	IUCN	Georgian Red List
Birds				
1	Common redstart	<i>Phoenicurus phoenicurus</i>	LC	-
2	Chaffinch	<i>Fringilla coelebs</i>	LC	-
3	Eurasian Blackbird	<i>Turdus merula</i>	LC	-
4	Common Buzzard	<i>Buteo buteo</i>	LC	-
5	Red-backed Shrike	<i>Lanius collurio</i>	LC	-
6	The great tit	<i>Parus major</i>	LC	-
7	Northern Wheatear	<i>Oenanthe oenanthe</i>	LC	-
8	Goldfinch	<i>Carduelis carduelis</i>	LC	-
9	European greenfinch	<i>Carduelis chloris</i>	LC	-
10	European robin	<i>Erithacus rubecula</i>	LC	-
11	Common rosefinch	<i>Carpodacus erythrinus</i>	LC	
12	Eurasian magpie	<i>Pica pica</i>	LC	
13	Red-billed Chough	<i>Pyrrhonorax pyrrhonorax</i>	LC	
14	House sparrow	<i>Passer domesticus</i>	LC	
15	Carrion crow	<i>Corvus corone</i>	LC	
Bats				

In order to avoid/mitigate impact on fauna, during activities on Section III, borders of work sites and movement roads should be strictly adhered to. It is necessary to thoroughly implement measures defined for avoidance/mitigation of impact on air (dust, exhaustion), soil and aquatic environment (additional information is provided in all plans developed under Site Environmental Management Plan); monitoring and control over performance of requirements.

During the work implementation it will be necessary to implement standard mitigation measures for impact on soil, aquatic environment, vegetation cover, air and wildlife (see Text Box 2).

Based on conducted preconstruction survey, the impact on wildlife within Section III can be assessed as:

	Receptor Sensitivity	Likelihood	Impact Significance
Mammals	Low	Medium	Low
Reptiles and Amphibians	Medium	Medium	Low/ Medium
Birds	High	Medium	Medium
Invertebrates	Medium	Medium	Low
Assessment methodology is given in Annex 1			

During work implementation, the situation will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer.

3.3 Resume

- Additional floristic and faunistic examination/assessment was carried out on the project and temporary infrastructure locations;
- Vegetation cover, habitats of specific sites were characterized. Sensitivity and impact degree was assessed;
- Fauna species existing within the project zone were recorded, the likelihood of their occurrence on the project/temporary infrastructure areas was noted;
- Potential impact was characterized by sites;
- Identification of sensitive sites for bats, otter and birds was highlighted;
- The need for additional mitigation measures was specified;
- The necessity-obligation to carefully implement the mitigation measures specified for the project (specified in the EIA and site environmental management plan) was mentioned, including the preparation of a Recultivation Plan for all damaged sites used for the project and an agreement with the Ministry of Environmental Protection and Agriculture. This also includes the issue of recultivation of the affected ash-alder forest area (approximately 0.01 km²) in the area of the tunnel entrance portal.
- It was stated that after identification of additional areas required for the project (spoil grounds, topsoil disposal areas, etc.), environmental officer will carry out observation-assessment of new sites. Information on mentioned surveys and survey results will be submitted to the project supervisor company (i.e. engineer) and the Ministry of Environmental Protection and Agriculture for approval;
- During work implementation, the situation on sites/within the project corridor will be controlled and analyzed by the environmental officer; if required, recommendations will be prepared. The information on the recorded situation, identified problems (if any) and ways of response on them/their elimination ways will be submitted to the engineer

Annex 1. Assessment Methodology

Project impact on physical, biological and socio-economic environment was assessed according to the below described methodology.

Impact identification – impact assessment process considers impact identification at various project implementation stages (preparation, construction, operation). Potential impact types are defined below:

- Negative – impact that is considered as unfavorable change compared to the baseline condition or introduction of the new undesired factor.
- Positive/useful – impact that expresses improvement compared to the baseline condition or introduces a new desired factor.
- Direct (i.e. primary) – impacts arising from direct interactions between the project activities and recipient environment.
- Indirect – impacts arising from other activities that may take place in the result of project implementation.
- Cumulative – Impacts that act in conjunction with other impacts of the same or other projects and affect the same natural or social environment resource or receptor;
- Short-term - impacts that are expected to last only for a limited period of time, and will cease upon completion of these activities, or as a result of mitigation / restoration measures and natural remediation
- Long-term - impacts that will last for a long period of time. This includes impacts that may be intermittent or repetitive, rather than continuous, if they occur over a long period of time.
- Permanent - Impacts that occur during project development and cause permanent changes in the affected receptors or resources that remain substantial after the project life cycle.

Mitigation measure development. Measures for identified impact avoidance, elimination, reduction or compensation were developed. Typical hierarchy of such measures is as follows:

- Avoidance at the source – Impact source avoidance;
- Mitigation at the source – Reduction of the impact source;
- Attenuation – Impact reduction between the source and receptor;
- Mitigation at the receptor –reduction of impact on receptor;
- Restoration – Remediation of loss after damage
- Compensation/repairation – replacement with another resource of similar or the same value.

Residual Impact.

Any impact that remains following the implementation of mitigation measures that is considered as low/acceptable within the limits of possibility, is defined as residual impact. The level of residual impact significance/magnitude is defined as following combination:

- Receptor significance/sensitivity;
- Impact magnitude.

For the given project, special tables were developed for impact assessment, for assessment of receptor significance/sensitivity and potential impact significance.

Impact magnitude. In order to characterize the magnitude, some factors were considered such as:

- Nature of change;
- Magnitude, intensity and scale;
- Geographic borders (scale) and distribution;
- Duration, frequency and reversibility.

Impact Significance Assessment Methodology

A: Characterisation of the outcome according to the duration and spatial limits of the 'magnitude'			
Definition	Criteria		
	Negative	Positive	
Magnitude	High	<ul style="list-style-type: none"> Large number of receptors is impacted Receptor sensitivity and/or conservation value is very high Significant damage to receptor is expected Exceedance of the relevant standard 	<ul style="list-style-type: none"> Large number of receptors is impacted Significant positive outcome is reached.
	Medium	<ul style="list-style-type: none"> Some receptors/small number of receptors are/is impacted Receptor sensitivity and/or conservation value is not very high Significant deterioration of the condition is observed Exceedance of the relevant standard is possible 	<ul style="list-style-type: none"> Some receptors/small number of receptors are/is impacted Sometimes positive outcome is reached
	Low	<ul style="list-style-type: none"> No receptor or small number of receptors get within the impact zone; Receptor is not sensitive toward change Minor deterioration of the condition – unnoticeable change. Exceedance of the standard is not observed. 	<ul style="list-style-type: none"> No receptor or small number of receptors get within the impact zone; Receptor is not sensitive toward change There is no or minor improvement of the existing situation; No change is observed

Duration	Impact Characterization		Frequency
Limited in time/short-term/low frequency	<ul style="list-style-type: none"> For several days after impact cessation 		<ul style="list-style-type: none"> Unit cases
Medium duration/ medium frequency	<ul style="list-style-type: none"> For several months after impact cessation 		<ul style="list-style-type: none"> Occasional, during work implementation
Long-term/high frequency	<ul style="list-style-type: none"> Permanent 		<ul style="list-style-type: none"> Frequent/ regular
Spatial limits	Biophysical		
	Minor /low	Within the project corridor	
	Medium	Distributed on the adjacent limited area outside the project corridor	
High/large	Distributed within large limits		

Matrices given below were used for impact significance assessment

Assessment/ranking of the outcome					
Magnitude	Duration	Spatial scale			
		Low	Medium	High	
Low	Short-term/low frequency	L	L	M	
	Medium duration/ medium frequency	L	L	M	
	Long-term/high frequency	M	M	M	
Medium	Short-term/low frequency	L	M	M	
	Medium duration/ medium frequency	M	M	H	
	Long-term/high frequency	M	H	H	
High	Short-term/low frequency	M	M	H	
	Medium duration/ medium frequency	M	M	H	
	Long-term/high frequency	H	H	H	
Assessment/ranking of the significance					
Impact likelihood		Outcome			
		Low	Medium	High	
		Obvious (high)	L	M	H
		Potential (medium)	L	M	H
Less likely (low)	L	L	M		

Annex 2. Photo-Material



Primula macrocalyx



Orchis purpurea



Alchemilla sp.



Viburnum opulus



Quercus iberica



Rhododendron luteum

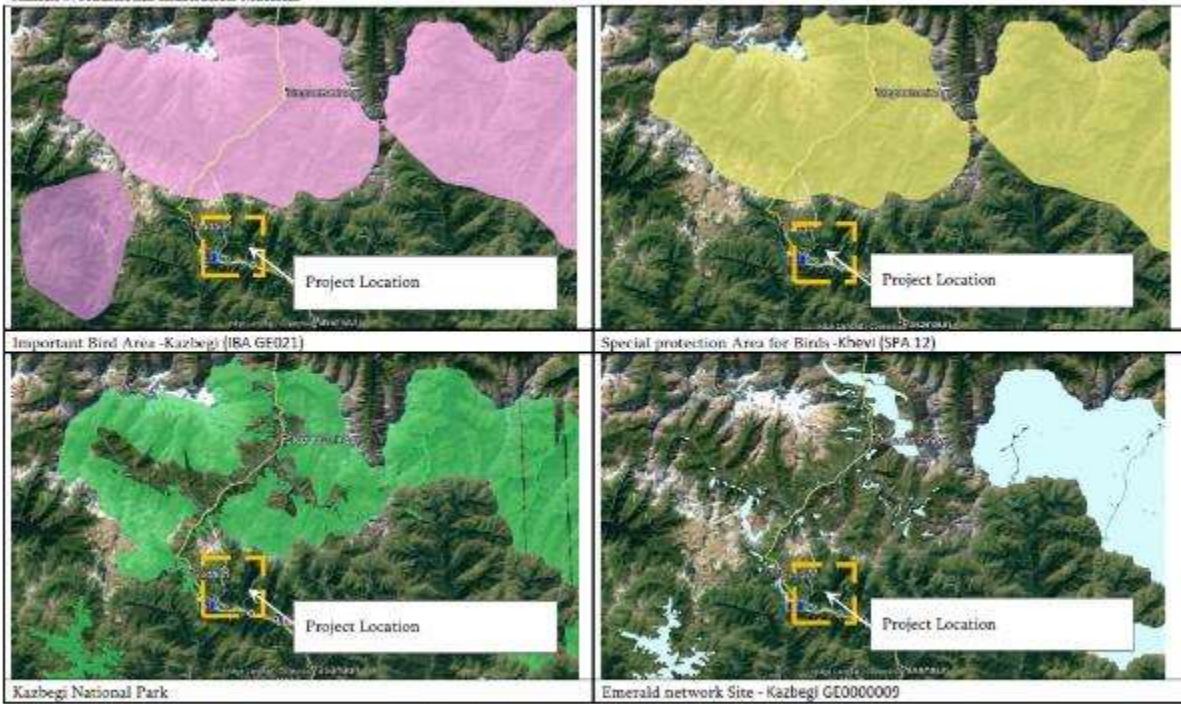


Taraxacum officinale

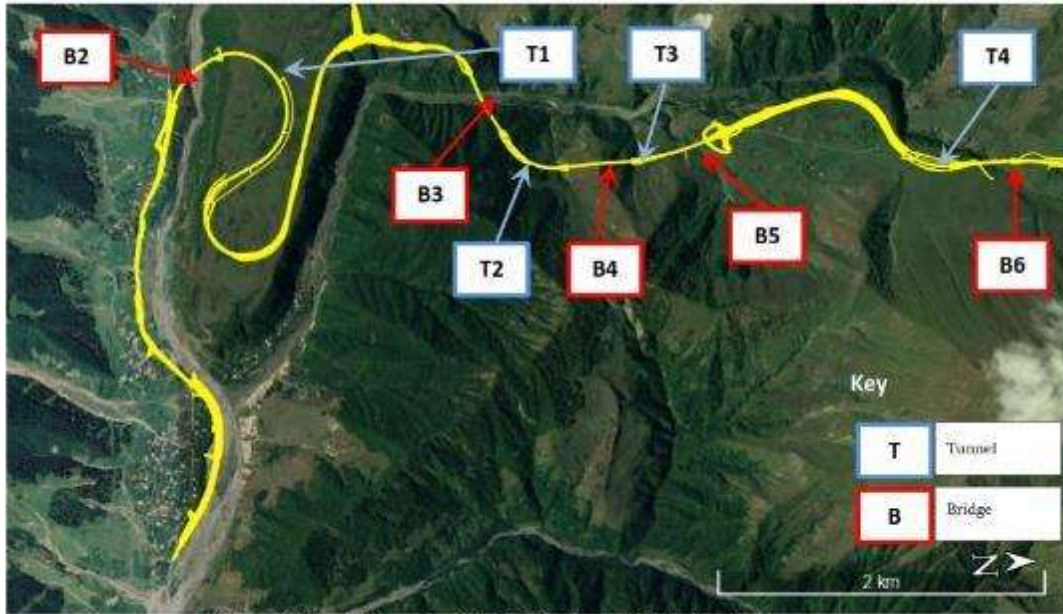


Fraxinus excelsior

Annex 3. Additional Illustration Material



Protected Areas with various Status within the Project Zone



Scheme of Kvesheti-Kobi section of Kvesheti-Kobi Road with indication of main components

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Biodiversity for blasting area

Introduction

The biodiversity report given below represents biodiversity situation for blasting area, which is situated near camp N2 (before camp N2). For reflecting photo material see table N1.

Research was done 24th of July in this year and it contains field work and relevant review of literature.

The main aim during field work was to reveal sensitive habitats, identify and inventorize flora, fauna and ornithofauna species.

During the field work it became clear, that selected territory for blasting territory is not sensitive area, there is not any regional red list plant species growing here.



Situation before construction



Situation after construction

Table N1. Photo material of blasting area territory

Field work results

Review of literature and field work has shown that blasting area projected area is crossing habitat, which according from EUNIS classification is:

- E5.1 Anthropogenic herb stands + F2.3 Subalpine deciduous scrub (see reflecting photo material in table N2)

This mentioned habitats is characterizing as follows:

E5.1 Anthropogenic herb stands - Stands of herbs developing on abandoned urban or agricultural land, on land that has been reclaimed, on transport networks, or on land used for waste disposal.

F2.3 Subalpine deciduous scrub - Subalpine scrubs of [Alnus], [Betula], [Salix] and Rosaceae ([Amelanchier], [Potentilla], [Rubus], [Sorbus]), less than 5 m tall, often accompanied by tall herbs that in the absence of scrub would be classified as E5.5. Excludes dwarf [Salix] scrub (F2.1), which is composed of species that rarely exceed 1.5 m in height, and scrub on waterlogged soils (F9.2).



Table N2. Photo material of blasting area habitats

Below in table N4 is represented consistence of plant species for selected territory of blasting area. It is noteworthy, that here isn't exists any plant specie which is protected by regional red list of Georgia.


Also it should be noticed that in the table N4 is represented coverage of plant species which is assessed according to universal scaling system of Braun – Blanquet (detailed information about scaling system see in table N3.).

Table 3. Cover scale and their relation to species cover indicated in percentage used for recording vegetation according the traditional Braun - Blanquet scale.

Range of cover	Braun-Blanquet
Single individual	r
Sporadic or few	+
0–1%	1
1–2%	1
2–3%	1
3–5%	1
5–10%	2
10–25%	2
25–33%	3
33–50%	3
50–75%	4
75–90%	5
90–95%	5
95–100%	5

It should be noted that selected territory for blasting area is under high anthropogenic impact, also near this territory is secondary road.

Table N4. Consistence of plant species in territory of blasting area

<p>Habitat type: E5.1 Anthropogenic herb stands + F2.3 Subalpine deciduous scrub</p> <p>Whole vegetation coverage in the selected area: 15%</p>			
Scientific name of species	Species coverage (%)	Red list of Georgia status	IUCN red list status
<i>Salix caprea</i>	1	-	LC
<i>Malus orientalis</i>	+	-	DD
<i>Pyrus caucasica</i>	2	-	-
<i>Corylus avellana</i>	1	-	LC
<i>Rhododendron luteum</i>	2	-	LC
<i>Cerasus sylvestris</i>	+	-	-
<i>Pimpinella rhodantha</i>	1	-	-
<i>Crataegus kyrtostylla</i>	1	-	-
<i>Prunus divaricata</i>	1	-	LC
<i>Sorbus caucasigena</i>	1	-	-
<i>Centaurea sp.</i>	1	-	-
<i>Daucus sp.</i>	1	-	-
<i>Rosa canina</i>	1	-	LC
<i>Urtica dioica</i>	2	-	LC

<i>Euphorbia sp.</i>	2	-	-
<i>Leucanthemum vulgare</i>	3	-	-
<i>Scabiosa sp.</i>	2	-	-
<i>Lotus corniculatus</i>	3	-	-
<i>Cichorium intybus</i>	2	-	LC
<i>Carex sp.</i>	3	-	-
<i>Ranunculus repens</i>	2	-	LC
<i>Trifolium pratense</i>	2	-	LC
IUCN – International Union for Conservation of Nature			
LC – Least concern			
DD – Data deficient			

More than 35 species of mammals, up to 20 bats, up to 180 birds, 10 reptiles, 6 amphibians, mollusks and various invertebrates (more than 500 species) have been identified in and around the whole project corridor.

Mammals

According to the available sources and the characteristics of the habitats, the list of mammal species in the project area is given below in table N5.

Table N5. Mammal species for selected area.

Scientific name of species	Protection status	
	IUCN red list status	Red list of Georgia status
<i>Apodemus mystacinus</i>	LC	-
<i>Canis aureus</i>	LC	-
<i>Canis lupus</i>	-	-
<i>Capreolus capreolus</i>	LC	-
<i>Chionomys roberti</i>	LC	-
<i>Crocidura gueldenstaedti</i>	LC	-
<i>Crocidura leucodon</i>	LC	-
<i>Dryomys nitedula</i>	LC	-
<i>Erinaceus concolor</i>	LC	-
<i>Felis silvestris</i>	-	-
<i>Glis glis</i>	LC	LC
<i>Lepus europeus</i>	LC	-
<i>Lynx lynx</i>	LC	CR
<i>Martes martes</i>	LC	-

<i>Meles meles</i>	LC	-
<i>Microtus arvalis</i>	LC	-
<i>Microtus socialis</i>	LC	-
<i>Mus musculus</i>	LC	-
<i>Mustela nivalis</i>	LC	-
<i>Rattus norvegicus</i>	LC	-
<i>Rattus rattus</i>	LC	-
<i>Sciurus anomalus</i>	LC	VU
<i>Sciurus vulgaris</i>	LC	-
<i>Sorex satunini</i>	LC	-
<i>Sorex volnuchini</i>	LC	-
<i>Sus scopa</i>	LC	-
<i>Sylvaemus uralensis</i>	LC	-
<i>Talpa caucasica</i>	LC	-
<i>Talpa levantis</i>	LC	-
<i>Terricola majori</i>	LC	-
<i>Ursus arctos</i>	LC	EN
<i>Vulpes vulpes</i>	LC	-
IUCN – International Union for Conservation of Nature		
LC – Least concern		
DD – Data deficient		
EN – Endangered		
VU – Vulnerable		
CR – Critically endangered		

As its visible from table N5 in the area is spread 4 specie protected of Regional red list of Georgia, although it doesn't mean that this species are living here and they have constant living places here. Listed species (*Glis glis*, *Lynx lynx*, *Sciurus anomalus*, *Ursus arctos*) are using selected area as place for migration.

Bats

According to the literature sources and according to a previous field study, 17 species of bats are found in the study corridor and surrounding areas. All of these species may be appear in the project area over a period of time.

The list of possible bat species in and around the project area is given below in table N6.

Table N6. Bats

Scientific name of species	Protection status	
	IUCN red list status	Red list of Georgia status
<i>Eptesicus nilssonii</i>	LC	-
<i>Eptesicus serotinus</i>	LC	-
<i>Hypsugo savii</i>	LC	-
<i>Myotis blythii</i>	LC (global)/NT (europe)	-
<i>Myotis mystacinus</i>	LC	-
<i>Myotis nattereri</i>	LC	-

<i>Nyctalus lasiopterus</i>	VU	-
<i>Nyctalus leisleri</i>	LC	-
<i>Nyctalus noctula</i>	LC	-
<i>Pipistrellus kuhlii</i>	LC	-
<i>Pipistrellus nathusii</i>	LC	-
<i>Pipistrellus pipistrellus</i>	LC	-
<i>Pipistrellus pygmaeus</i>	LC	-
<i>Plecotus auratus</i>	LC	-
<i>Rhinolophus ferrumequinum</i>	LC	-
<i>Rhinolophus hipposideros</i>	LC	-
<i>Vespertilio murinus</i>	LC	-
IUCN – International Union for Conservation of Nature LC – Least concern NT – Near threatened Note: All species of bats listed here are included in Annex II to the Bonn Convention and are protected by the EUROBATS Agreement. According to this agreement, Georgia is obliged to protect all species observed in and near the project area.		

Reptiles

The study area is not reach by the diversity of reptiles and the level of endemism. In the project area or near it can exist/appear of 10 species of reptiles.

The list of reptile species in and around the project area is given below in table N7.

Table N7. Reptiles

Scientific name of species	Protection status	
	IUCN red list status	Red list of Georgia status
<i>Anguis colchica</i>	LC	
<i>Coronela austriaca</i>	LC	-
<i>Darevskia caucasica</i>		-
<i>Darevskia derjugini</i>	NT	-
<i>Darevskia rudis</i>	LC	-
<i>Lacerta media</i>	LC	-
<i>Lacerta strigata</i>	LC	-
<i>Natrix natrix</i>	LC	-
<i>Natrix tessellata</i>	LC	-
<i>Vipera dinniki</i>	EN	EN
IUCN – International Union for Conservation of Nature LC – Least concern EN – Endangered		

Only one of the listed species is protected by the Regional (Georgian) red list. It should be noted that although habitat in the project area is acceptable for this specie, its arrival (*Vipera dinniki*) at work site is not expected as it normally avoids areas under anthropogenic load.

Aves

According to various sources, out of 403 species of birds in Georgia, about 180 species of birds is spread in the project area. Out of this, 35 species were also observed during the field survey. Most of the recorded birds are species related to shrubs, rocks, fields and water. This applies to both resident and nesting birds.

It's notable that the project area is not an important bird area (IBA) and / or a special bird protected area (SPA) whose function is to protect and monitor bird nesting populations in Georgia.

Also, its important that no nests were observed in the selected project area.

The list of aves species in and around the project area is given below in table N8.

Table 8. Aves

Scientific name of species	Seasonality of migration	Protection status	
		IUCN red list status	Red list of Georgia status
<i>Accipiter brevipes</i>	BB,M	LC	VU
<i>Accipiter gentilis</i>	M	LC	-
<i>Accipiter nisus</i>	YR-R	LC	-
<i>Aegithalos caudatus</i>	YR-R	LC	-
<i>Alauda arvensis</i>	M	LC	-
<i>Anthus cervinus</i>	M	LC	-
<i>Anthus trivialis</i>	BB	LC	-
<i>Apus apus</i>	BB	LC	-
<i>Aquila nipalensis</i>	M	EN	-
<i>Buteo buteo</i>	YR-R, M	LC	-
<i>Buteo rufinus</i>	YR-R, M	LC	VU
<i>Carduelis carduelis</i>	YR-R	LC	-
<i>Carduelis chloris</i>	YR-R	LC	-
<i>Carpodacus erythrinus</i>	BB	LC	-
<i>Certhia familiaris</i>	M	LC	-
<i>Clanga clanga</i>	WV, M	VU	VU
<i>Clanga pomarina</i>	BB,M	LC	
<i>Columba livia</i>	YR-V	LC	-
<i>Columba oenas</i>	M	LC	-
<i>Columba palumbus</i>	M	LC	-
<i>Corvus corax</i>	YR-V	LC	-
<i>Corvus corone</i>	YR-R	LC	-
<i>Crex crex</i>	BB	LC	-
<i>Cuculus canorus</i>	BB	LC	-
<i>Delichon urbicum</i>	YR-V	LC	-
<i>Dendrocopos leucotos</i>	YR-R	LC	-
<i>Dendrocopos major</i>	YR-R	LC	-
<i>Dryobates minor</i>	YR-R	LC	-

<i>Emberiza cia</i>	YR-R	LC	-
<i>Erithacus rubecula</i>	YR-R	LC	-
<i>Falco columbarius</i>	M	LC	-
<i>Falco peregrinus</i>	YR-R, M	LC	-
<i>Falco tinnunculus</i>	M	LC	-
<i>Fringilla coelebs</i>	YR-R	LC	-
<i>Fringilla montifringilla</i>	WV	LC	-
<i>Galerida cristata</i>	M	LC	-
<i>Garrulus glandarius</i>	YR-R	LC	-
<i>Grus grus</i>	BB, M	LC	EN
<i>Haliaeetus albicilla</i>	YR-R	LC	EN
<i>Hippolais caligata</i>	M	LC	-
<i>Hirundo rustica</i>	BB,M	LC	-
<i>Ixobrychus minutus</i>	BB, M	LC	-
<i>Jynx torquilla</i>	BB	LC	-
<i>Lanius collurio</i>	BB,M	LC	-
<i>Lanius minor</i>	M	LC	-
<i>Leopicus medius</i>	YR-R	LC	-
<i>Luscinia luscinia</i>	BB,M	LC	-
<i>Luscinia megarhynchos</i>	BB	LC	-
<i>Miliaria calandra</i>	BB	LC	-
<i>Milvus migrans</i>	M	LC	-
<i>Monticola saxatilis</i>	BB	LC	-
<i>Motacilla alba</i>	YR-R	LC	-
<i>Motacilla cinerea</i>	M	LC	-
<i>Motacilla flava</i>	M	LC	-
<i>Muscicapa striata</i>	BB, M	LC	-
<i>Neophron percnopterus</i>	BB,M	EN	VU
<i>Oenanthe oenanthe</i>	BB, M	LC	-
<i>Oriolus oriolus</i>	M	LC	-
<i>Otus scops</i>	BB	LC	-
<i>Parus ater</i>	YR-R	LC	-
<i>Parus caeruleus</i>	YR-R	LC	-
<i>Parus major</i>	YR-R	LC	-
<i>Passer domesticus</i>	YR-R	LC	-
<i>Passer montanus</i>	M	LC	-
<i>Pernis apivorus</i>	BB,M	LC	-
<i>Petronia petronia</i>	BB, M	LC	-
<i>Phoenicurus ochruros</i>	BB	LC	-
<i>Phoenicurus phoenicurus</i>	BB,M	LC	-
<i>Phylloscopus collybita</i>	BB	LC	-
<i>Phylloscopus trochilus</i>	BB	LC	-
<i>Pica pica</i>	YR-R	LC	-
<i>Porzana porzana</i>	YR-R, M	LC	-
<i>Prunella modularis</i>	BB	LC	-

<i>Pyrrhocorax graculus</i>	YR-R	LC	-
<i>Pyrrhocorax pyrrhocorax</i>	YR-R	LC	-
<i>Saxicola torquatus</i>	BB	LC	-
<i>Saxicola rubetra</i>	BB	LC	-
<i>Sylvia atricapilla</i>	BB	LC	-
<i>Sylvia communis</i>	BB,M	LC	-
<i>Sylvia nisoria</i>	BB	LC	-
<i>Troglodytes troglodytes</i>	YR-R	LC	-
<i>Turdus merula</i>	YR-R	LC	-
<i>Turdus philomelos</i>	M	LC	-
<i>Turdus pilaris</i>	WV,M	LC	-
<i>Turdus viscivorus</i>	M	LC	-
<i>Upupa epops</i>	M	LC	-
IUCN – International Union for Conservation of Nature			
LC – Least concern			
EN – Endangered			
Seasonal period of species life in a given area:			
YR-R = It nests here in Georgia all year round and multiplies; YR-V = Is a visitor to these areas; Does not multiply, but is here all year round; BB = Enters the area only for breeding;			
M = Migrant; During migration (autumn and spring) may reach this area			

Conclusions and mitigation measures

- Selected blasting area can be assessed as having a low sensitivity
- Blasting area projected territory is crossing habitat -E5.1 Anthropogenic herb stands + F2.3 Subalpine deciduous scrub
- In the territory of selected blasting area is not growing any plant species which is protected by red list of Georgia
- The area of new blasting territory can be used by 4 specie of mammals which are protected by Regional red list of Georgia, although it doesn't mean that this species are living here and they have constant living places here. Mostly, listed species (*Glis glis*, *Lynx lynx*, *Sciurus anomalus*, *Ursus arctos*) are using selected area as place for migration
- In selected project area it's possible to appear 17 bat species. It's noteworthy that all species of bats listed in table N6 are included in Annex II to the Bonn Convention and are protected by the EUROBATS Agreement. According to this agreement, Georgia is obliged to protect all species observed in and near the project area, but none of this 17 bat specie are protected by regional red list of Georgia
- One specie of reptiles (*Vipera dinniki*) which is protected by the Regional (Georgian) red list is spreaded in this region, but It should be noted that although habitat in the project area is acceptable for this specie, its arrival (*Vipera dinniki*) at work site is not expected as it normally avoids areas under anthropogenic load.
- 7 specie (*Accipiter brevipes*, *Buteo rufinus*, *Clanga clanga*, *Grus grus*, *Heliaetus albicilla*, *Neophron percnopterus*) of aves can appear near and in the selected blasting area, which are protected by red list of Georgia. Although, they have no nests in this territories, selected blasting area can be used by them as migration (flying route)

- The project area (blasting territory) is not an important bird area (IBA) and / or a special bird protected area (SPA) whose function is to protect and monitor bird nesting populations in Georgia
- Impacts on the project areas and the surrounding species will be related to noise, vibration, changes in the lighting background during the works. Physical impact is unlikely

Some picture of flora and fauna species for blasting area territory





Pyrus caucasica



Lanius collurio



Turdus merula

Annex 9: Ambulance Certificate for Lot# 1



საქართველოს შრომის, ჯანმრთელობისა და სოციალური დაცვის სამინისტროს
სამედიცინო საქმიანობის ხელშეწყობის რეგულაციების სააგენტო
2006 წლის 03 თებერვალი, N 228, ს. 10-11, 10-12

საქართველოს შრომის, ჯანმრთელობისა და სოციალური დაცვის სამინისტროს
სამედიცინო საქმიანობის ხელშეწყობის რეგულაციების სააგენტო

საქმიანობის მოწმობა N 002102

შ.პ.ს. „შეკურნავი 75 03 03“

ქ. თბილისი, მ. იაშვილის ქუჩა, N13

სამედიცინო საქმიანობის სახე სასწრაფო სამედიცინო დახმარების ლიცენზია

სააგენტოს მოწმობის გაცემის თარიღი: 2016 წლის თებერვალი - N 2006 არსებობის ხელშეწყობა

სააგენტოს უფროსი 





ԿԱՐՈՒՄ, ՉԻԽՆՉԻ ԿԱՐՈՒՄ ՊՐԱՅՈՒՑԱՅ
(ԲԱՐՈՒՄԱՃՅՋՆԱԾՈՒՅ) ԿԱՆԿԱՐԱՊԵՐ ԱՅ ԿԱՅՏԱԿԱՆՈՒՄ
ՐԵՋԻՍՏՐԱԿԱՆ ՁԵՄՈՒՑ

ԱՄՈՒՄ 1977

20467614

III էջեր:

(Նյութային կապ զանգված)

ԿԱՐՈՒՄ, ՉԻԽՆՉԻ ԿԱՐՈՒՄ ՊՐԱՅՈՒՑ (ՉԻԽՆՉԻ ԿԱՐՈՒՄ) ԲԱՐՈՒՄԱՃՅՋՆԱԾՈՒՅ ԱՅ ԿԱՅՏԱԿԱՆՈՒՄ
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19.07.2007
ԿԱՆԿԱՐԱՊԵՐ ԿԱՆԿԱՐԱՊԵՐ

ՎճԱՐ ՈՒՆՍՈՒՄԻ ԿԱՆԿԱՐԱՊԵՐ ԿԱՆԿԱՐԱՊԵՐ 17-20068

ԿԱՐՈՒՄ, ՉԻԽՆՉԻ ԿԱՐՈՒՄ ՊՐԱՅՈՒՑ (ՉԻԽՆՉԻ ԿԱՐՈՒՄ) ԿԱՆԿԱՐԱՊԵՐ ԿԱՆԿԱՐԱՊԵՐ

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ԿԱՆԿԱՐԱՊԵՐ ԿԱՆԿԱՐԱՊԵՐ ԿԱՆԿԱՐԱՊԵՐ (ԿԱՆԿԱՐԱՊԵՐ)

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ԿԱՆԿԱՐԱՊԵՐ ԿԱՆԿԱՐԱՊԵՐ
ԿԱՆԿԱՐԱՊԵՐ ԿԱՆԿԱՐԱՊԵՐ

Annex 10: Waste and Sewage Delivery Receipts for Lot 1 and Agreement with TRC



WASTE TRANSFER NOTE

Ref No.
№

004258

ნარჩენების სატრანსპორტო ზედღებულება

PLEASE COMPLETE IN BLOCK CAPITALS IN ENK

კანონი წესით სავსებით სავსებით

A. CONSIGNMENT DETAILS / ნარჩენების აღწერა

1. Waste described herein is dispatched from /
აქ აღწერილი ნარჩენების გამოშვების ადგილი

Facility /
ობიექტი

CRTG

Area Name / ადრ.
დასახელება

Kobi - გობი

Date /
თარიღი

2.6.21

2. Destination of waste (name,
location) / დანიშნულება
(დასახელება/მდებარეობა)

GMSTP

3. Dispatched by / გამოშვებული

Ela Bachashvili

Position / თანამდ.
პოზიცია

Env. Eng

Tel / ტელ.

593.132362

B. DESCRIPTION OF WASTE

ნარჩენების აღწერა

No. of additional sheets /
დამატებითი ფურცლების

1. Waste type ნარჩენის ტიპი	2. Haz./Non Haz. / სას-უსა.	3. Physical form / ფორმის	4. Quantity / რაოდენობა	Unit/ეკვ. / ერთე.	5. Process giving rise to waste ნარჩენის წარმოქმნის პროცესი
Sewage	H/N	Liq	12	m ³	

Dispatcher's Signature / გამოშვების ხელმოწერა

C. TRANSPORTERS DETAILS / ტრანსპორტირების მძღობრის დეტალები

I certify today that I collected the consignment and that the details herein are correct /
აქ აღწერილი ნარჩენების აღწერა სწორია და ნარჩენების აღწერა სწორია

1. The quantity collected is /
რაოდენობა

12

kg / lts / m³ etc /
კგ/ლ/მ³ და ა.შ.

2. Name / სახელი
გვარი

Tamarashvili

Date
თარიღი

2.6.21 at 11:00 am / pm
საათი

3. Signature /
ხელმოწერა

Company name / კომპანიის სახელი

Sanitari

4. Vehicle registration /
ტრანსპორტი

W0442W0

D. CONSIGNEES CERTIFICATE / მძღობრის მიმღობრის სერტიფიკატი

1. I received this waste on / მივიღე ეს
ნარჩენები

_____ / _____

at
საათი

am / pm

2. Quantity received
მიღებული რაოდენობა

kg/lts/m³ etc /
კგ/ლ/მ³ და ა.შ.

3. Vehicle registration /
ტრანსპორტი

6. Waste Facility Name / ნარჩენების
სახელი

4. Name / სახელი
გვარი

7. On behalf of (Co) /
განა (კომპანიის) სახელი

5. Signature /
ხელმოწერა

Distribution /
დასაშვანი

White /
ბილი

Yellow /
ყვითელი



WASTE TRANSFER NOTE

ნარჩენების სატრანსპორტო შედეგბული

Ref No. №

004174

PLEASE COMPLETE IN BLOCK CAPITALS IN BKS

კანონი შევსება: კანონი ძალაშია

A. CONSIGNMENT DETAILS / ნაჩვენის შეტყობის

1. Waste described herein is dispatched from / აქ აღწერილი ნარჩენების გამოსვლის ადგილი

Facility /
ობიექტი

CRTG

Area Name /
დასახელება

3^{რბ}

Date /
თარიღი

05.06.21

2. Destination of waste (name, location) /
ნარჩენების მიმართული (დასახელება/მდებარეობა)

ბ2 / ბ5

3. Dispatched by /
გამომსვლი

Xia Shaw Lin

Position /
დანიშნულება

Site Engineer

Id /
ნომერი

59367897/

B. DESCRIPTION OF WASTE

ნარჩენების აღწერა

No. of additional sheets /
დამატებითი ფურცლები

1. Waste type / ნარჩენის ტიპი	2. Haz / Non Haz / სა-საფრთხო	3. Physical form / ფორმა	4. Quantity / რაოდენობა	Unit / ეკვივალენტი	5. Process giving rise to waste / სარჩენის წარმოშობის პროცესი
მინერალური ცემენტი	ნ	ს	8.0	მ ³	
მუქი ცემენტი	ნ	ს	4.0	მ ³	

Dispatcher's Signature /
გამომსვლის ხელმოწერა

Xia Shaw Lin / 05.06.21

C. TRANSPORTERS DETAILS / ტრანსპორტირების საშუალების მფლობელის

I certify today that I collected the consignment and that the details herein are correct /
აქვე ვდასტურებ, რომ შევსებული დეტალები სწორად აღწერილია ამ დოკუმენტში

1. The quantity collected is /
რაოდენობა

12,023

kg / lbs / m³ etc /
კგ/ფუნტი/მ³ და ა.შ.

2. Name /
სახელი

Xia Shaw Lin

Date /
თარიღი

05.06.21

at /
საათი

3. Signature /
ხელმოწერა

Xia Shaw Lin

Company name /
კომპანიის სახელი

Langchi

4. Vehicle registration /
ტრანსპორტის

PP051VL

D. CONSIGNEES CERTIFICATE / მომხმარებლის მიმართული

1. I received this waste on /
სარჩენის მიღების თარიღი

2. Quantity received /
მიღებული რაოდენობა

kg/lbs/m³ etc /
კგ/ფუნტი/მ³ და ა.შ.

3. Vehicle registration /
ტრანსპორტის

6. Waste Facility Name /
სარჩენის სახელი

4. Name /
სახელი

7. On behalf of (Co) /
კომპანიის სახელი

5. Signature /
ხელმოწერა



WASTE TRANSFER NOTE

ნარჩენების ხატრანსპორტო ზედღებულება

Ref No. N 004261

PLEASE COMPLETE IN BLOCK CAPITALS ONLY / მხოლოდ ბლოკური ასოებით შევსება

A. CONSIGNMENT DETAILS / ნარჩენების აღწერა

1. Waste described herein is dispatched from / აქ აღწერილი ნარჩენების გასვლა ხდება ადგილი

Facility / სადგურა: CRTG Area Name / რაიონი დასახლება: Kobi - znan Date / თარიღი: 12.06.21

2. Destination of waste (name, location) / ნარჩენების მიმართული (სახელი/მდებარეობა): GUSTP

3. Dispatched by / გასაგზავნი: Sunday abegu Position / თანამდებობა: _____ Tel / ტელ: _____

B. DESCRIPTION OF WASTE / ნარჩენების აღწერა

1. Waste type / ნარჩენის ტიპი	2. Hazard class / რისკ-კლასი	3. Physical form / ფიზიკური ფორმა	4. Quantity / რაოდენობა	Unit / ერთეული	5. Processing risk to waste / ნარჩენის დამუშავების რისკი
<u>Sewage</u>	<u>H/N</u>	<u>Liq</u>	<u>12</u>	<u>m3</u>	

Dispatcher's Signature / გასაგზავნის ხელმოწერა: [Signature]

C. TRANSPORTERS DETAILS / ტრანსპორტის მატარებლის აღწერა

I certify today that I collected the consignment and that the details herein are correct / დღეს ვაცხადებ, რომ შეგროვებული ნარჩენების აღწერა სწორია.

1. The quantity collected is / შეგროვებული რაოდენობა: 12 kg / lbs / m³ etc / ან/და სხვა: _____

2. Name / სახელი: Tamarashvili Date / თარიღი: 12.06.21 at 10:00 am / pm

3. Signature / ხელმოწერა: [Signature] Company name / კომპანიის სახელი: Sanitari

4. Vehicle registration / ტრანსპორტის რეგისტრაცია: WO442140

D. CONSIGNEES CERTIFICATE / მისმომხმარებლის დამადასტურებელი

1. I received this waste on / მივიღე ეს ნარჩენები: _____ at _____ am / pm

2. Quantity received / მიღებული რაოდენობა: _____ kg / lbs / m³ etc / ან/და სხვა: _____

3. Vehicle registration / ტრანსპორტის რეგისტრაცია: _____

4. Name / სახელი: _____

5. Signature / ხელმოწერა: _____

6. Waste Facility Name / ნარჩენების სადგურის სახელი: _____

7. On behalf of (Co) / ვინც (კომპანიის) სახელით: _____

Distribution / გაფორმების მანქანა:

White / ყვითელი - Generator / ემისორი	Yellow / ყვითელი - Receiver / მიმღები
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WASTE TRANSFER NOTE

Ref No.
№

004262

ნარჩენების სატრანსპორტო შედეგბულო

PLEASE COMPLETE IN BLOCK CAPITALS IN INK

განზიარებული შედეგბულო

A. CONSIGNMENT DETAILS / ნარჩენების მისამართი

1. Waste described herein is dispatched from /
აქ აღწერილი ნარჩენების გამოცხადების ადგილი

Facility /
ადგილი

CRTG

Area Name / ადგილის
დასახელება

Kobi - ჯმ ში

Date /
თარიღი

16.06.21

2. Destination of waste (name,
location) / ნარჩენების
მისამართი (დასახელება/მდებარეობა)

GUSTP

3. Dispatched by / გამოცხადებული

Leb Buchiashvili

Position / თანამდებობა

Tel / ტელ

593132361

B. DESCRIPTION OF WASTE

ნარჩენების აღწერა

No. of additional sheets / დამატებითი
ფურცლების რაოდენობა

1. Waste type
ნარჩენების ტიპი

Sewage

2. Haz / Non Haz
/ საშიშროება

H/N

3. Physical form
/ მატერიალობა

LIR

4. Quantity
/ რაოდენობა

12

Unit / ერთეული

m³

5. Process giving rise to waste /
ნარჩენების წარმოშობის პროცესი

Dispatcher's Signature / გამოცხადების ხელმოწერა

C. TRANSPORTERS DETAILS / მატარებლის მატარებლის მისამართი

I certify today that I collected the consignment and that the details herein are correct / დღეს ვდასტურებ, რომ შეგივს ტვირთი, რომელიც სწორად
აღწერილია ამ დოკუმენტში

1. The quantity collected is / შეგებულა
რაოდენობა

12

kg / lbs / etc /
კგ/ფუნტი/ etc

2. Name / სახელი
გვარი

Tamarashvili

Date
თარიღი

16.06.21 at 11:00 am / pm

3. Signature /
ხელმოწერა

Company name / კომპანიის სახელი

Sanitari

4. Vehicle registration /
ტრანსპორტის

W0442W0

D. CONSIGNEES CERTIFICATE / მისამართის მისამართის სერტიფიკატი

1. I received this waste on / მივიღე ეს
ნარჩენები

2. Quantity received
მიღებული რაოდენობა

kg/lbs/ton etc / კგ/ფუნტი/ ტონა

3. Vehicle registration /
ტრანსპორტის

6. Waste Facility Name / ნარჩენების
სახელი

4. Name / სახელი-
გვარი

7. On behalf of (Co) / ვინ (კომპანიის) სახელი

5. Signature /
ხელმოწერა



WASTE TRANSFER NOTE

ნარჩენების სატრანსპორტო შედეგბუღი

Ref No. №

001337

PLEASE COMPLETE IN BLOCK CAPITALS IN INK

განზრდ. შევსეთ. ზედწერ. ასობით

A. CONSIGNMENT DETAILS / ბარაქობის მონაცემები

1. Waste described herein is dispatched from / აქ აღწერილი ნარჩენების გამოშვების ადგილი

Facility / ობიექტი

CRTG

Area Name / ადგილის სახელი

Kebi - 3ma

Date / თარიღი

19.06.21

2. Destination of waste (name, location) / განიშვების ადგილი (დასახელება, მდებარეობა)

G.M.S.T.R

3. Dispatched by / გამოშვებული

Lela Bachkashvili

Position / თანამდებობა

ფუნქცია

Tel / ფონი

593132361

B. DESCRIPTION OF WASTE

ნარჩენების აღწერა

No. of additional sheets / დამატ. ფურცლების

1. Waste type / ნარჩენის ტიპი

Sewage

2. Haz / Non Haz / სას. / უსს.

H/N

3. Physical form / ფიზიკური ფორმა

Liq

4. Quantity / რაოდენობა

12

Unit / ერთეული

m3

5. Process giving rise to waste / ნარჩენის წარმოშობის პროცესი

Dispatcher's Signature / გამომშვების ხელმოწერა

[Signature]

C. TRANSPORTERS DETAILS / მემორანდუმის ბარაქობის მონაცემები

I certify today that I collected the consignment and that the details herein are correct / დღეს ვაცხადებ, რომ შევიღე ბარაქობის მონაცემებს სწორად აღწერილი ამ დოკუმენტში

1. The quantity collected is / შეგებული რაოდენობა

12

kg / lbs / etc / კგ / ფუნტი / სხვ.

2. Name / სახელი

Tamarashvili

Date / თარიღი

19.06.21 at 13:00 am / pm

3. Signature / ხელმოწერა

[Signature]

Company name / კომპანიის სახელი

Sanitari

4. Vehicle registration / ტრანსპორტი

W0442W0

D. CONSIGNEES CERTIFICATE / მემორანდუმის მიმღების სანდოობის ბარაქობა

1. I received this waste on / მივიღე ეს ნარჩენები

2. Quantity received / მიღებული რაოდენობა

[Blank]

kg/lbs/etc / კგ/ფუნტი/სხვ.

3. Vehicle registration / ტრანსპორტი

[Blank]

6. Waste Facility Name / ნარჩენების სადგომის სახელი

4. Name / სახელი

7. On behalf of (Co) / ვის (კომპანიის) სახელით

5. Signature / ხელმოწერა



WASTE TRANSFER NOTE

ნარჩენების სატრანსპორტო ზედღებულება

Ref No. N°

001338

PLEASE COMPLETE IN BLOCK CAPITALS IN INK

გთხოვთ შეავსოთ ჩვეურობაში

A. CONSIGNMENT DETAILS / ნარჩენების მისამართი

1. Waste described herein is dispatched from / ამ აღწერილი ნარჩენების გამოშვების ადგილი

Facility / ობიექტი

CRTG

Area Name / ადრ. მისამართი

Kobi-sm 8m

Date / თარიღი

19.06.21

2. Destination of waste (name, location) / ნარჩენების მიმართულება (დასახელება/მისამართი)

GMSTP

3. Dispatched by / გამოშვების

Ren. Jinsheng

Position / თანამდებობა

Tel / ტელ

B. DESCRIPTION OF WASTE

ნარჩენების აღწერა

No. of additional sheets / დამატებითი ფურცლების რაოდენობა

1. Waste type / ნარჩენის ტიპი

2. Haz / Non Haz / საშიშრო / არა-საშიშრო

3. Physical form / ფიზიკური ფორმა

4. Quantity / რაოდენობა

Unit / ერთეული

5. Process giving rise to waste / ნარჩენის წარმოშობის პროცესი

Sewage

H/N

Liq

12

m³

Dispatcher's Signature / გამოშვების ხელმოწერა

Ren. Jinsheng

C. TRANSPORTERS DETAILS / ტრანსპორტის მისამართის მისამართი

I certify today that I collected the consignment and that the details herein are correct / ვადასტურებ, რომ მივიღე ნარჩენი, რომელიც აღწერილია ამ დოკუმენტში

1. The quantity collected is / მიღებული რაოდენობა

12

kg / lbs / m³ etc / კგ/ლბ/მ³ და ა.შ.

2. Name / სახელი

Tamarashvili

Date / თარიღი

19.06.21 at 11:00 am / pm

3. Signature / ხელმოწერა

at

Company name / კომპანიის სახელი

sanitari

4. Vehicle registration / ტრანსპორტი

WA44240

D. CONSIGNEES CERTIFICATE / მისამართის მისამართის სერტიფიკატი

1. I received this waste on / მივიღე ეს ნარჩენი

2. Quantity received / მიღებული რაოდენობა

kg/lbs/m³ etc / კგ/ლბ/მ³ და ა.შ.

3. Vehicle registration / ტრანსპორტი

4. Waste Facility Name / ნარჩენების ნივთიერების სახელი

4. Name / სახელი

7. On behalf of (Co) / ვისი კომპანიის სახელი

5. Signature / ხელმოწერა

WASTE TRANSFER NOTE

ნარჩენების სატრანსპორტო ზედღებულება

Ref No. WREP SRP №

1492



PLEASE COMPLETE IN BLOCK CAPITALS IN INK

განსვით შევსოთ ზედღებულება ასობით

A. CONSIGNMENT DETAILS / ნარჩენების აღწერა

1. Waste described herein is dispatched from / აღწერილი ნარჩენების გამოგზავნის ადგილი

Facility / ობიექტი

GRTG

Area Name / სოფ. დასახელება

KOBI-503

Date / თარიღი

19.06.21

2. Destination of waste (name, location) / განაშენიანება (დასახელება, მდებარეობა)

G.H. ST.P.

3. Dispatched by / გამოგზავნილი

Lela Baedashvili

Position / თანამდებობა

Tel / ტელ:

593132361

B. DESCRIPTIONS OF WASTE / ნარჩენების აღწერა

No. of additional sheets / დამატებითი ფურცლების რაოდენობა

1. Waste type / ნარჩენის ტიპი	2. Haz / Non Haz / სა-აფრ / სა-არაფრ	3. Physical form / ფიზ. ფორმა	4. Quantity / რაოდენობა	Unit / ერთეული	5. Process giving rise to waste / ნარჩენის წარმოშობის პროცესი
Sc wage	MH	Liq.	13	m ³	

Dispatcher's Signature / გამოგზავნის ზედღებულება

C. TRANSPORTERS DETAILS / ტრანსპორტის საშუალებების აღწერა

I certify today that I collected the consignment and that the details herein are correct / დღეს აცხადებ, რომ შევიღე ტვირთი, რომელიც სწორად აღწერილი არ დოკუმენტებში

1. The quantity collected is / შეგროვებული რაოდენობა

13

kg / lts / te / m³ etc / კგ / ლ / ტ / მ³ და ა.შ.

2. Name / სახელი

B. Anarashvili

Date / თარიღი

19.06.21

at / საათი

11:10

am / pm

3. Signature / ხელმოწერა

[Signature]

Company name / კომპანიის სახელწოდება

Sahitaky-

4. Vehicle registration / ტრანსპ. რიცხვი

89-877-LL

D. CONSIGNEES CERTIFICATE / მისმომხმარებლის სერტიფიკატი

1. I received this waste on / მივიღე ეს ნარჩენები _____ / _____ at / ტელ. სა. _____ am / pm

2. Quantity received / მიღებული რაოდენობა

kg / lts / te / m³ etc / კგ / ლ / ტ / მ³ და ა.შ.

3. Vehicle registration / ტრანსპ. რიცხვი

5. Waste Facility Name / ნარჩენების დაგროვების სახელწოდება

4. Name / სახელი

7. On behalf of (Co) / ვინც (კომპანიის) სახელით

5. Signature / ხელმოწერა



WASTE TRANSFER

ნარჩენების სატრანსპორტო ხელშეუქმები

Transfer No. №

004719

PLEASE COMPLETE IN BLOCK CAPITALS IN INK / გთხოვთ შეავსოთ / შეავსოთ ქაღალდზე

A. CONSIGNMENT DETAILS / ნარჩენების აღწერა

1. Waste described herein is dispatched from / აქ აღწერილი ნარჩენების გასვლის ადგილი

Facility / ობიექტი

CRTG

Area Name / ადგილის სახელი

KOBI-3მ3

Date / თარიღი

20.06.21

2. Destination of waste (name, location) / განაწილების (დასახელება-მდებარეობა)

G.U.S.T.P.

3. Dispatched by / გაიშვია

[Signature]

Position / თანამდებობა

საპროექტი

Tel / ტელ

593678977

B. DESCRIPTION OF WASTE / ნარჩენების აღწერა

No. of additional sheets / დამატებითი ფურცლების რაოდენობა

1. Waste type / ნარჩენის ტიპი	2. Haz / Non Haz / საშიშრო / საშიშრო არა	3. Physical form / ფიზიკური ფორმა	4. Quantity / რაოდენობა	Unit / ერთეული	5. Process giving rise to waste / ნარჩენის წარმოშობის პროცესი
Sewage water	MH	Liq.	13	m ³	

Dispatcher's Signature / გაიშვიალის ხელმოწერა

[Signature]

C. TRANSPORTERS DETAILS / ტრანსპორტის მძღობრის დეტალები

I certify today that I collected the consignment and that the details herein are correct / დღეს ვაცხადებ, რომ შევრეკე ნარჩენებს და აქ აღწერილია მისი აღწერა.

1. The quantity collected is / შეგროვდა რაოდენობა

13

kg / lbs / m³ etc / კგ / ფუნტი / მ³ და ა.შ.

2. Name / სახელი

A. Aznarashvili

Date / თარიღი

20.06.21 at 11:30

am / pm / საათი

3. Signature / ხელმოწერა

[Signature]

Company name / კომპანიის სახელი

Sahitary

4. Vehicle registration / ტრანსპორტის რეგისტრაცია

99-877-4L

D. CONSIGNEES CERTIFICATE / მიმწოდებლის დამკვეთის სერტიფიკატი

1. I received this waste on / მივიღე ეს ნარჩენები _____ at _____ am / pm

2. Quantity received / მიღებული რაოდენობა _____ kg / lbs / m³ etc / კგ / ფუნტი / მ³ და ა.შ.

3. Vehicle registration / ტრანსპორტის რეგისტრაცია

6. Waste Facility Name / ნარჩენების სადგომის სახელი

4. Name / სახელი

7. On behalf of (Co) / ვინ (კომპანიის) სახელი

5. Signature / ხელმოწერა



WASTE TRANSFER NOTE

Ref No.
№

001339

ნარჩენების სატრანსპორტო ზედღებულება

PLEASE COMPLETE IN BLOCK CAPITALS (IN EN)

გამოვსებთ: ნარჩენების სააგენტო

A. CONSIGNMENT DETAILS / ნარჩენების აღწერა1. Waste described herein is dispatched from /
აქ აღწერილი ნარჩენების გამოვსების ადგილიFacility /
ობიექტი

CRTG

Area Name / ადგილის
ნომერი

Kobi-3მზ

Date

თარიღი 21.06.21

2. Destination of waste (name,
location) / აღსანიშნულება
(დასახელება/მდებარეობა)

G.U.S.T.P

3. Dispatched by / გამოვსებნი

Vashava Vashava

Position / თანამდებობა

Site Engineer

Tel / ტელ

593678971

B. DESCRIPTION OF WASTE

ნარჩენების აღწერა

No. of additional sheets / დამატებითი
ფურცლები1. Waste type
ნარჩენის ტიპი2. Haz / Non Haz
/ საშიშროება3. Physical form
ფორმა4. Quantity
/ რაოდენობა

Unit / ერთეული

5. Process giving rise to waste /
ნარჩენის წარმოშობის პროცესი

Sewage

H/N

Liq

12

m³

Dispatcher's Signature / გამოვსებვის ხელმოწერა

[Signature] / 2021.06.21

C. TRANSPORTERS DETAILS / მატარებლის მფლობელის/მომსახურებლის დეტალები

I certify today that I collected the consignment and that the details herein are correct / დღეს ვდასტურებ, რომ მიღებულ ტვირთს, რომელიც სწორად აღწერილია ამ დოკუმენტში

1. The quantity collected is / მიღებული
რაოდენობა

12

kg / lts / to etc /
კგ/ლ/ტონა და ა.შ.2. Name / სახელი
გვარი

Tamarashvili

Date

21.06.21 at 11:00 am / pm

Company name / კომპანიის სახელი

Sanitari

4. Vehicle registration /
ტრანსპორტის
რეგისტრაცია

W0492W0

D. CONSIGNEES CERTIFICATE / მისმომხმარებლის სერტიფიკატი

1. I received this waste on / მივიღე ეს ნარჩენები _____ at _____ am / pm

2. Quantity received
მიღებული რაოდენობაkg/lts/m³ etc / კგ/ლ/მ³ და ა.შ.3. Vehicle registration /
ტრანსპორტის
რეგისტრაცია6. Waste Facility Name / ნარჩენების სააგენტოს
სახელი4. Name / სახელი-
გვარი

7. On behalf of (Co) / ვის (კომპანიის) სახელით

5. Signature /
ხელმოწერა



WASTE TRANSFER NOTE

ნარჩენების სატრანსპორტო ზედდებულება

Ref No. №

002676

PLEASE COMPLETE IN BLOCK CAPITALS IN INK გთხოვთ შეავსოთ ბეჭდურა ასოებით

A. CONSIGNMENT DETAILS / გადასემის დეტალები

1. Waste described herein is dispatched from/ აქ აღწერილი ნარჩენების გამოგზავნის ადგილი

Facility / მობიექტი

KoBi ORTG

Area name/ადგილი/დასახელება

KoBi

Date/თარიღი

31.3.2021

2. Destination of waste (name, location)/დანიშნულება (დასახელება, მდებარეობა)

G.M.S.T.P.

3 Dispatched by / გამოგზავნილი

V. Khushnashvili

Position/თანამდებობა

KSHE... (handwritten)

Tel/ ტელ

995-543678971

B. DESCRIPTION OF WASTE ნარჩენების აღწერა

No. of additional sheets/დამატ. ფურცლები

1. Waste type ნარჩენის ტიპი

2. Haz/ Non haz / საში-უფნ.

3. Physical form / ფიზ. ფორმა

4. Quantity / რაოდენობა

Unit/ერთეული

5. Process giving rise to waste/ ნარჩენის წარმოშობა პროცესი

1. Waste type	2. Haz/ Non haz	3. Physical form	4. Quantity	Unit	5. Process giving rise to waste
Sewage water	N/H	Liq.	13	m ³	

Dispatcher's Signature / გამოგზავნის ბელმონერი

V. Khushnashvili

C. TRANSPORTERS DETAILS / ინფორმაცია გადასემის მისაზღვრად

I certify today that I collected the consignment and that the details herein are correct/ დღეს ვადასტურებ, რომ მივიღე ტვირთი, რომელიც სწორადაა აღწერილი ამ დოკუმენტში

1. The quantity collected is / მიღებული რაოდენობა

13

kg / lts / te / m³ etc / კგ/ლ/ტ/მ³ და ა.შ.

2. Name / სახელი გვარი

B. Khushnashvili

Date/თარიღი

31.3.2021

at _____ am/pm საათი

3. Signature / ბელმონერი

(Handwritten signature)

Company name / კომპანიის სახელწოდება

Sanitary

4. Vehicle registration / ტრანსპორტი

00-072-LL

D. CONSIGNEES CERTIFICATE / ტვირთის მიმღების სერტიფიკატი

1. I received this waste on / მივიღე ეს ნარჩენები

____/____/____

at _____ am/pm საათი

2. Quantity received/ მიღებ. რაოდენობა

(Empty box)

kg / lts / te / m³ etc / კგ/ლ/ტ/მ³ და ა.შ.

3. Vehicle registration / ტრანსპორტი

(Empty box)

6. Waste Facility name/ნარჩენების ნაგებობის სახელწოდება

4. Name / სახელი გვარი

7. On behalf of (Co) / ვისი (კომპანიის) სახელით

5. Signature / ბელმონერი

Distribution / ტვირთის მისაღ:

White / თეთრი: Generator / აღწერა/აღრი

Yellow / ყვითელი: Receiver / მიმღები



WASTE TRANSFER NOTE

Ref No.
№

001407

ნარჩენების სატრანსპორტო შედგებულება

PLEASE COMPLETE IN BLOCK CAPITALS IN INK

გთხოვთ შევსოთ ზედათქმული

A. CONSIGNMENT DETAILS / ნარჩენების მატარებელი

1. Waste described herein is dispatched from /
აქ აღწერილი ნარჩენების გამოგზავნის ადგილი

Facility /
ობიექტი

CRTG

Area Name / ადგილის
სახელი

503

Date /
თარიღი

7.4.21

2. Destination of waste (name,
location) / დანიშნულება
(დასახელება/მდებარეობა)

გზისაღრი

3. Dispatched by / გამოგზავნილი

ს. ბ. ჯიბუაძე

Position / თანამდებობა

სახმარებელი

593132361

B. DESCRIPTION OF WASTE

ნარჩენების აღწერა

No. of additional sheets / დამატ.
ფურცლების

1. Waste type
ნარჩენის ტიპი

2. Haz / Non Haz
/ სა-ფრ.

3. Physical form
ფორმის

4. Quantity
რაოდენობა

Unit / ერთეული

5. Process giving rise to waste /
ნარჩენის წარმოშობის პროცესი

დაზიანებული
ბეჭდები

სასაბურთა ნარჩენი

11

23

Dispatcher's Signature / გამოგზავნის ხელმოწერა

C. TRANSPORTERS DETAILS / მატარებლის ნარჩენების მატარებლის მატარებელი

I certify today that I collected the consignment and that the details herein are correct / დღეს ვაცხადებ, რომ შევსე ტვირთი, რომელიც მწოდდა აღწერილი ამ დოკუმენტში

1. The quantity collected is / მიღებული
რაოდენობა

11

kg / lts / to / etc /
კგ/ლ/ტ/მ³ და ა.შ.

2. Name / სახელი
ჯგერო

ს. ბ. ჯიბუაძე

Date
თარიღი

7.4.21 at 14:35 am / pm
საათი

3. Signature /
ხელმოწერა

Company name / კომპანიის სახელი/წოდება

ს. ბ. ჯიბუაძე

4. Vehicle registration /
ტრანსპორტი

WA49240

D. CONSIGNEES CERTIFICATE / მატარებლის მიმღებთან სერტიფიკატი

1. I received this waste on / მივიღე ეს
ნარჩენები

7.4.21

at
საათი

am / pm

2. Quantity received
მიღებული რაოდენობა

kg/lts/to/m³ etc /
კგ/ლ/ტ/მ³ და ა.შ.

3. Vehicle registration /
ტრანსპორტი

5. Waste Facility Name / ნარჩენების
სახელწოდება

4. Name / სახელი-
ჯგერო

7. On behalf of (Co) / ვის (კომპანიის) სხდგად

5. Signature /
ხელმოწერა



WASTE TRANSFER NOTE

ნარჩენების სატრანსპორტო შედეგბული

Ref No. №

002343

PLEASE COMPLETE IN BLOCK CAPITALS IN INK გთხოვთ შეავსოთ ბეჭდური ასოებით

A. CONSIGNMENT DETAILS / ბალასის დეტალები

1. Waste described herein is dispatched from/ აქ აღწერილი ნარჩენების გამოგზავნის ადგილი

ად აღწერილი ნარჩენების გამოგზავნის ადგილი

Facility / ობიექტი

CRTG

Area name/ადგილი დასახელი

Kobi smi

Date/ თარიღი

6.10.21

2. Destination of waste (name, location)/დანიშნულება (დასახელება, მდებარეობა)

G.M.S.T.P

3 Dispatched by / გამოგზავნის

[Signature]

Position/თანამდებ.

SHE Engineer

Tel / ტელ

19767897

B. DESCRIPTION OF WASTE ნარჩენების აღწერა

No. of additional sheets/დამატ. ფურც. რაოდ.

1. Waste type ნარჩენის ტიპი	2. Haz/ Non haz / საშიშ. / არაშიშ.	3. Physical form / ფიზ. ფორმა	4. Quantity / რაოდენობა	Unit/ერთეული	5. Process giving rise to waste/ ნარჩენის წარმოშ. პროცესი
sewage	H/N	LIQ	12	m ³	

Dispatcher's Signature / გამოგზავნის ხელმოწერა:

[Signature] 6.10.21

C. TRANSPORTERS DETAILS / ინფორმაცია ბალასწილავის მესახზე

I certify today that I collected the consignment and that the details herein are correct/ დღეს ვადასტურებ, რომ მივიღე ტვირთი, რომელიც სწორადაა აღწერილი ამ დოკუმენტში

1. The quantity collected is / მიღებული რაოდენობა

12

kg / lts / m³ etc / კგ/ლ/მ³ და ა.შ.

2. Name / სახელი გვარი

Tamaraspvili

Date/ თარიღი

6.10.21 at 12:00 am/pm საათი

3. Signature / ხელმოწერა

[Signature]

Company name / კომპანიის სახელწოდება

Sanitari

4 Vehicle registration / ტრანსპორტი

WD442WO

D. CONSIGNEES CERTIFICATE / ტვირთის მიმღების სერტიფიკატი

1. I received this waste on / მივიღე ეს ნარჩენები

at _____ am/pm საათი

2. Quantity received/ მიღებ. რაოდენობა

[Box]

kg / lts / m³ etc / კგ/ლ/მ³ და ა.შ.

3. Vehicle registration / ტრანსპორტი

[Box]

6. Waste Facility name/ნარჩენების ნაგებობის სახელწოდება

4. Name / სახელი გვარი

7. On behalf of (Co) / ვისი (კომპანიის) სახელით

5. Signature / ხელმოწერა

[Box]

Distribution / ტვირთის

White / თეთრი:

Yellow / ყვითელი:



WASTE TRANSFER NOTE

ნარჩენების სატრანსპორტო შედეგბული

Ref No. №

002472

PLEASE COMPLETE IN BLOCK CAPITALS IN INK ვთხოვთ შეავსოთ ბეჭდური ასოებით

A. CONSIGNMENT DETAILS / გადამცემის მონაცემები

1. Waste described herein is dispatched from/ აქ აღწერილი ნარჩენების გამოგზავნის ადგილი

Facility/ობიექტი

CRTG

Area name/ადგილის სახელი

Kobi - 5 მბი

Date/თარიღი

15/05/21

2. Destination of waste (name, location)/დანიშნულება (დასახელება, მდებარეობა)

GUSTP

3 Dispatched by / გამოგზავნილი

Xin Shao Wang

Position/თანამდებ.

916 Engineer

Tel/ტელ

59778971

B. DESCRIPTION OF WASTE / ნარჩენების აღწერა

No. of additional sheets/დამატ. ფურც. რაოდ.

1. Waste type / ნარჩენის ტიპი	2. Haz/ Non haz / საზ. უვნ.	3. Physical form / ფიზ. ფორმა	4. Quantity / რაოდენობა	Unit/ერთეული	5. Process giving rise to waste/ ნარჩენის წარმოშ. პროცესი
Sewage	H/N	Liq	12	m ³	

Dispatcher's Signature / გამოგზავნის ხელმოწერა:

[Signature]

15/05/2021

C. TRANSPORTERS DETAILS / ტრანსპორტის მონაცემები

I certify today that I collected the consignment and that the details herein are correct/ დღეს ვადასტურებ, რომ მივიღე ტვირთი, რომელიც სწორადაა აღწერილი ამ დოკუმენტში

1. The quantity collected is / მიღებული რაოდენობა

12

kg / lts / te / m³ etc / კგ/ლ/ტ/მ³ და ა.შ.

2. Name / სახელი გვარი

Tamarashvili

Date/თარიღი

15/05/21 at 10:30 am/pm საათი

3. Signature / ხელმოწერა

[Signature]

Company name / კომპანიის სახელი/ადგილი

sanitari

4. Vehicle registration / ტრანსპორტ.

W0442W0

D. CONSIGNEES CERTIFICATE / ტვირთის მიმღების სერტიფიკატი

1. I received this waste on / მივიღე ეს ნარჩენები

at _____ am/pm საათი

2. Quantity received/ მიღებ. რაოდენობა

[Blank]

kg / lts / te / m³ etc / კგ/ლ/ტ/მ³ და ა.შ.

3. Vehicle registration / ტრანსპორტ.

[Blank]

6. Waste Facility name/ნარჩენების ნაგებობის სახელი/ადგილი

4. Name / სახელი გვარი

7. On behalf of (Co) / ვისი (კომპანიის) სახელით

5. Signature / ხელმოწერა

Distribution / ტვირთის

White / თეთრი

Yellow / ყვითელი



WASTE TRANSFER NOTE

Ref No. N°

004254

ნარჩენების სატრანსპორტო შედეგბუკლი

PLEASE COMPLETE IN BLOCK CAPITALS IN INK

A. CONSIGNMENT DETAILS / ნარჩენების შედეგბუკლი

1. Waste described herein is dispatched from / აქ აღწერილი ნარჩენების გამოსვლის ადგილი

Facility / ობიექტი

CRTG

Area Name / რაიონის სახელი

KOBi

Date / თარიღი

22.05.21

2. Destination of waste (name, location) / ნარჩენების მიმართული ადგილი (სახელი, მდებარეობა)

G.M. S.T.P.

3. Dispatched by / გამოსვლის მიმწოდებელი

[Signature]

Position / თანამდებობა

Tel / ტელ

41012219890606597

B. DESCRIPTION OF WASTE / ნარჩენების აღწერა

No. of additional sheets / დამატებითი ფურცლების რაოდენობა

1. Waste type / ნარჩენის ტიპი

2. Haz Non Haz / საშიშროების / არა-საშიშროების

3. Physical form / ფიზიკური ფორმა

4. Quantity / რაოდენობა

Unit / ერთეული

5. Process giving rise to waste / ნარჩენის წარმოების პროცესი

Sewage water

MH

L.S.

13

m³

Dispatcher's Signature / გამოსვლის ხელმოწერა

[Signature]

C. TRANSPORTERS DETAILS / ტრანსპორტის საშუალების მფლობელის დეტალები

I certify today that I collected the consignment and that the details herein are correct / დღეს ვაცხადებ, რომ შეგროვებული ნარჩენების დეტალები სწორია

1. The quantity collected is / შეგროვებული რაოდენობა

13

kg / lbs / m³ etc / კგ / ფუნტი / მ³ და სხვა

2. Name / სახელი

B. Azhata Shvili

Date / თარიღი

22, 05, 21

at 13⁰⁰ am / pm საათი

3. Signature / ხელმოწერა

[Signature]

Company name / კომპანიის სახელი

Sanitary

4. Vehicle registration / ტრანსპორტის რეგისტრაცია

99-877-2L

D. CONSIGNEES CERTIFICATE / მიმწოდებლის ცხადობა

1. I received this waste on / მივიღე ეს ნარჩენები

at / საათი

am / pm

2. Quantity received / მიღებული რაოდენობა

[]

kg/lbs/m³ etc / კგ/ფუნტი/მ³ და სხვა

3. Vehicle registration / ტრანსპორტის რეგისტრაცია

[]

6. Waste Facility Name / ნარჩენების საცდის სახელი

4. Name / სახელი

7. On behalf of (Co) / ვინა (კომპანიის) სახელით

5. Signature / ხელმოწერა

Distribution / გავრცელება

White / თეთრი

Yellow / ყვითელი

Municipal Waste Receipts

მიღება-ჩაბარების აქტი # 01/03-3ა

თარიღი: 01.03.2021

საფუძეელი პროდუქციის მიღება-ჩაბარებაზე ხელშეკრულება #08/04-1

პროდუქციის მფლობელი ორგანიზაცია: შპს „ჩინეთის სარკინიგზო გვირაბის ჯგუფი კო ფილიალი საქართველოში“

ს/კ. 405353610; მისამართი: ქ.თბილისი, ოსეთის ქ #24

პროდუქციის გაცემაზე პასუხისმგებელი პირი: ცენ დაოიონგი

პროდუქციის მიმღები შ.პ.ს მედიკალტექნოლოგი ს/კ404384590

მისამართი: დ. აღმაშენებლის ხეივანი მე-12კმ.

პასუხისმგებელი პირი: ხატია ზერაზე



განადგურების მიზნით, გამოიტანილი იქნა შემდეგი სახის ნარჩენები.



ნარჩენის კოდი	ნარჩენის დასახელება	განზომილების ერთეული
15 02 02*	აბსორბენტები, ფილტრის მასალები (ზეთის ფილტრების ჩათვლით, რომელიც არ არის განხილული სხვა კატეგორიაში), საწმენდი ნაჭრები და დამცავი ტანსაცმელი, რომელიც დაბინძურებულია სახიფათო ნივთიერებებით	28 კგ
17 05 03*	ნიადაგი და ქვები, რომლებიც შეიცავს სახიფათო ნივთიერებებს	52 კგ
18 01 04*	ნარჩენები, რომელთა შეგროვება და განადგურება ექვემდებარება სპეციალურ მოთხოვნებს ინფექციების გავრცელების პრევენციის მიზნით	4 კგ
08 01 11*	ნარჩენი საღებავი და ლაქი	7 კგ
08 03 17*	პრინტერის მელანის ნარჩენები	2 კგ
13 01 13*	ნარჩენი ზეთი (ჰიდრაულიკური და სხვ.)	100 ლიტრი
20 01 25*	ნარჩენი საკვები ზეთი	23 კგ

ნარჩენების გატანის ადგილი: ყაზბეგის მუნიციპალიტეტი, სოფ. კობი

ა/მანქანის სახ # XDX-414 მბლოლი: ნიკოლოზ ბოჭორიძე პ/ნ. 01002017751

პროდუქციის მიტანის ადგილი გარდაბნის რ/ნ სოფ. მარჯოფი. თარიღი: 01.03.2021წ

პროდუქცია ჩააზარა (გვარი, სახელი, ხელმოწერა)  

პროდუქცია შიილი (გვარი, სახელი, ხელმოწერა)  

მიღება-ჩაბარების აქტი # 17/06-1ა

თარიღი: 17.06.2021

საფუძველი პროდუქციის მიღება-ჩაბარებაზე ხელშეკრულება #08/04-1

პროდუქციის მფლობელი ორგანიზაცია: შპს ჩინეთის სარკინიგზო გვირაბის ჯგუფი კო., ფილიალი საქართველოში. (CRTG, branch in Georgia)

ს/კ. 405353610 მისამართი: კობი, ყაზბეგი

პროდუქციის გაცემაზე პასუხისმგებელი პირი: ლელა ბიჩიაშვილი

პროდუქციის მიმღები შ.პ.ს მედიკალტექნოლოჯი ს/კ404384590

მისამართი: დ. აღმაშენებლის ხეივანი მე-12კმ.

პასუხისმგებელი პირი: ხატია ზერაძე

განადგურების მიზნით, გამოიტანილი იქნა შემდეგი სახის ნარჩენები

#	ნარჩენის დასახელება	წონა
1	ნავთობ პროდუქტებით დაბინძურებული წყალი	820 ლიტრი
2	ნიადაგი და ქვები, რომლებიც შეიცავს სახიფათო ნივთიერებებს	232 კგ
3	ნარჩენები, რომელთა შეგროვება და განადგურება ექვემდებარება სპეციალურ მოთხოვნებს ინფექციების გაფრცელების პრევენციის მიზნით	1 კონტ. 60 ლიტრი.
4	ნარჩენი საღებავი და ლაქი	8 კგ
5	პრინტერის მელანის ნარჩენები	2.7 კგ
6	ნავთობპროდუქტებით დაბინძურებული ჩვრები	159 კგ
7	ნავთობპროდუქტებით დაბინძურებული ფილტრები	32 კგ
8	ნარჩენი საკვები ზეთი	38 კგ
9	ქიმიური ნაერთით დაბინძურებული მასა	1622 კგ
10	ნავთობპროდუქტების ნარჩენი	120 ლიტრი

ნარჩენების გატანის ადგილი: ყაზბეგის მუნიციპალიტეტი, სოფ. კობი

ა/შანჯანის სახ # GG 479 QG , მძღოლი: ვლადიმერ ხუსკივაძე

პროდუქციის მიტანის ადგილი გარდაბნის რაიონი, მარტყოფი თარიღი: 17.06.2021წ



პროდუქცია ჩააბარა (გვარი,სახელი,ხელმოწერა) -----

პროდუქცია მიიღო (გვარი,სახელი,ხელმოწერა) -----



სამედიცინო, ფარმაცევტული, საყოფაცხოვრებო, საკანცელარიო, ლაბორატორიული და სხვა სახიფათო და არა სახიფათო ნარჩენების

განადგურების აქტი № 12/03-6გ

განადგურების ადგილი

თარიღი: 12.03.2021წ.

გარდაბნის რ-ნი სოფ. მარტყოფი

პროდუქციის მფლობელი ორგანიზაცია: შპს „ჩინეთის სარკინიგზო გვირაბის ჯგუფი კო ფილიალი საქართველოში“ ს/კ 405353610

პროდუქციის განადგურებაზე პასუხისმგებელი ორგანიზაცია: შ.პ.ს „მედიკალ ტექნოლოგი“ ს/კ.404384590, პასუხისმგებელი პირი: ხატია ბერაძე ვადასტურებ, რომ განადგურდა, ზემოთ აღნიშნული პროდუქციის მფლობელი ორგანიზაციის კუთვნილი საქონელი:

ნარჩენის კოდი	ნარჩენის დასახელება	განზომილების ერთეული
15 02 02*	აბსორბენტები, ფილტრის მასალები (ზეთის ფილტრების ჩათვლით, რომელიც არ არის განზილული სხვა კატეგორიაში), საწმენდი ნაჭრები და დამცავი ტანსაცმისი, რომელიც დაზიანებულია სახიფათო ნივთიერებებით	28 კგ
17 05 03*	ნიადაგი და ქვები, რომლებიც შეიცავს სახიფათო ნივთიერებებს	52 კგ
18 01 04*	ნარჩენები, რომელთა შეგროვება და განადგურება ექვემდებარება სპეციალურ მოთხოვნებს ინფექციების გავრცელების პრევენციის მიზნით	4 კგ
08 01 11*	ნარჩენი საღებავი და ლაქი	7 კგ
08 03 17*	პრინტერის მულანის ნარჩენები	2 კგ
13 01 13*	ნარჩენი ზეთი (ჰიდრაულიკური და სხვ.)	100 ლიტრი
20 01 25*	ნარჩენი საკვები ზეთი	23 კგ

საფუძველი: მიღება-ჩაბარების აქტი #01/03-3ა, თარიღი 01.03.2021წ.

ზემოთ აღნიშნული პროდუქციის განადგურება განხორციელდა ინსინერაციის, განზავების, განეიტრალების, დამსხვრევის, დაჩეჩქვის და გამოტუტვის მეთოდით.

შ.პ.ს. „მედიკალ ტექნოლოგი“-ს

დირექტორი (წარმომადგენელი)



მომსახურების ხელშეკრულება №CRTG-SA-TRC-001/20

თბილისი
17.07.2020

ერთი მხრივ - შპს ჩინეთის სარკინიგზო გვირაბის უკუფი კო., ფილიალი საქართველოში, საიდენტიფიკაციო კოდი: 405353610, იურიდიული მისამართი: საქართველო, თბილისი, მთაწმინდის რაიონი, პეტრიაშვილის ქუჩა N10, წარმოდგენილი მისი დირექტორის ვაი ფეიფის (პასპორტის ნომერი: E64737933) მიხედვით პირის (მინდობილობა გაცემული 03.10.2019 წელს, ნოტარიუსი: ანეკლა მანიას მიერ) ცენ დაოიონგის (პასპორტის ნომერი: E22588093) სახით, შემდგომში "დამკვეთი"

და
მეორე მხრივ - შპს. "თი ერ სი", საიდენტიფიკაციო კოდი: 415595591, მისამართი: საქართველო, თბილისი, ქინძმარაულის 13, წარმოდგენილი მისი დირექტორის ზურაბი ზაზაძის სახით, შემდგომში "შემსრულებელი",
ვდებთ წინამდებარე ხელშეკრულებას შემდეგი პირობებით:

მუხლი 1. ხელშეკრულების საგანი

- 1.1. დამკვეთი უკვეთავს, ხოლო შემსრულებელი იღებს ვალდებულებას წინამდებარე ხელშეკრულებით განსაზღვრული პირობებით გადაამუშაოს დამკვეთის მიერ მიწოდებული მეორადი საბურავები, გარდა სპეცტექნიკისა და ტრაქტორის საბურავებისა შპს „თი ერ სი“-ის კუთვნილ ზაზაზე, მდებარე შემდეგ მისამართზე: საქართველო, ქალაქი თბილისი, ქინძმარაულის 13, შემდგომში „მომსახურება“;
- 1.2. დამკვეთი იღებს ვალდებულებას გადაუხადოს შემსრულებელს, ამ უკანასკნელის მიერ გაწეული მომსახურების ღირებულება ხელშეკრულების მე-2 მუხლის პირობათა დაცვით;
- 1.3. საქართველოს გარემოს დაცვის სამინისტროს მიერ შპს „თი ერ სი“-ის მინიჭებული აქვს არასახიფათო ნარჩენების წინასწარი დამუშავების (რეგისტრაციის ნომერი 2924366964) და ნარჩენების შეგროვება ან და ტრანსპორტირების (რეგისტრაციის ნომერი 2494351801) უფლება.

მუხლი 2. ანგარიშსწორების პირობები

- 2.1. მხარეთა შეთანხმებით, ერთი ერთეული მეორადი საბურავის გადამუშავების ვასი შეადგენს 0.8 ლარა, დღ-ის ჩათვლით;
- 2.2. მხარეთა შორის ანგარიშსწორება მოხდება საანგარიშო თვეში ერთხელ, კერძოდ ყოველი საანგარიშო თვის ხოლოს მხარეთა შორის მოხდება მიღება-ჩაბარების აქტის ხელმოწერა და შემსრულებელის მიერ შესაბამისი ანგარიშვაქტურის გამოწერა, რის საფუძველზეც დამკვეთი მოახდენს გაწეული მომსახურების ღირებულების გადახდას, არაუგვიანეს მომდევნო საანგარიშო თვის 15 რიცხვამდე;

მუხლი 3. მხარეთა უფლებები და ვალდებულებები

- 3.1. დამკვეთი ვალდებულია, საკუთარი ხარჯით მოახდინოს მეორადი საბურავების ტრანსპორტირება დანიშნულების ადგილამდე; საქართველო, ქალაქი თბილისი, ქინძმარაულის 13.
- 3.2. შემსრულებელი ვალდებულია მოახდინოს შესაბამისი მომსახურების შესრულება.
- 3.3. შემსრულებელი ვალდებულია ყოველთვიურად გამოუწეროს დამკვეთს ანგარიშვაქტურა, გაწეული მომსახურების შესაბამისად;
- 3.4. შემსრულებელი ვალდებულია ყოველთვიურად მიაწოდოს დამკვეთს, მთაწმინდის რაიონის მიერ მიწოდებული საბურავების საქართველოს კანონმდებლობით უდგენილი კლასის შესაბამისად გადამუშავების დამადასტურებელი დოკუმენტი;



თბილისი
17.07.2020

მუხლი 4. პასუხისმგებლობა

- 4.1. ხელშეკრულებით განსაზღვრული ვალდებულებების შეუსრულებლობის ან არაჯეროვნად შესრულების შემთხვევაში, მხარეები პასუხს აგებენ საქართველოს კანონმდებლობით და ამ ხელშეკრულებით გათვალისწინებული პირობებით და წესით, თითოეული მხარე, ვალდებულია მეორე მხარეს აღნაზღაუროს ვალდებულებების შეუსრულებლობით ან არაჯეროვნად შესრულებით გამოწვეული ნებისმიერი პირდაპირი თუ არაპირდაპირი ზიანი.
- 4.2. შესრულებელი პასუხისმგებელია იმ ზარალზე, რაც შესაძლოა მიადგეს დამკვეთს შესრულებელის მიერ საბურავების არასწორი, არასანათო ან/და საქართველოს კანონმდებლობით გათვალისწინებული წესის დარღვევით გადაამუშავების შედეგად;

მუხლი 5. ხელშეკრულების მოქმედების ვადა

- 5.1. ხელშეკრულება ძალაში შედის ხელმოწერის მომენტიდან და მოქმედებს 1 წლის ვადით;
- 5.2. ხელშეკრულების ვადა გასვლამდე 30 კალენდარული დღით ადრე, თუ ხელშეკრულების არცერთი მხარე არ გამოთქვამს წერილობით სურვილს მისი შეწყვეტის თაობაზე, წინამდებარე ხელშეკრულების მოქმედების ვადა გაგრძელდება ავტომატურად მომდევნო ერთი კალენდარული წლის ვადით, აღნიშნული მექანიზმი მოქმედებს ყოველ მომდევნო პერიოდზე;
- 5.3. წინამდებარე ხელშეკრულების შეწყვეტა მხარეებს არ ათავისუფლებს მის შეწყვეტამდე წარმოშობილი ვალდებულებებისგან.

მუხლი 6. მხარეთა განცხადებები და გარანტიები

- 6.1. მხარეები აცხადებენ და იძლევიან გარანტიას, რომ:
 - 6.1.1. ჩამოყალიბებულნი არიან საქართველოში მოქმედ კანონმდებლობასთან სრულ შესაბამისობაში;
 - 6.1.2. აქვთ სრული უფლებამოსილება ხელი მოაწერონ ხელშეკრულებას;
- 6.2. ხელშეკრულების ხელმოწერა და ხელშეკრულებით გათვალისწინებული მოქმედებების შესრულებით არ არღვევენ და/ან არ დაარღვევენ მოქმედ კანონმდებლობას, საკუთარ წესდებას და/ან სხვა ნებისმიერ მარეგულირებელ დოკუმენტს.
- 6.3. შესრულებელი იძლევა გარანტიას, რომ მას აქვს შესაბამისი ნებართვა მეორადი საბურავების გადამამუშავების თაობაზე, შესაბამისად იმ შემთხვევაში თუ აღნიშნული ქმედებით დაკვეთა მიადგება რაიმე სახის ზიანი, სრული პასუხისმგებლობა დაეკისრება შესრულებელს.

მუხლი 7. ფორს-მაჟორი

- 7.1. მხარეები თავისუფლდებიან ხელშეკრულებით გათვალისწინებული ვალდებულებების შესრულებლობით ან არაჯეროვანი შესრულებით გამოწვეული პასუხისმგებლობისგან იმ შემთხვევაში, თუ დამტკიცდა, რომ ვალდებულებების შეუსრულებლობა ან არაჯეროვანი შესრულება განპირობებული იყო დაუძლეველი ძალის (სტიქიური უბედურება, საგანგებო ან საომარი მდგომარეობა, ეპიდემია, სამოქალაქო მღელვარება, გაფიცვა, აგრეთვე მთავრობის მხრიდან ისეთი ნორმატიული ან ადმინისტრაციული შეზღუდვის დადგენა, რომელიც ზეგავლენას ახდენს ვალდებულების შესრულებაზე) ანუ აონკრეტულ პირობებში საგანგებო, გადაულახავი და გარდაუვალი მოქმედებით;
- 7.2. მხარეები ვალდებული არიან დაუყოვნებლივ, წერილობით შეატყობინონ ერთმანეთს ფორს-მაჟორული გარემოების დადგომის და დასრულების შესახებ.

Handwritten signature



(CRTG)*

თბილისი
17.07.2020

მუხლი 8. კონფიდენციალობა

8.1. ხელშეკრულების თითოეული მხარე იღებს ვალდებულებას დაიცვას და არ გაახმაუროს ხელშეკრულებიდან გამომდინარე ინფორმაცია მეორე მხარის წერილობითი თანხმობის გარეშე, გარდა საქართველოს კანონმდებლობით გათვალისწინებული შემთხვევებისა.

მუხლი 9 დასკვნითი დებულებები

- 9.1. ხელშეკრულება შედგენილია ქართულ ენაზე, ორ ეგზემპლარად, რომელთაგან თითოეულს გააჩნია თანაბარი იურიდიული ძალა;
- 9.2. ხელშეკრულების რომელიმე მუხლის და/ან პუნქტის საქართველოს კანონმდებლობის საფუძველზე ბათილობის შემთხვევაში დანარჩენი მუხლები და/ან პუნქტები ინარჩუნებენ იურიდიულ ძალას, ხოლო ბათილი მუხლის და/ან პუნქტის წაცვლად კი მოქმედებს ისეთი მუხლი და/ან პუნქტი, რომლითაც ადვილად მიიღწევა ხელშეკრულების მიზანი;
- 9.3. ხელშეკრულებაში ცვლილებების და დამატებების შეტანა შესაძლებელია მხოლოდ წერილობითი ფორმით, რომელიც ძალაში შევა თითოეული მხარის მიერ ნასზე ხელმოწერის მომენტიდან;
- 9.4. ხელშეკრულების დანართ(ებ)ი წარმოადგენს მის განუყოფელ ნაწილს, დანართ(ებ)ში ცვლილებების და დამატებების შეტანა შესაძლებელია მხოლოდ წერილობითი ფორმით, რომელიც ძალაში შევა თითოეული მხარის მიერ ნასზე ხელმოწერის მომენტიდან.

მუხლი 10. მხარეთა რეკვიზიტები და ხელმოწერები	
„დამკვეთი“	„შემსრულებელი“
<p>შპს ჩინეთის სარკინიგზო გვირაბის ჯგუფი კო., ფილიალი საქართველოში საიდენტიფიკაციო კოდი: 405353610 მომსახურე ბანკი: სს საქართველოს ბანკი SWIFT: BAGAGE22 ანგ.: GE14BG000000161886186GFL მინდობილი პირი: ცენ დაოიონგი ხელმოწერა: /  /</p>	<p>შ.პ.ს. „თი ერ სი“ საიდენტიფიკაციო კოდი: 415595591 მისამართი: საქართველო, თბილისი, ქინძმარაულის 13 მომსახურე ბანკი: სს თიბისი ბანკი SWIFT: TBCBG22 ანგ.: GE12TB7474236020100001 დირექტორი: ზურაბი ბაზუღაძე ხელმოწერა: /  /</p>



Annex 11: Ministry Comments on SDA# 1 Kobi Site



გაეროს დაცვისა და
სოფლის მეურნეობის
სამინისტრო

MINISTRY OF ENVIRONMENTAL
PROTECTION AND AGRICULTURE
OF GEORGIA

N 4434/01
05/05/2021

საქართველო
GEORGIA

4434-01-2-202105051018



საქართველოს საავტომობილო გზების დეპარტამენტს

ასლი: სსდ - გარემოსდაცვითი ზედამხედველობის დეპარტამენტს

საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის სამინისტრომ განიხილა თქვენი 2021 წლის 22 მარტის №2 12/4099 (სამინისტროს რეგისტრაციით №4948) წერილი თანდართული დოკუმენტაციით, რომლებიც ეხება „დუმუთისა და ყაზბეგის მუნიციპალიტეტების ტერიტორიაზე საქართველოს საავტომობილო გზების დეპარტამენტის კონვალი-ლარსის საავტომობილო გზის ქვეშეთი-კობის მონაკვეთის მშენებლობასა და ექსპლუატაციაზე გარემოსდაცვითი გადაწყვეტილების გაცემის შესახებ“ საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის მინისტრის 2019 წლის 25 აპრილის N2-354 ბრძანების მე-17 პუნქტით გათვალისწინებული ვალდებულების შესრულების მიზნით, ქვეშეთი-კობის გზის მონაკვეთის მარჯვლი ლოტის მშენებლობის ფარგლებში მოწოდებული №2 ფუჭი ქანების სანაყაროს მოწყობის პროექტის სამინისტროში შესათანხმებლად წარმოდგენას.

მინისტრის 2019 წლის 25 აპრილის N2-354 ბრძანების მე-17 პირობის თანახმად, საქართველოს საავტომობილო გზების დეპარტამენტმა სანაყაროების მოწყობამდე უნდა უზრუნველყოს ფუჭი ქანების სანაყაროების დეტალური პროექტების სამინისტროში შესათანხმებლად წარმოდგენა shape ფაილებთან ერთად, სადაც ასევე გათვალისწინებული იქნება ფრინველთა ჰაბიტატებზე (ისეთი როგორცაა მაგ: ქავეიანი) ზემოქმედების შესახებ ინფორმაცია, ხოლო საჭიროების შემთხვევაში, ასევე წარმოდგენილ უნდა იქნას სანაყაროს განთავსების ალტერნატიული ვარიანტები.

თქვენ მიერ წარმოდგენილი დოკუმენტაციის თანახმად, №2 ფუჭი ქანების სანაყაროს მოწყობა დაგეგმილია სოფ. კობთან მდებარე 5,2673 ჰა ფართობის მიწის ნაკვეთზე. თქვენ მიერ გარემოსდაცვითი გადაწყვეტილების მიღების მიზნით წარმოდგენილი გარემოზე ზემოქმედების შეფასების ანგარიშის თანახმად (7.4 სამშენებლო ზანაკობანაკები, სამუშაო უბნები, ფუჭი ქანების სანაყაროები, ნაყოფიერი ნიადაგის და მსალის განთავსების უბნები, გვ. 90) „ტერიტორია მდებარეობს დაცულ ტერიტორიასთან სიახლოვეს, მსალის ამ უბანზე

გატანა-დასაწყობებისას ხმაურმა შესაძლოა გავლენა იქონიოს მოზუდარ ფრინველებზე, რის გამოც აღნიშნული ტერიტორიის გამოყენება არამიზანშეწონილად ჩაითვალა“. აღნიშნულიდან გამომდინარე დაზუსტებას საჭიროებს მოცემულ ტერიტორიაზე სანაყაროს მოწყობის საკითხი.

დამატებით გაცნობებთ, რომ სანაყაროს განსათავსებლად გამოყოფილი მიწის ნაკვეთი წარმოდგენს მდინარე თერგის ჭალის ტერასას და როგორც წარმოდგენილი აერო-ფოტო სურათიდან ჩანს წყალდიდობის და წყალმოვარდნის დროს განიცდის გვერდით ეროზიას. ამდენად მოცემული სანაყაროს დამცავი ნაგებობა (ქვანაყარის სახით) უნდა ეფუძნებოდეს საინჟინრო ჰიდროლოგიურ გამოთვლებს. წარმოდგენილი უნდა იყოს, საპროექტო უბანზე, მდინარის საპროექტო წყლის ხარჯის მნიშვნელობა, სანაყაროს გასწვრივ მდინარის დატბორვისა და კალაპოტის წარეცხვის ნიშნულები, მდინარის საპროექტო სიჩქარე, ასევე დასაზუსტებელია ქვანაყარით თუ გაბიონის ნაგებობით ხდება სანაყაროს ტერიტორიის დაცვა, რადგან ტექსტურ და გრაფიკულ ნაწილში სხვადასხვა მონაცემებია მოყვანილი, ასევე დოკუმენტაციას არ ახლდა გეოლოგიური ნაწილი.

გთხოვთ, აღნიშნული შენიშვნების გათვალისწინებით და მინისტრის 2019 წლის 25 აპრილის N2-354 ბრძანების მე-17 პირობის შესაბამისად, სანაყაროების მოწყობამდე,